STRAIGHT APPROACH TO MICROSOFT OFFICE 2007/2010

Principles of Internet & Networking

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Intersekt Publishers, 2014

Competitive edge:

Why Opt for this Book

Straight approach;

- Introduction to Principles of Internet & Networking
- Well explained, straight forward approach with the aid of examples is thoroughly done as with regard to Internet & Networking Principles.
- Internet & networking principles/skills are added for income generating purposes to scholars.
- Revision Question Bank at the end of the book
- www.ictweb.com is provided for free ICT past paper downloads, uploads, question & answer aid, and general research assistance at all levels (O-Level, A-Level & higher institutions).

  In addition this site will also contain answers to the question bank attached at the end of the book among other various ICT problem questions that are handled.

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TABLE OF CONTENTS **Page**

CHAPTER ONE
Internet & Networking Principles

Networking

A **computer network** or **data network** is a telecommunications network that allows computers to exchange data. In computer networks, networked computing devices pass data to each other along data connections. The connections (network links) between nodes are established using either cable media or wireless media. The best-known computer network is the Internet.

Network computer devices that originate, route and terminate the data are called network nodes. Nodes can include hosts such as servers and personal computers, as well as networking hardware. Two devices are said to be networked when a device is able to exchange information with another device.

What You Need To Know

When looking at networking basics, understanding the way a network operates is the first step to understanding routing and switching. The network operates by connecting computers and peripherals using two pieces of equipment; switches and routers. Switches and routers, essential networking basics, enable the devices that are connected to your network to communicate with each other, as well as with other networks.

Though they look quite similar, routers and switches perform very different functions in a network.

Networking Basics

Switches (Reference: page 20 below)

Switches are used to connect multiple devices on the same network within a building or campus. For example, a switch can connect your computers, printers and servers, creating a network of shared resources. The switch, one aspect of your networking basics, would serve as a controller, allowing the various devices to share information and talk to each other. Through information sharing and resource allocation, switches save you money and increase productivity.

There are two basic types of switches to choose from as part of your networking basics:

managed and unmanaged.

- An unmanaged switch works out of the box and does not allow you to make changes. Home-networking equipment typically offers unmanaged switches.
- A managed switch allows you access to program it. This provides greater flexibility to your networking basics because the switch can be monitored and adjusted locally or remotely to give you control over network traffic, and who has access to your network.

Routers (Reference: page 20 below)

- **Routers**, the second valuable component of your networking basics, are used to tie multiple networks together. For example, you would use a router to connect your networked computers to the Internet and thereby share an Internet connection among many users. The router will act as a dispatcher, choosing the best route for your information to travel so that you receive it quickly.

  Routers analyze the data being sent over a network, change how it is packaged, and send it to another network, or over a different type of network. They connect your business to the outside world, protect your information from security threats, and can even decide which computers get priority over others.

  Depending on your business and your networking plans, you can choose from routers that include different capabilities. These can include networking basics such as:

  - **Firewall:** Specialized software that examines incoming data and protects your business network against attacks
  - **Virtual Private Network (VPN):** A way to allow remote employees to safely access your network remotely
  - **IP Phone network:** Combine your company's computer and telephone network, using voice and conferencing technology, to simplify and unify your communications

Networking: Understanding Your Needs and Options

As with most complex technologies, there's no one-size-fits-all solution when it comes to networking. The needs and resources of each unique organization will correlate to a different set of networking solutions. This means that an individual or team that knows their organization and the relevant options will need to carefully consider the situation and determine the optimal network design for their situation. In this, article we'll discuss the major decision points to consider when planning a new network and the questions you should use as the basis for your decisions.

The following are some questions that might help to guide your network planning process:

- What networking infrastructure do you already have in place?
- How many computers and networked devices do you have?
- Does your office's design and layout impose physical constraints on your planning process? For example, is there available space in your floors, walls, or ceilings (often in the form of electrical conduits) where you can string your network cables?
- What networked applications do end users rely on most heavily, and how much bandwidth do these applications consume?
- Are you planning any changes to your technology infrastructure (such as additional employees or new applications) that might have an impact on your networking needs?
- How much money do you have budgeted for the installation and maintenance of your networks?

Networking Options

The answers to the questions above will determine how your organization designs and builds its network. The first determination is deciding what scale network you're trying to design or re-design. The vendors you'll work with, the technologies at your disposal, and the decisions you'll have to make vary considerably depending on whether you're building WAN links or LAN infrastructure.

Network Size and Scale

Scale is usually the first and most important determination in network planning as it will often determine or influence your other decisions. While there are other scales discussed in networking literature, most nonprofits and libraries only need to focus on the two or three network scales that impact small and mid-sized organizations (LANs, WANs, and CANs).

A **local area network (or LAN)** is designed and implemented at the scale of a single building or office. Its primary function is the interconnection of the computing resources within a single organization. In most cases, LANs use Ethernet over twisted-pair cabling or wireless technology.

A **wide area network (or WAN)** connects a single office or branch LAN to its parent organization's network and all the millions of networks that together make up the Internet. Most authorities define WAN as a network that crosses one or more jurisdictional boundaries (metropolitan, regional, or national). WAN links usually fall under the purview of ISPs and telecommunications companies. Very few organizations have the resources to build and maintain their own WAN links, and it's usually more cost-effective to lease them from the local phone or cable company. WAN links depend on numerous technologies that vary considerably in terms of speed, cost, and bandwidth.

A **campus area network (or CAN)** connects multiple LANs belonging to the same organization when they're in close geographic proximity. Since most nonprofits operate at the scale of a single office or main office with branches, CANs are only a consideration for the largest organizations. As with WANs, an organization can build its own CAN, but most opt to lease facilities from their local ISPs.

Network Topology and Types of Network Topologies

What is Network Topology?

Computer network topology is the way various components of a network (like nodes, links, peripherals, etc) are arranged. Network topologies define the layout, virtual shape or structure of network, not only physically but also logically. The way in which different systems and nodes are connected and communicate with each other is determined by topology of the network.

Topology can be physical or logical. *Physical Topology* is the physical layout of nodes, workstations and cables in the network; while *logical topology* is the way information flows between different components.

In general, physical topology relates to a core network whereas logical topology relates to basic network.

Types of Physical Network Topologies

1) Bus Topology
2) Star Topology
3) Ring Topology
4) Mesh Topology
5) Tree Topology
6) Hybrid Topology

Factors to be taken into consideration while choosing a Network topology

1) Scale of your project (in terms of number of components to be connected).
2) Amount of traffic expected on the network.
3) Budget allotted for the network i.e. amount of money you are willing to invest.
4) Required response time

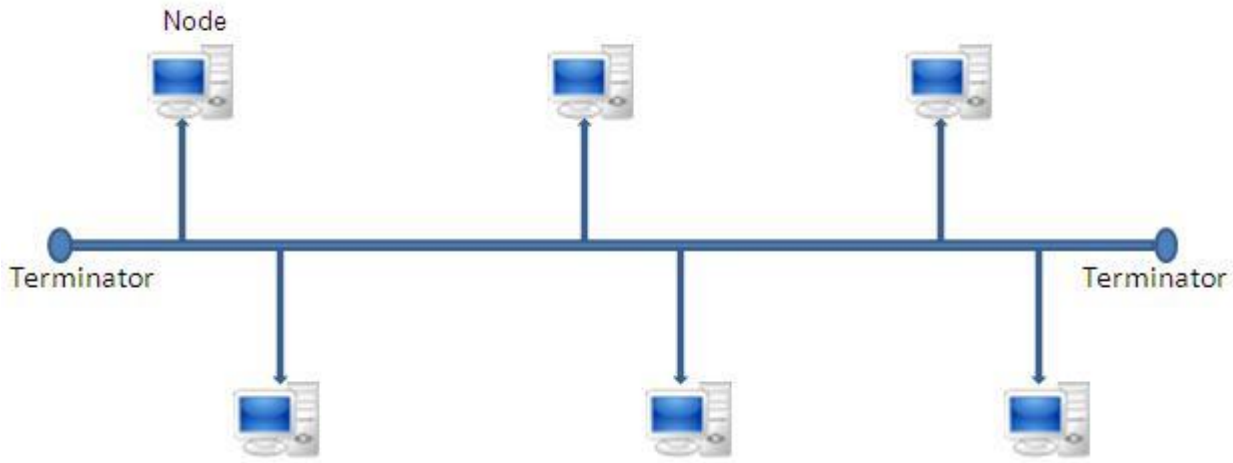
1. Bus Topology: Advantages and Disadvantages

What is Bus topology?

Bus Topology is the simplest of network topologies. In this type of topology, all the nodes (computers as well as servers) are connected to the single cable (called bus), by the help of interface connectors. This central cable is the backbone of the network and is known as Bus (thus the name). Every workstation communicates with the other device through this Bus.

A signal from the source is broadcasted and it travels to all workstations connected to bus cable. Although the message is broadcasted but only the intended recipient, whose MAC address or IP address matches, accepts it. If the MAC /IP address of machine doesn't match with the intended address, machine discards the signal.

A terminator is added at ends of the central cable, to prevent bouncing of signals. A barrel connector can be used to extend it. Below I have given a basic diagram of a bus topology and then have discussed advantages and disadvantages of Bus Network Topology



Advantages (benefits) of Linear Bus Topology

1) It is easy to set-up and extend bus network.

2) Cable length required for this topology is the least compared to other networks.

3) Bus topology costs very less.

4) Linear Bus network is mostly used in small networks. Good for LAN.

Disadvantages (Drawbacks) of Linear Bus Topology

1) There is a limit on central cable length and number of nodes that can be connected.

2) Dependency on central cable in this topology has its disadvantages. If the main cable (i.e. bus) encounters some problem, whole network breaks down.

3) Proper termination is required to dump signals. Use of terminators is must.

4) It is difficult to detect and troubleshoot fault at individual station.

5) Maintenance costs can get higher with time.

6) Efficiency of Bus network reduces, as the number of devices connected to it increases.

7) It is not suitable for networks with heavy traffic.

8) Security is very low because all the computers receive the sent signal from the source.

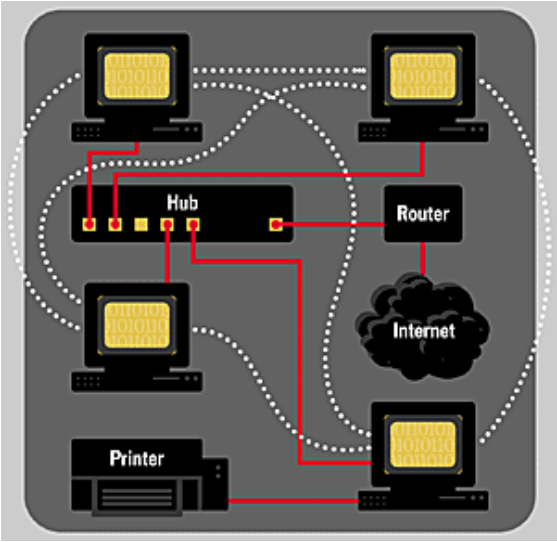
What is Peer to Peer architecture?

In its simplest form, a **peer-to-peer (P2P)** network is created when two or more PCs are connected and share resources without going through a separate server computer. A P2P network can be an ad hoc connection—a couple of computers connected via a Universal Serial Bus to transfer files.

A **peer-to-peer (P2P) network** is a type of decentralized and distributed network architecture in which individual nodes in the network (called *"peers"*) act as both suppliers and consumers of resources, in contrast to the centralized client–server model where client nodes request access to resources provided by central servers.

In a peer-to-peer network, tasks (such as searching for files or streaming audio/video) are shared amongst multiple interconnected peers who each make a portion of their resources (such as processing power, disk storage or network bandwidth) directly available to other network participants, without the need for centralized coordination by servers.

The initial use of P2P networks in business followed the deployment in the early 1980s of free-standing PCs. In contrast to the minimainframes of the day, such as the VS system from Wang Laboratories Inc., which served up word processing and other applications to dumb terminals from a central computer and stored files on a central hard drive, the then-new PCs had self-contained hard drives and built-in CPUs. The smart boxes also had onboard applications, which meant they could be deployed to desktops and be useful without an umbilical cord linking them to a mainframe.



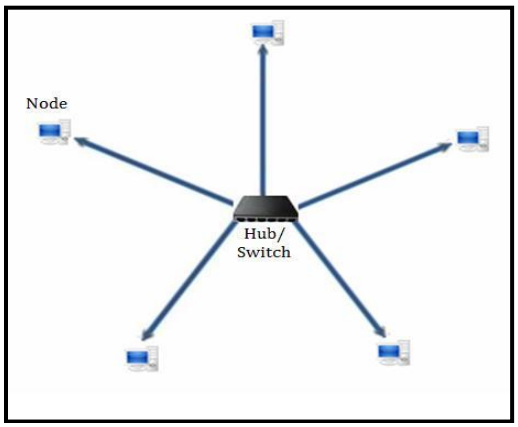
peer-to-peer (P2P) network

Star Topology: Advantages and Disadvantages

What is Star topology?

In Star topology, all the components of network are connected to the central device called "hub" which may be a hub, a router or a switch. Unlike *Bus topology* (discussed earlier), where nodes were connected to central cable, here all the workstations are connected to central device with a point-to-point connection. So it can be said that every computer is indirectly connected to every other node by the help of "hub".

All the data on the star topology passes through the central device before reaching the intended destination. Hub acts as a junction to connect different nodes present in Star Network, and at the same time it manages and controls whole of the network. Depending on which central device is used, "hub" can act as repeater or signal booster. Central device can also communicate with other hubs of different network. Unshielded Twisted Pair (UTP) Ethernet cable is used to connect workstations to central node.



Star Topology Diagram

Advantages of Star Topology

1) As compared to Bus topology it gives far much better performance, signals don't necessarily get transmitted to all the workstations. A sent signal reaches the intended destination after passing through no more than 3-4 devices and 2-3 links. Performance of the network is dependent on the capacity of central hub.

2) Easy to connect new nodes or devices. In star topology new nodes can be added easily without affecting rest of the network. Similarly components can also be removed easily.

3) Centralized management. It helps in monitoring the network.

4) Failure of one node or link doesn't affect the rest of network. At the same time its easy to detect the failure and troubleshoot it.

Disadvantages of Star Topology

1) Too much dependency on central device has its own drawbacks. If it fails whole network goes down.

2) The use of hub, a router or a switch as central device increases the overall cost of the network.

3) Performance and as well number of nodes which can be added in such topology is depended on capacity of central device.

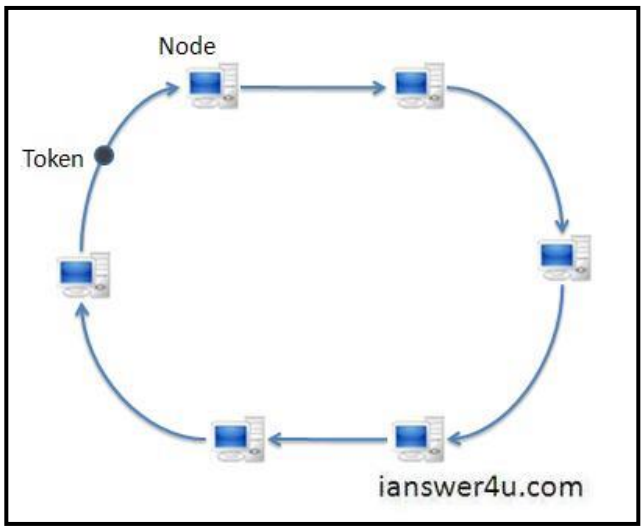
Ring Topology : Advantages and Disadvantages

What is Ring Topology?

In Ring Topology, all the nodes are connected to each-other in such a way that they make a closed loop. Each workstation is connected to two other components on either side, and it communicates with these two adjacent neighbors. Data travels around the network, in one direction. Sending and receiving of data takes place by the help of TOKEN.

Token Passing (in brief): Token contains a piece of information which along with data is sent by the source computer. This token then passes to next node, which checks if the signal is intended to it. If yes, it receives it and passes the empty to into the network, otherwise passes token along with the data to next node. This process continues until the signal reaches its intended destination.

The nodes with token are the ones only allowed to send data. Other nodes have to wait for an empty token to reach them. This network is usually found in offices, schools and small buildings.



Ring Topology & token

Advantages of Ring Topology

1) This type of network topology is very organized. Each node gets to send the data when it receives an empty token. This helps to reduces chances of collision. Also in ring topology all the traffic flows in only one direction at very high speed.

2) Even when the load on the network increases, its performance is better than that of Bus topology.

3) There is no need for network server to control the connectivity between workstations.

4) Additional components do not affect the performance of network.

5) Each computer has equal access to resources.

Disadvantages of Ring Topology

1) Each packet of data must pass through all the computers between source and destination. This makes it slower than Star topology.

2) If one workstation or port goes down, the entire network gets affected.

3) Network is highly dependent on the wire which connects different components.

4) MAU's and network cards are expensive as compared to Ethernet cards and hubs.

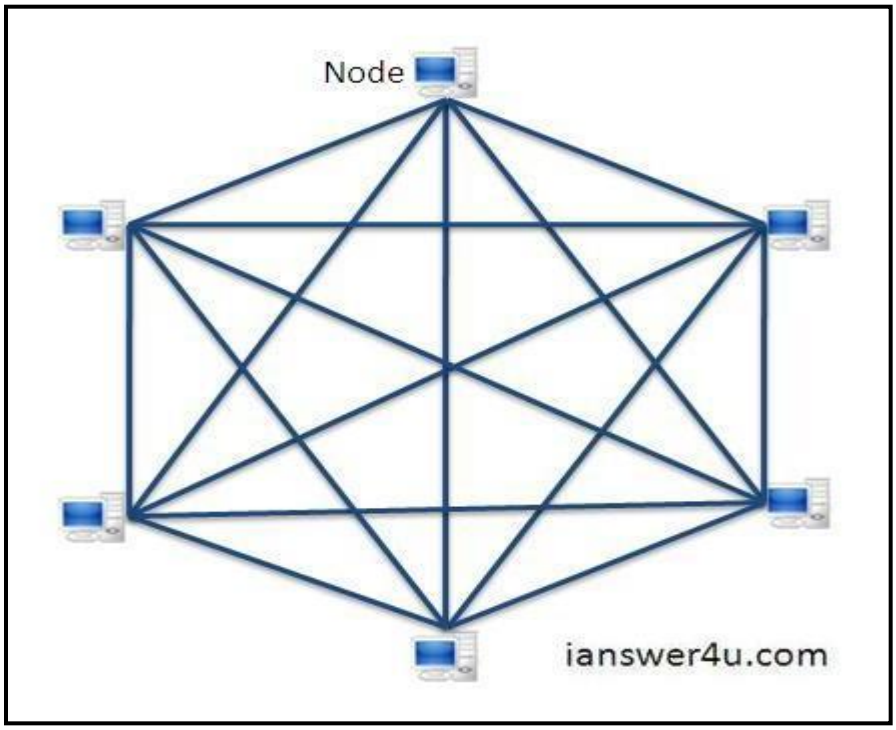
Mesh Topology: Advantages and Disadvantages

What is Mesh Topology?

In a mesh network topology, each of the network node, computer and other devices, are interconnected with one another. Every node not only sends its own signals but also relays data from other nodes. In fact a true mesh topology is the one where every node is connected to every other node in the network. This type of topology is very expensive as there are many redundant connections, thus it is not mostly used in computer networks. It is commonly used in wireless networks. Flooding or routing technique is used in mesh topology.

Types of Mesh Network topologies:-

1)Full Mesh Topology:-



Mesh Topology Diagram

In this, like a true mesh, each component is connected to every other component. Even after considering the redundancy factor and cost of this network, its main advantage is that the network traffic can be redirected to other nodes if one of the nodes goes down. Full mesh topology is used only for backbone networks.

2) Partial Mesh Topology:-

This is far more practical as compared to full mesh topology. Here, some of the systems are connected in similar fashion as in mesh topology while rests of the systems are only connected to 1 or 2 devices. It can be said that in partial mesh, the workstations are 'indirectly' connected to other devices. This one is less costly and also reduces redundancy.

Advantages of Mesh topology

1) Data can be transmitted from different devices simultaneously. This topology can withstand high traffic.
2) Even if one of the components fails there is always an alternative present. So data transfer doesn't get affected.
3) Expansion and modification in topology can be done without disrupting other nodes.

Disadvantages of Mesh topology

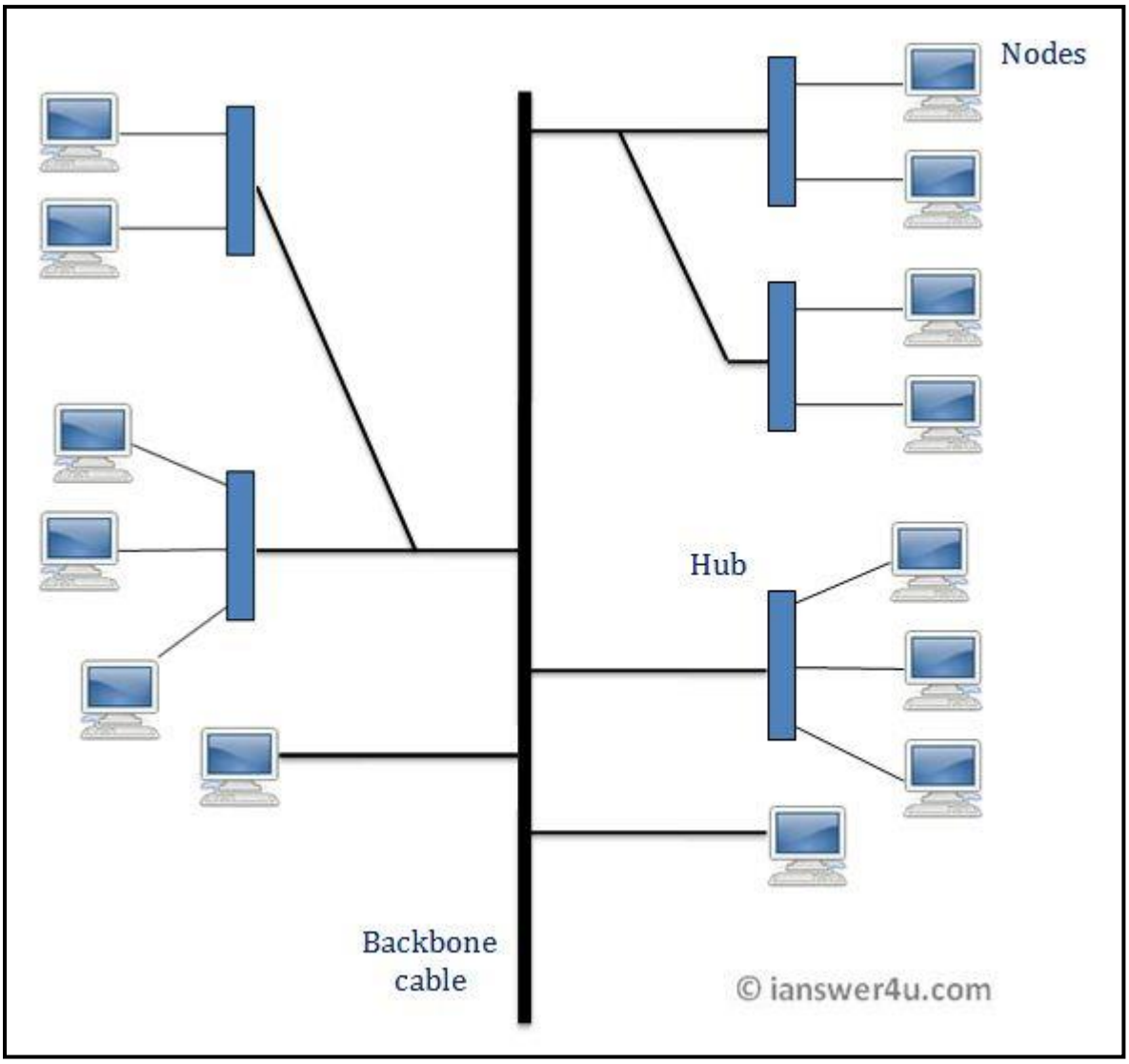
1) There are high chances of redundancy in many of the network connections.
2) Overall cost of this network is way too high as compared to other network topologies.
3) Set-up and maintenance of this topology is very difficult. Even administration of the network is tough.

Tree Topology: Advantages and Disadvantages

What is Tree Topology?

Tree Topology integrates the characteristics of Star and Bus Topology. Earlier we saw how in Physical Star network Topology, computers (nodes) are connected by each other through central hub. And we also saw in Bus Topology, work station devices are connected by the common cable called Bus. After understanding these two network configurations, we can understand tree topology better. In Tree Topology, the number of Star networks are connected using Bus. This main cable seems like a main stem of a tree, and other star networks as the branches. It is also called **Expanded Star Topology**. Ethernet protocol is commonly used in this type of topology.

The diagram below will make it clear.



Tree Topology

Let's discuss the advantages and disadvantages of Tree Topology now.

Advantages of Tree Topology

1. It is an extension of Star and bus Topologies, so in networks where these topologies can't be implemented individually for reasons related to scalability, tree topology is the best alternative.

2. Expansion of Network is possible and easy.

3. Here, we divide the whole network into segments (star networks), which can be easily managed and maintained.

4. Error detection and correction is easy.

5. Each segment is provided with dedicated point-to-point wiring to the central hub.
6. If one segment is damaged, other segments are not affected.

Disadvantages of Tree Topology

1. Because of its basic structure, tree topology, relies heavily on the main bus cable, if it breaks whole network is crippled.
2. As more and more nodes and segments are added, the maintenance becomes difficult.
3. Scalability of the network depends on the type of cable used.

Hybrid Topology : Advantages and Disadvantages of Hybrid Topology

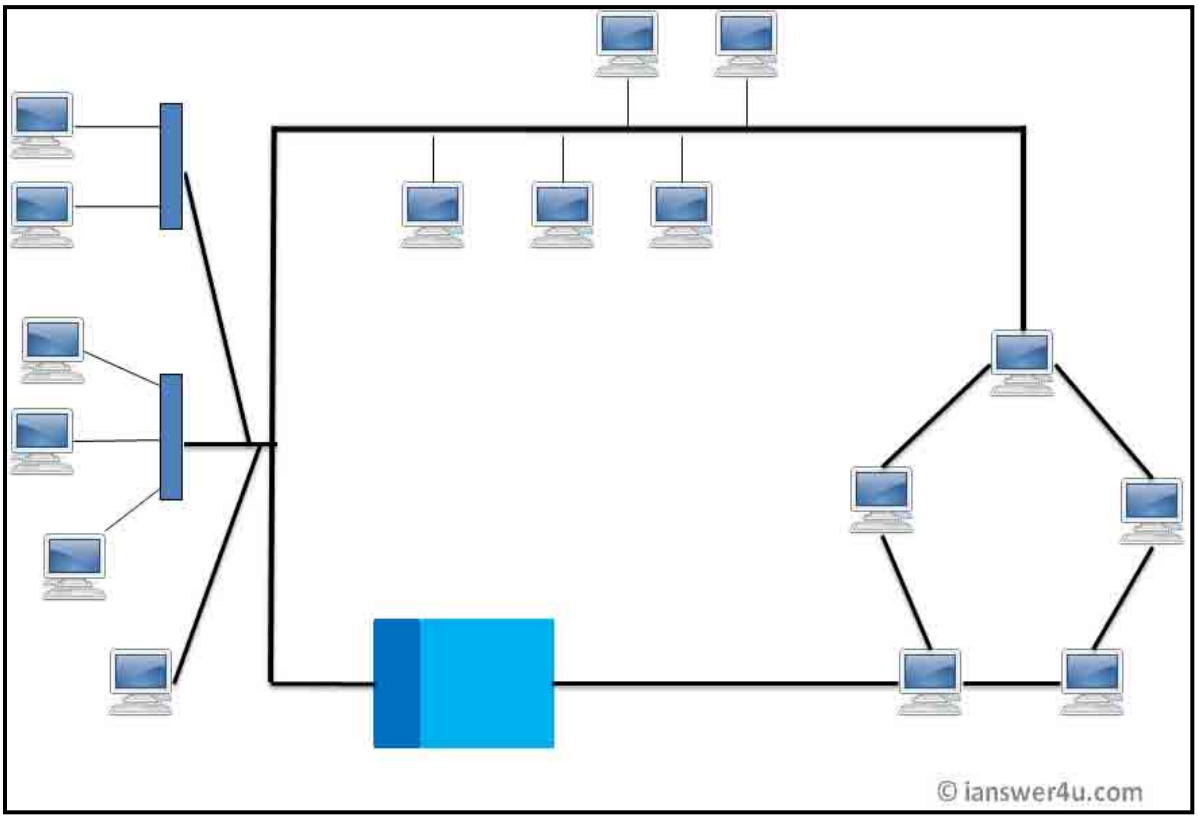
What is Hybrid Topology ?

Before starting about Hybrid topology, we saw that a network topology is a connection of various links and nodes, communicating with each other for transfer of data. We also saw various advantages and disadvantages of Star, Bus, Ring, Mesh and Tree topologies.

Now let's discuss what Hybrid Network topology is and why it finds its application in Wide Area Networks. Hybrid, as the name suggests, is mixture of two different things. Similarly in this type of topology we integrate two or more different topologies to form a resultant topology which has good points (as well as weaknesses) of all the constituent basic topologies rather than having characteristics of one specific topology. This combination of topologies is done according to the requirements of the organization.

For example, if there exists a ring topology in one office department while a bus topology in another department, connecting these two will result in Hybrid topology. Remember connecting two similar topologies cannot be termed as Hybrid topology. Star-Ring and Star-Bus networks are most common examples of hybrid network.

Let's see the benefits and drawbacks of this networking architecture



Hybrid Network Topology Image

Advantages of Hybrid Network Topology

1) **Reliable :** Unlike other networks, fault detection and troubleshooting is easy in this type of topology. The part in which fault is detected can be isolated from the rest of network and required corrective measures can be taken, WITHOUT affecting the functioning of rest of the network.

2) **Scalable:** Its easy to increase the size of network by adding new components, without disturbing existing architecture.

3) **Flexible:** Hybrid Network can be designed according to the requirements of the organization and by optimizing the available resources. Special care can be given to nodes where traffic is high as well as where chances of fault are high.

4) **Effective:** Hybrid topology is the combination of two or more topologies, so we can design it in such a way that strengths of constituent topologies are maximized while there weaknesses are neutralized. For example we saw Ring Topology has good data reliability (achieved by use of tokens) and Star topology has high tolerance capability (as each node is not directly connected to

other but through central device), so these two can be used effectively in hybrid star-ring topology.

Disadvantages of Hybrid Topology

1) **Complexity of Design:** One of the biggest drawback of hybrid topology is its design. Its not easy to design this type of architecture and its a tough job for designers. Configuration and installation process needs to be very efficient.
2) **Costly Hub:** The hubs used to connect two distinct networks, are very expensive. These hubs are different from usual hubs as they need to be intelligent enough to work with different architectures and should be function even if a part of network is down.
3) **Costly Infrastructure:** As hybrid architectures are usually larger in scale, they require a lot of cables, cooling systems, sophisticate network devices, etc.

Network Cabling and Other Hardware Options

All computing relies on physical components and operations at a fundamental level, and networking is no exception. As with other aspects of computer networking, there are a bewildering variety of network hardware devices available and a lot of terms and concepts to keep track of. You can ignore most of these until you're ready to plan your network design and equipment purchases, but a handful of definitions and distinctions are part of the assumed background knowledge in most networking conversations. Also, some basic knowledge is required in order to make smart, effective purchasing decisions.

The following are some issues you should consider when planning purchases of networking hardware.

Data cables (also known as transmission media) are responsible for carrying messages back and forth between computers and other devices and as such are the foundation of your network. All other network equipment has to be compatible with your choice of data cable, so this decision constrains or determines many of your other choices. While dozens of cable variants are standardized and available for purchase, these variants fall into four main categories:

1. coaxial cable

2. twisted pair cables
3. optical fiber
4. wireless

Of these four, twisted pair cables or wireless transmission are the basis of most LANs. Coaxial cables and fiber optic cables can operate at higher speeds, but they're more expensive and harder to install, so they're used primarily by well-resourced organizations that need the high-speed, high-bandwidth networks.

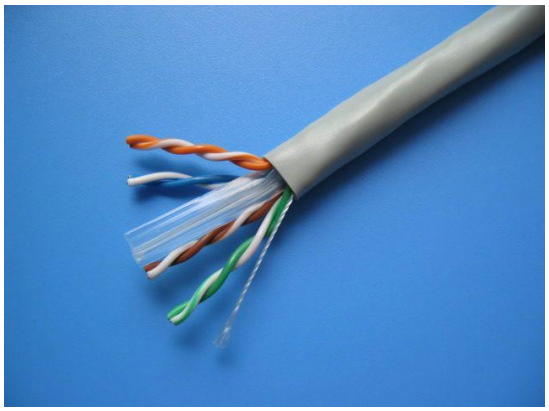
The standards for transmission media are set by engineering organizations such as the IEEE and change on a regular basis, but currently the most common types of twisted pair cabling (in order from slower to faster) are Cat 5, Cat 5e, and Cat 6. The latest, fastest wireless standard as of late 2010 is 802.11n.

Networking Process: Network Cable Creeping Tools

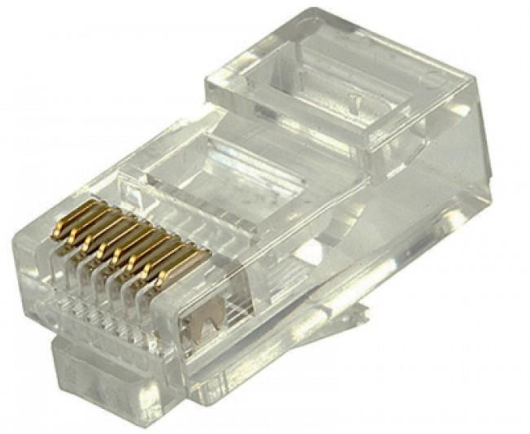
Requirements;

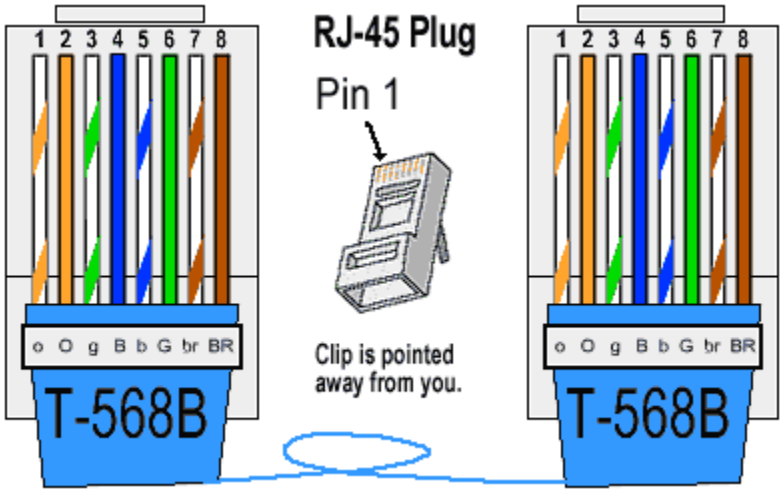
1. **Creeping Tool & its components**

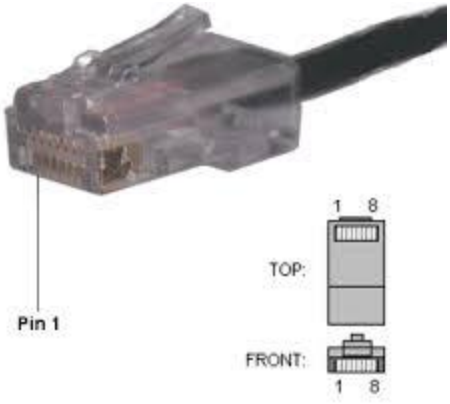
2. **Network cables**



RJ 45 Plug







Network cables conduits

Network Switch or Router

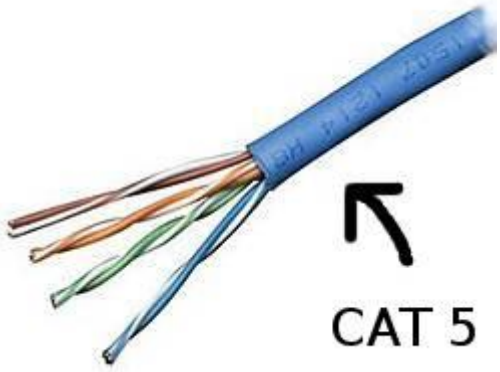
Network Switch

Router

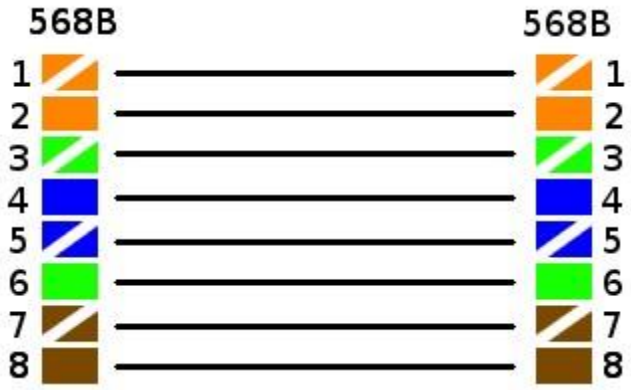
Straight-thru, Crossover, and Rollover Cables

What is the difference between a straight-thru, crossover, and rollover cable and why do they all look the same?

There are several IEEE 802.3 standards that define Ethernet transfer over Category 5 (or higher) UTP cabling. The most common of these are 802.3 10Base-T, 802.3u 100Base-TX (Fast Ethernet), and 802.3ab 1000Base-T (Gigabit Ethernet). Although not defined by the IEEE, these standards are accompanied by the EIA/TIA-568-A and EIA/TIA-568-B specifications to standardize an ordered color code for termination which is practiced by the majority of the telecommunications industry.

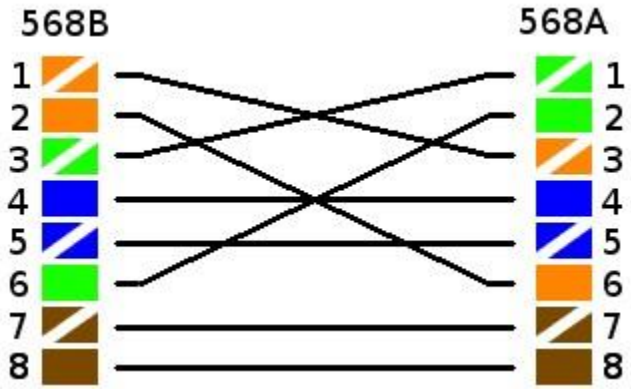


Straight-thru cables have identical terminations on each end. This is the typical method of termination and unless otherwise specified, it is usually safe to assume that the cable is straight-thru. These cables are usually called patch cables. You will never hear someone say "Hey, toss me that straight-thu cable!" Patch cables connect PCs and other network devices to the telecommunications outlet in the work area (your office or cubicle) and are used in the telecommunications closets to connect or "patch" devices through to the switches. In smaller network environments where a handful of PCs are in close proximity to each other, patch cables will be used to join the PCs to a small workgroup switch.



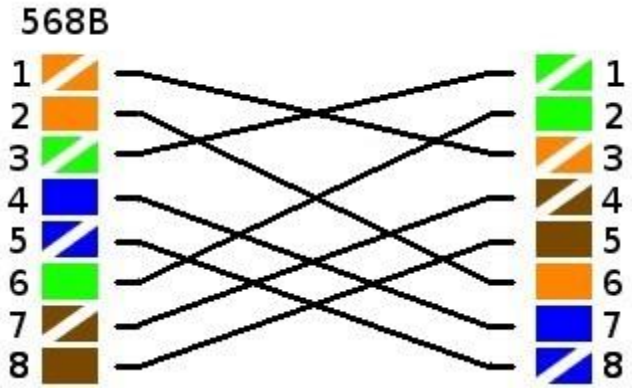
The above example of a straight-thru pinout is using the 568B standard but we could have just as easily used the 568A standard on both ends. Actually most of the industry uses 568B although I have been told the military uses 568A. It doesn't matter as long as both ends have the same pinout. You could even make your own color order if you choose but this is certainly not recommended.

Crossover cables were more prevalent years ago and were used to connect 'like devices' such as a hub to a hub or a switch to a switch. Most networking equipment nowadays support automatic medium-dependent interface crossover (Auto-MDIX) which is a technology intelligent enough to determine the cable type used and cross or uncross the signals internally as needed. A crossover cable is made by terminating one end using the 568A standard and terminating the other end using the 568B standard as shown below.



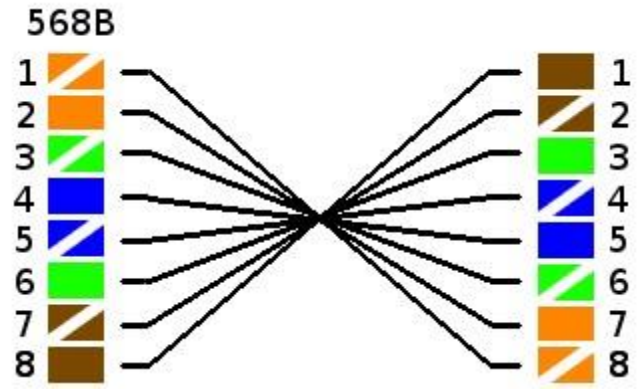
A crossover cable is still used to directly connect two PCs together (without using a hub or a switch in between). This will make for a rather lame LAN party. The crossing of the wires allows one station's transmit to be the other station's receive and vice versa. While 10Base-T and 100Base-TX (10 and 100Mbps Ethernet) only use 2 of the 4 pairs of wires, 1000Base-T

utilizes all 4 pairs to allow for 1000Mpbs transfer rates. Therefore, if you need to connect two PCs directly using 1000Base-T NICs, you may need a special crossover cable where all pairs are crossed as shown below.



Many 1000Base-T NICs also support Auto-MDIX so a straight-thru should work too. The gigabit crossover cable will also work with 10Base-T and 100Base-TX implementations since the blue and brown wire pairs are not even used.

Now for the rollover cable. Many people mistakenly use the terms crossover cable and rollover cable interchangeably. Still, many more have never even heard of a rollover cable. The truth is that rollover cables aren't even used in conjunction with Ethernet communication. Rollover cables are often used with a form of serial communication to program routers and switches via a console port.



The cable gets its name because the pinout is literally 'rolled over' on one end as shown above. Although factory made cables may use a different color scheme, the point is that pin 1 is mapped with pin 8, pin 2 with pin 7, and so on. Rollover cables may also be referred to as

console cables or Yost cables. Rollover cables are often used with a DB9-RJ45 adapter (shown below) to connect to a PC's serial port. When purchasing a Cisco device such as a router or switch, Cisco provides a special console cable with a DB9 on one end and a RJ-45 on the other. I have a big bag full of these that I haven't had much luck selling in garage sales. Remember that even though the cable may use RJ-45 connectors it is still designed for serial transmission. Attempting to program a Cisco router by connecting the cable to your computer's NIC will get you nowhere fast. Likewise, this type of cable will not connect your PC to an Ethernet network.

Hopefully this clears up any misunderstanding between straight-thru, crossover, and rollover cables. Thanks for reading!

Equipment Types and Definitions

Networking equipment has a set of functions similar to those of the United States Post Service. Receiving thousands or millions of messages each day, both have to send the message to the correct destination or at least forward it to another messenger who's closer to the recipient. For these systems to work properly, every entity expecting to send or receive messages must have a unique address. The most commonly-used, essential pieces of networking equipment keep track of nearby addresses and send electronic messages (also known as data packets) closer to their destinations.

The role of the local mailman in computer networks is usually played by a device called a **switch** (also known as a network switch or an Ethernet switch) which distributes messages among the computers and other devices on a single LAN segment. For a longer definition of a switch and a description of how they work, read How LAN Switches Work on Cisco's site.

If you're sending a message beyond your neighborhood, there are too many addresses in the world for a single switch to keep track of. **Routers** are comparable to the post office's regional distribution centers. Any message with a non-local address goes to the router which is responsible for forwarding it to another router closer to the final destination. For a longer description of router functionality and mechanics, see Cisco's Routing Basics article. In addition to the switches mentioned above, Cisco is the leading manufacturer of switches and other networking equipment, and they donate several of their switches to eligible 501(c)(3) nonprofits through TechSoup.

Furthermore, just as every entity partaking of the post office's service needs a mailbox or P.O. box, every new computer has a **network card** (also known as a NIC) that sends and receives messages on behalf of the operating system and applications using that machine. The size, shape, and engineering specifications of network cards vary depending on the type of network involved. For example, an Ethernet NIC will have a port on the back that accepts a standard RJ45 connector, and a wireless NIC will have an antenna on it for sending and receiving radio waves. Regardless of type, manufacturers burn a unique number known as a MAC address into each network card.

Knowing Your Address

Finally, just as the postal system uses two numerical addressing schemes (street addresses and zip codes) for identifying recipients and routing efficiently, networks and networking equipment rely on two sets of addresses to route messages quickly and efficiently. A detailed understanding of these addressing protocols is something usually delegated to IT staff or consultants, but a few of them are so important to the maintenance of a functioning network that it's good to know where to look for help in case your experts are unavailable.

Computer networks support applications such as access to the **World Wide Web**(www), shared use of application and storage servers, printers, and fax machines, and use of email and instant messaging applications. Computer networks differ in the physical media used to transmit their signals, the communications protocols to organize network traffic, the network's size, topology and organizational intent.

IP ADDRESS

IP addresses are the fundamental method for computers to identify themselves on most computer networks. Every computer (or other network device) connected to the Internet has an IP address. This tutorial explains the basics of finding, changing, and hiding (your) my IP addresses.

Inside IP Addresses

IP addresses are written in a notation using numbers separated by dots. This is called *dotted-decimal notation*. Examples of IP addresses in dotted-decimal notation are 10.0.0.1 and 192.168.0.1 although many millions of different IP addresses exist.

- How IP Addresses Work

Finding IP Addresses

Everyone who needs to use a computer network should understand how to look up their own IP addresses. The exact procedure to follow depends on the kind of computer you use. Additionally, in some situations you may need to find the IP address of someone else's computer.

- How to Find IP Addresses

Fixing IP Address Problems

When a computer network is functioning properly, IP addresses stay in the background and don't require any specific attention. However, some common problems you may encounter when setting up or joining a computer network include:

- A computer has no IP address
- Two computers have the same IP address
- A computer has a "bad" IP address that won't allow it to "talk" on the network

To solve these problems, several techniques can be applied including IP address release / renew, setting static IP addresses, and updating the subnet configuration.

Hiding IP Addresses

Your public IP addresses are shared with others over the Internet, and this raises privacy concerns in the minds of some people. IP addresses allow your Internet usage to be tracked and give some rough information about your geographic location.

While there is no simple solution to this problem, some techniques do help hide your IP address and increase your Internet privacy.

SETTING IP ADDRESS

How to Assign a Static IP Address in Windows 7, 8, XP, or Vista

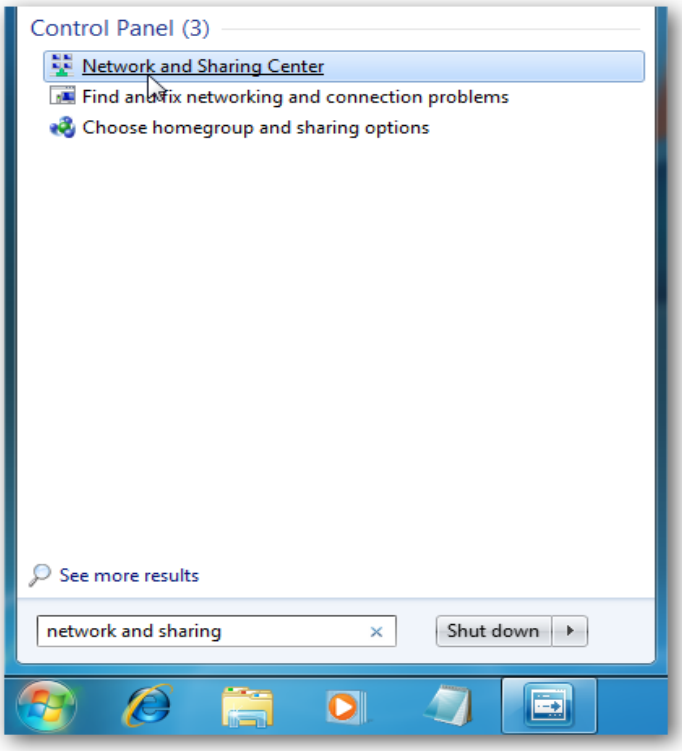
When organizing your home network it's easier to assign each computer it's own IP address than using DHCP. Here we will take a look at doing it in XP, Vista, Windows 7, Windows 8 and Windows 8.1.

If you have a home network with several computes and devices, it's a good idea to assign each of them a specific address. If you use DHCP *(Dynamic Host Configuration Protocol),* each computer will request and be assigned an address every time it's booted up. When you have to do troubleshooting on your network, it's annoying going to each machine to figure out what IP they have.

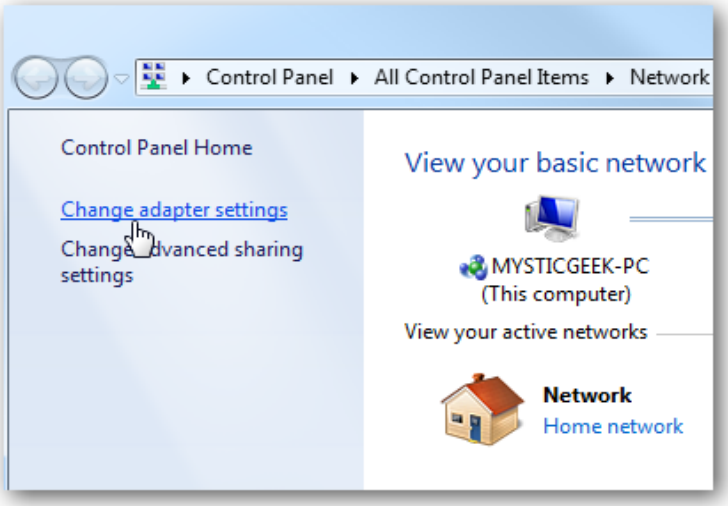
Using Static IPs prevents address conflicts between devices and allows you to manage them more easily. Assigning IPs to Windows is essentially the same process, but getting to where you need to be varies between each version.

Windows 7 or Windows 8.x

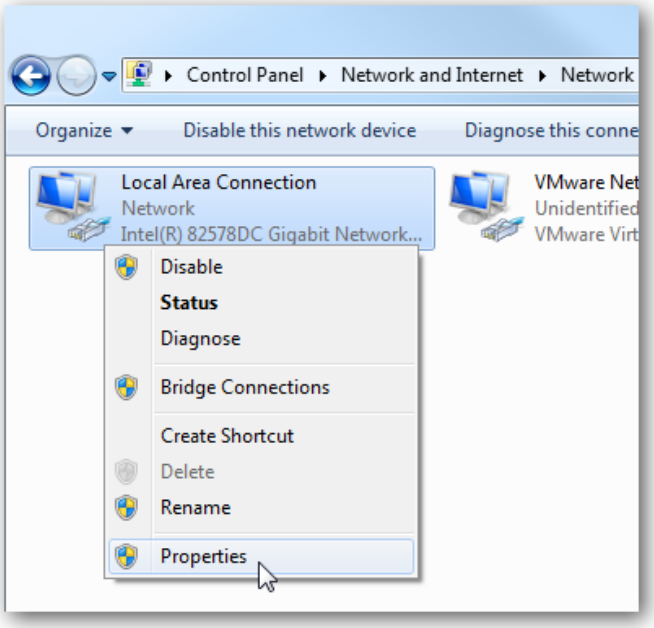
To change the computer's IP address in Windows 7, type *network and sharing* into the Search box in the Start Menu and select Network and Sharing Center when it comes up. If you are in Windows 8.x it will be on the Start Screen itself, like the screenshot illustrated below.



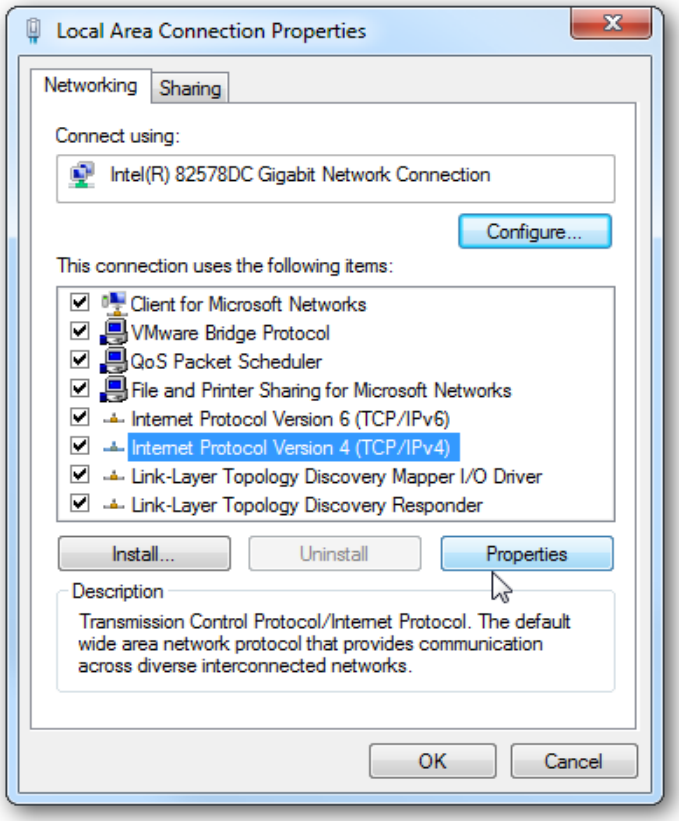
Then when the Network and Sharing Center opens, click on *Change adapter settings*. This will be the same on Windows 7 or 8.x.



Right-click on your local adapter and select Properties.

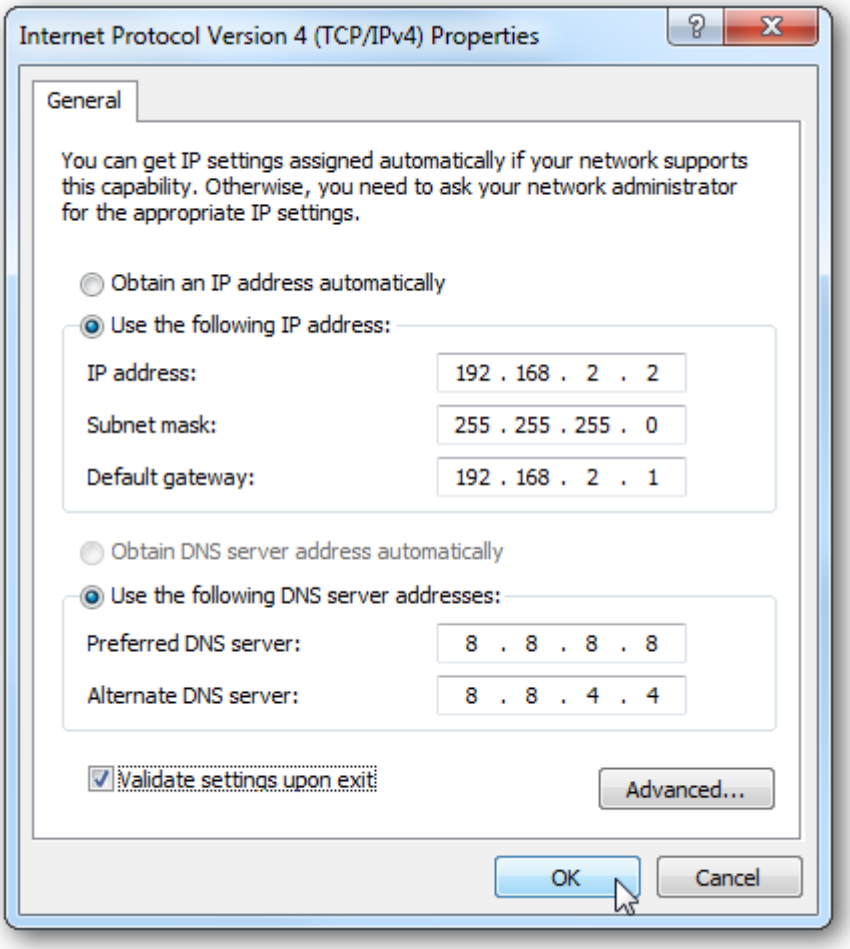


In the Local Area Connection Properties window highlight *Internet Protocol Version 4 (TCP/IPv4)* then click the Properties button.

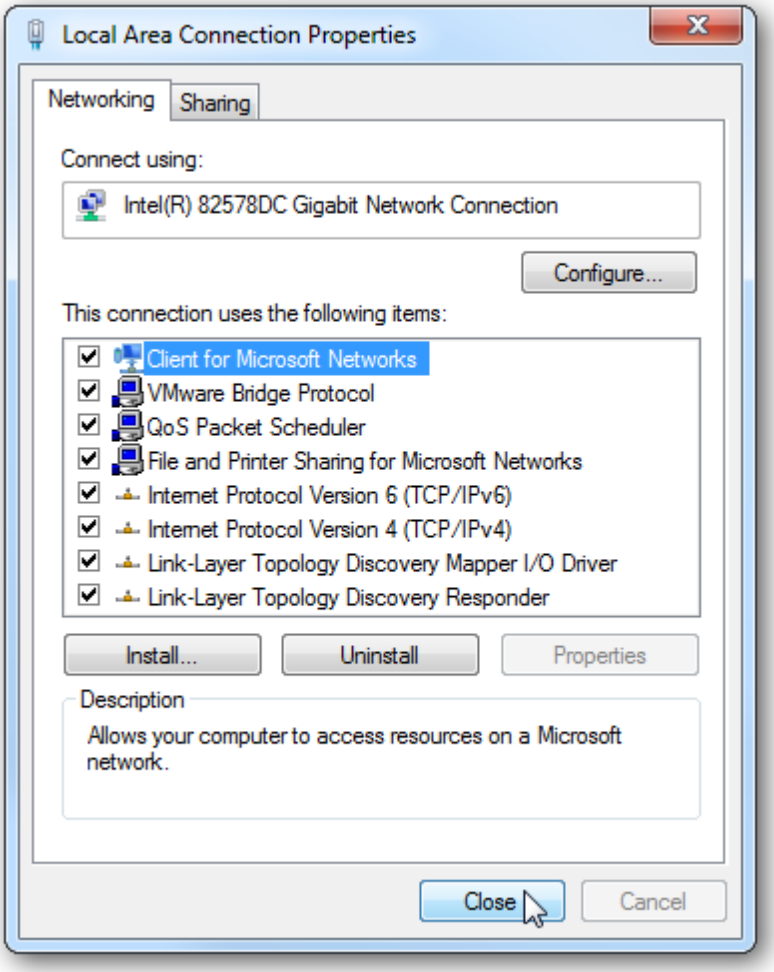


Now select the radio button *Use the following IP address* and enter in the correct IP, Subnet mask, and Default gateway that corresponds with your network setup. Then enter your Preferred and Alternate DNS server addresses. Here we're on a home network and using a simple Class C network configuration and Google DNS.

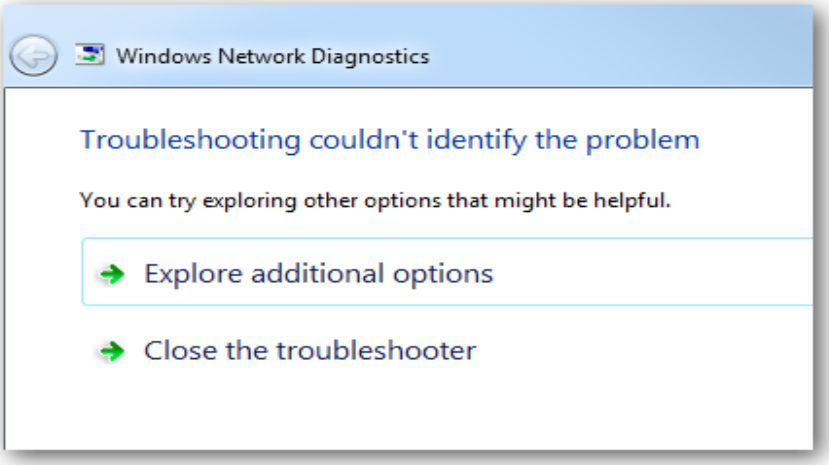
Check *Validate settings upon exit* so Windows can find any problems with the addresses you entered. When you're finished click OK.



Now close out of the Local Area Connections Properties window.



Windows 7 will run network diagnostics and verify the connection is good. Here we had no problems with it, but if you did, you could run the network troubleshooting wizard.

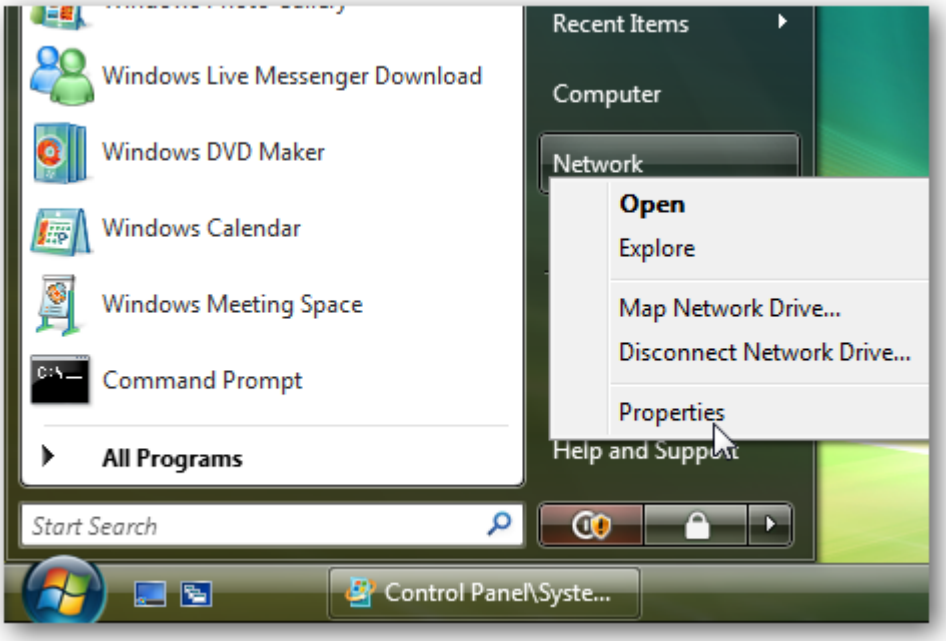


Now you can open the command prompt and do an *ipconfig* to see the network adapter settings have been successfully changed.

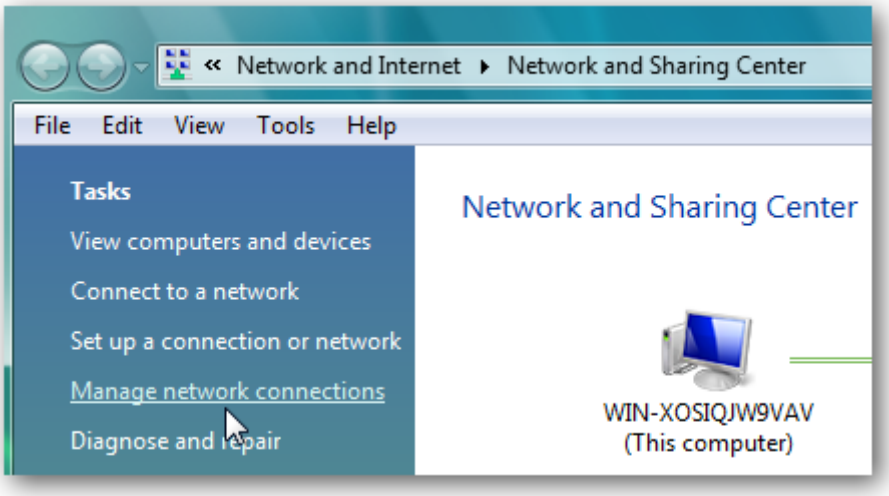
```
Windows IP Configuration

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::11e3:1d23:a
   IPv4 Address. . . . . . . . . . . : 192.168.2.2
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.2.1
```

Windows Vista

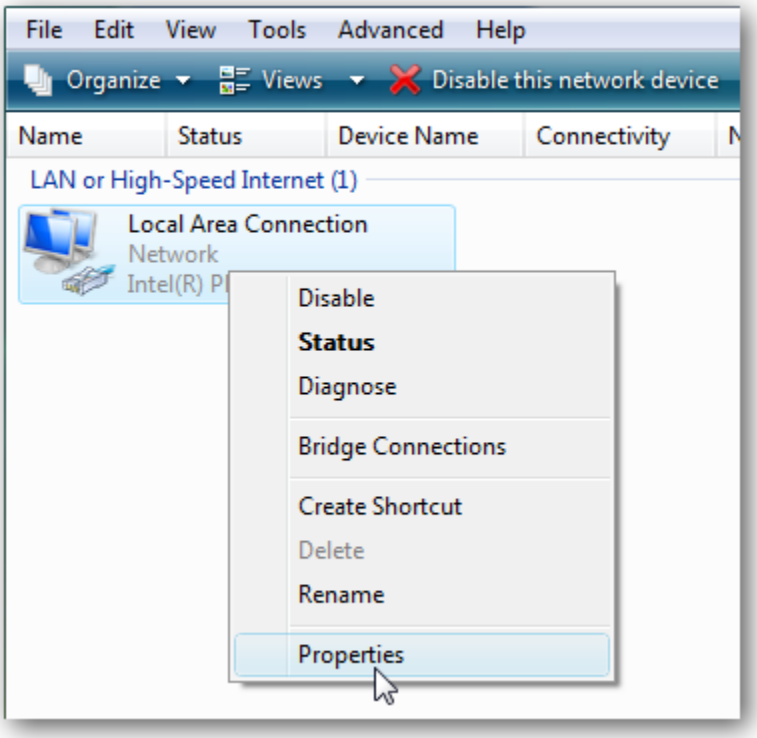
Changing your IP from DHCP to a Static address in Vista is similar to Windows 7, but getting to the correct location is a bit different. Open the Start Menu, right-click on Network, and select Properties.



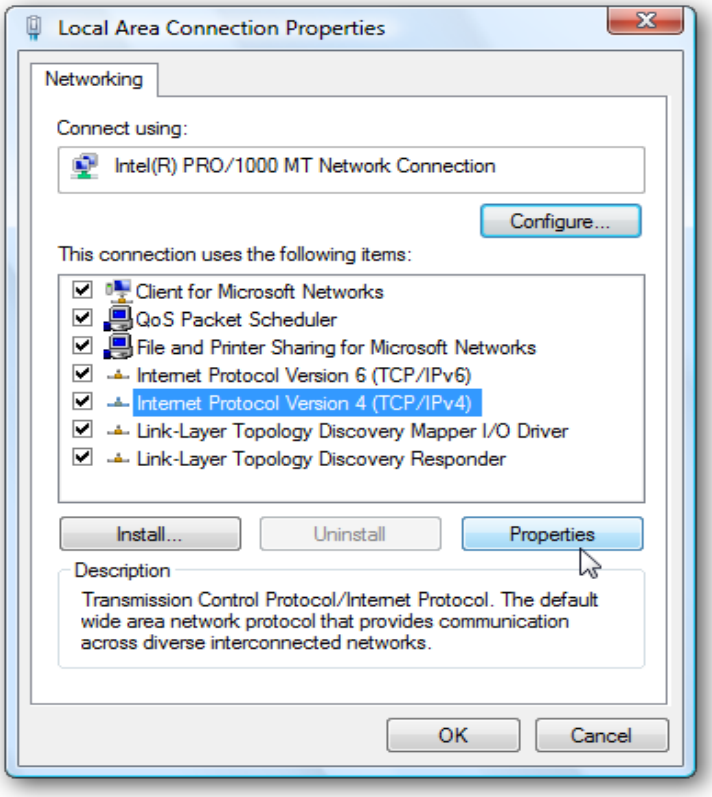
The Network and Sharing Center opens…click on *Manage network connections*.



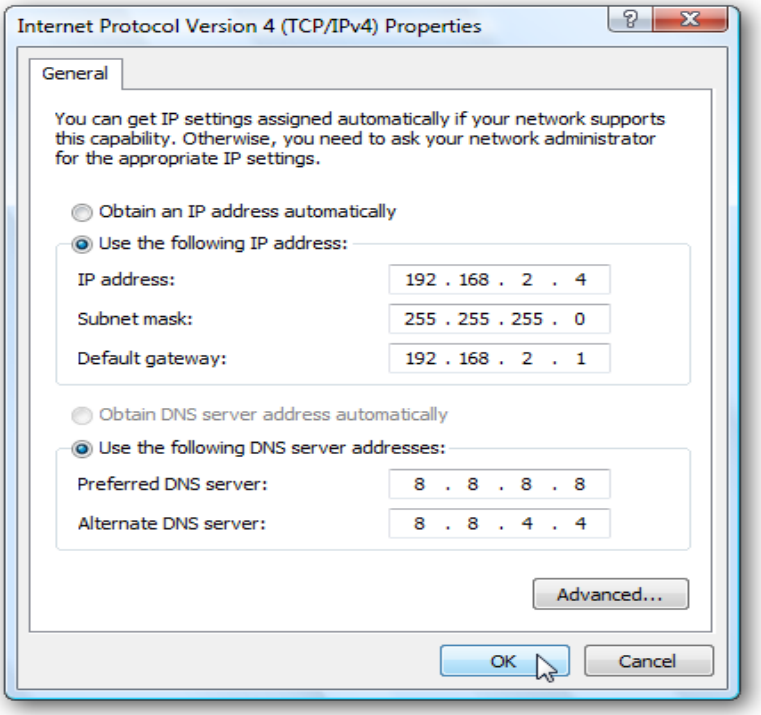
Right-click on the network adapter you want to assign an IP address and click Properties.



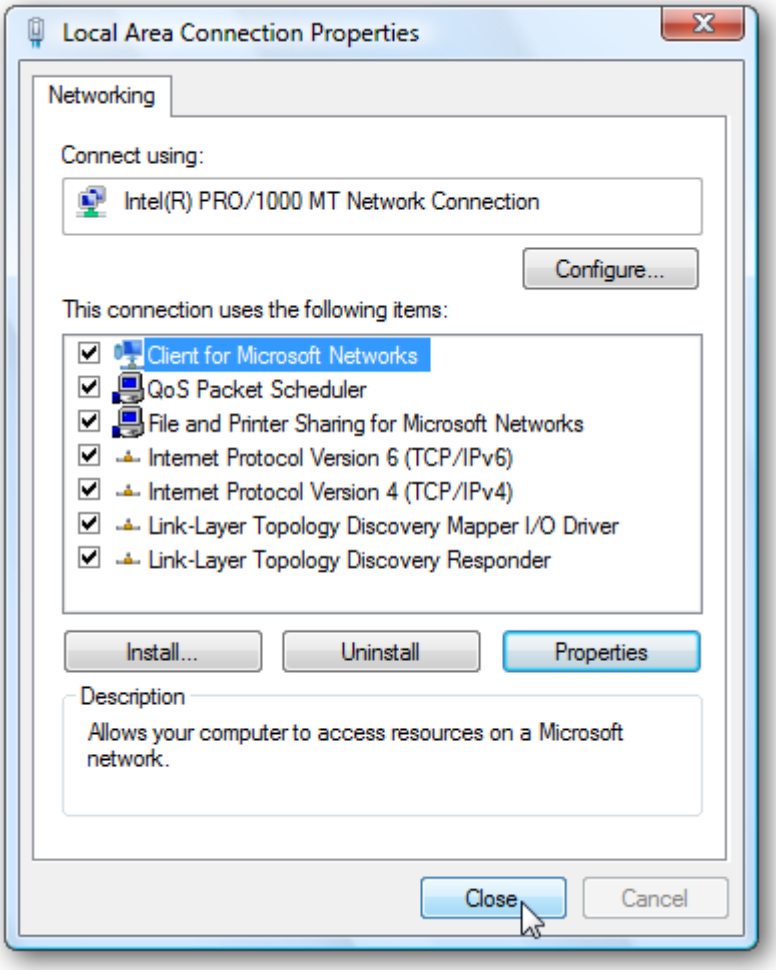
Highlight *Internet Protocol Version 4 (TCP/IPv4)* then click the Properties button.



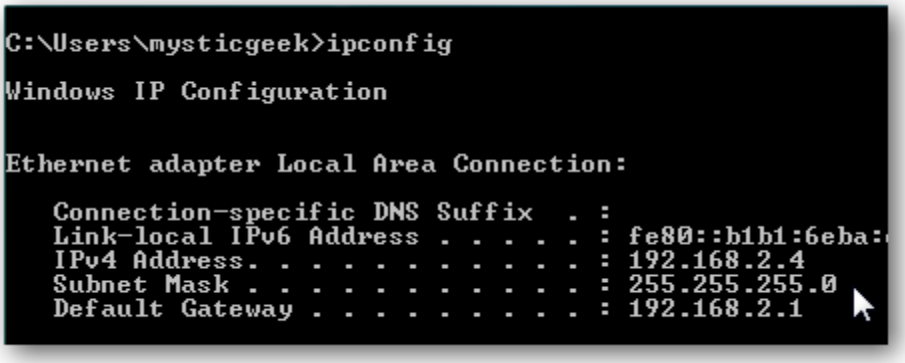
Now change the IP, Subnet mask, Default Gateway, and DNS Server Addresses. When you're finished click OK.



You'll need to close out of Local Area Connection Properties for the settings to go into effect.



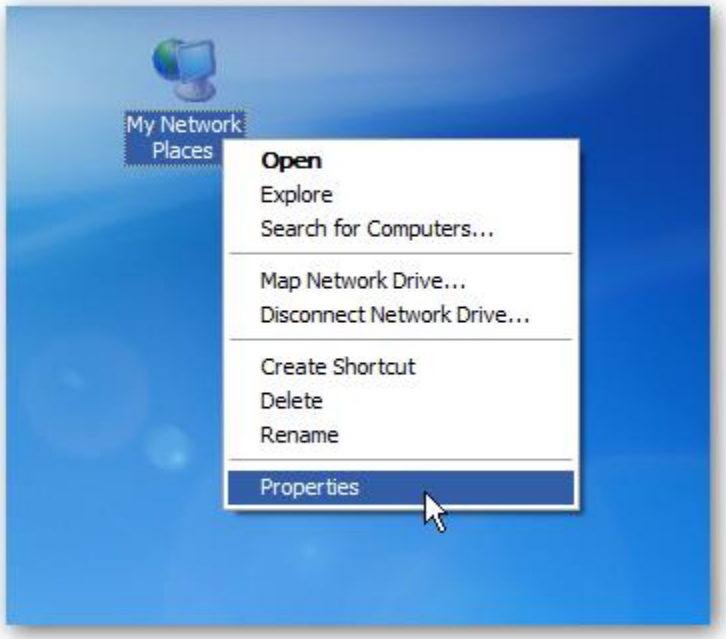
Open the Command Prompt and do an *ipconfig* to verify the changes were successful.



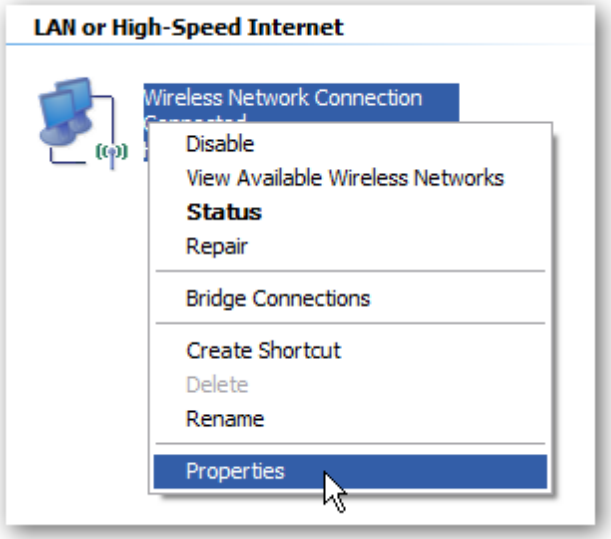
Windows XP

In this example we're using XP SP3 Media Center Edition and changing the IP address of the Wireless adapter.

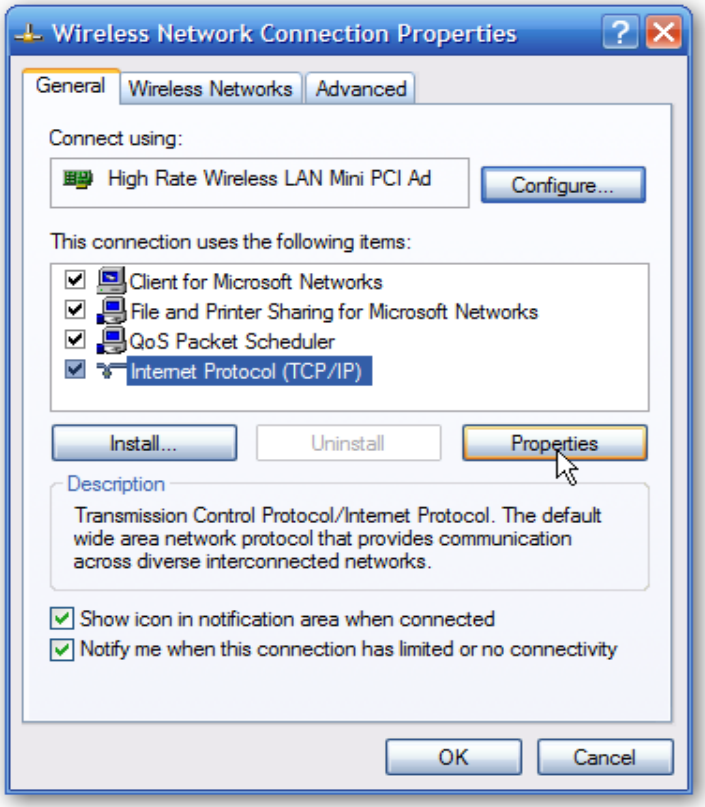
To set a Static IP in XP right-click on My Network Places and select Properties.



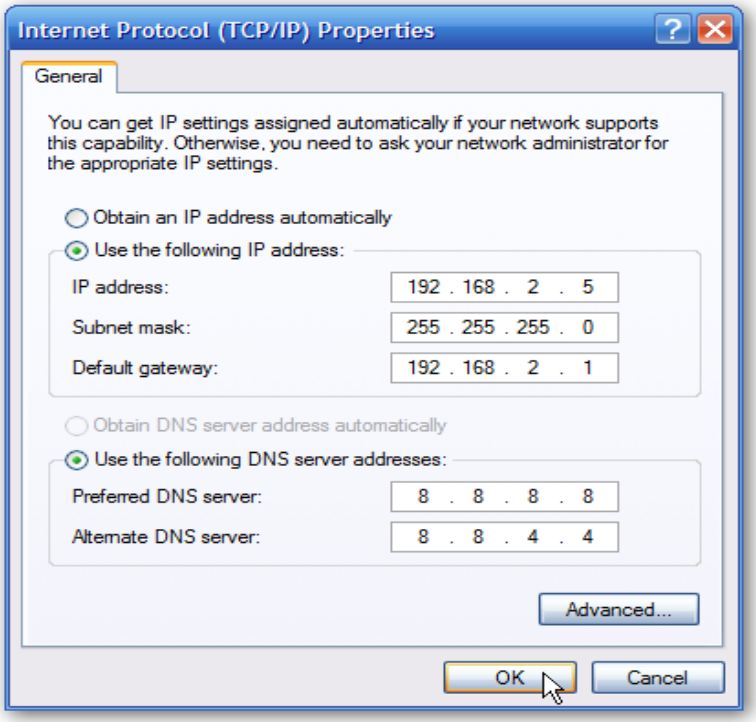
Right-click on the adapter you want to set the IP for and select Properties.



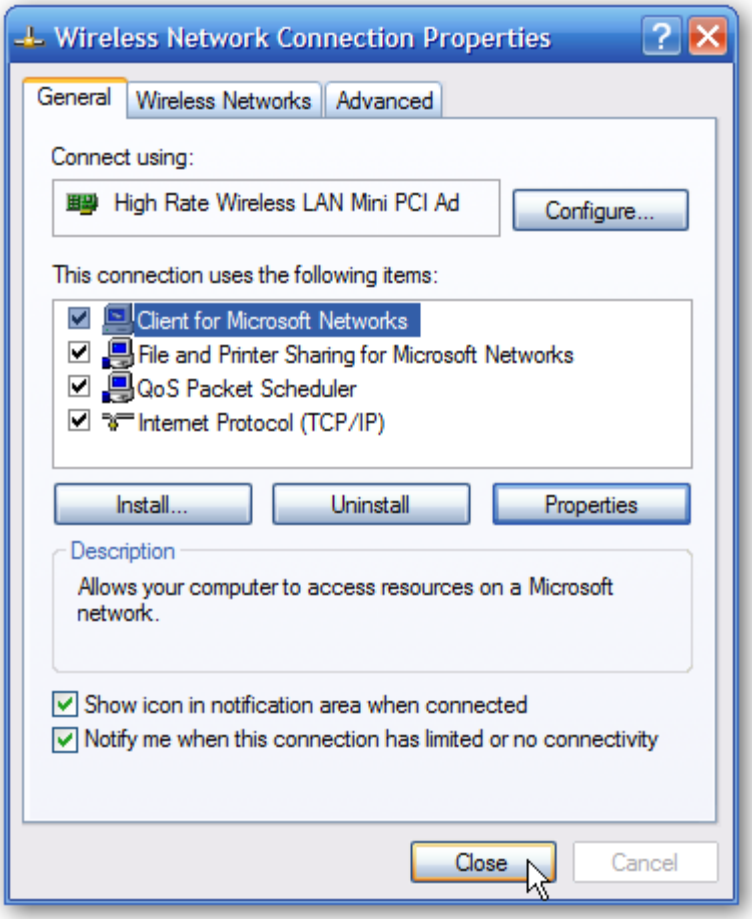
Highlight *Internet Protocol (TCP/IP)* and click the Properties button.



Now change the IP, Subnet mask, Default Gateway, and DNS Server Addresses. When you're finished click OK.



You will need to close out of the Network Connection Properties screen before the changes go into effect.



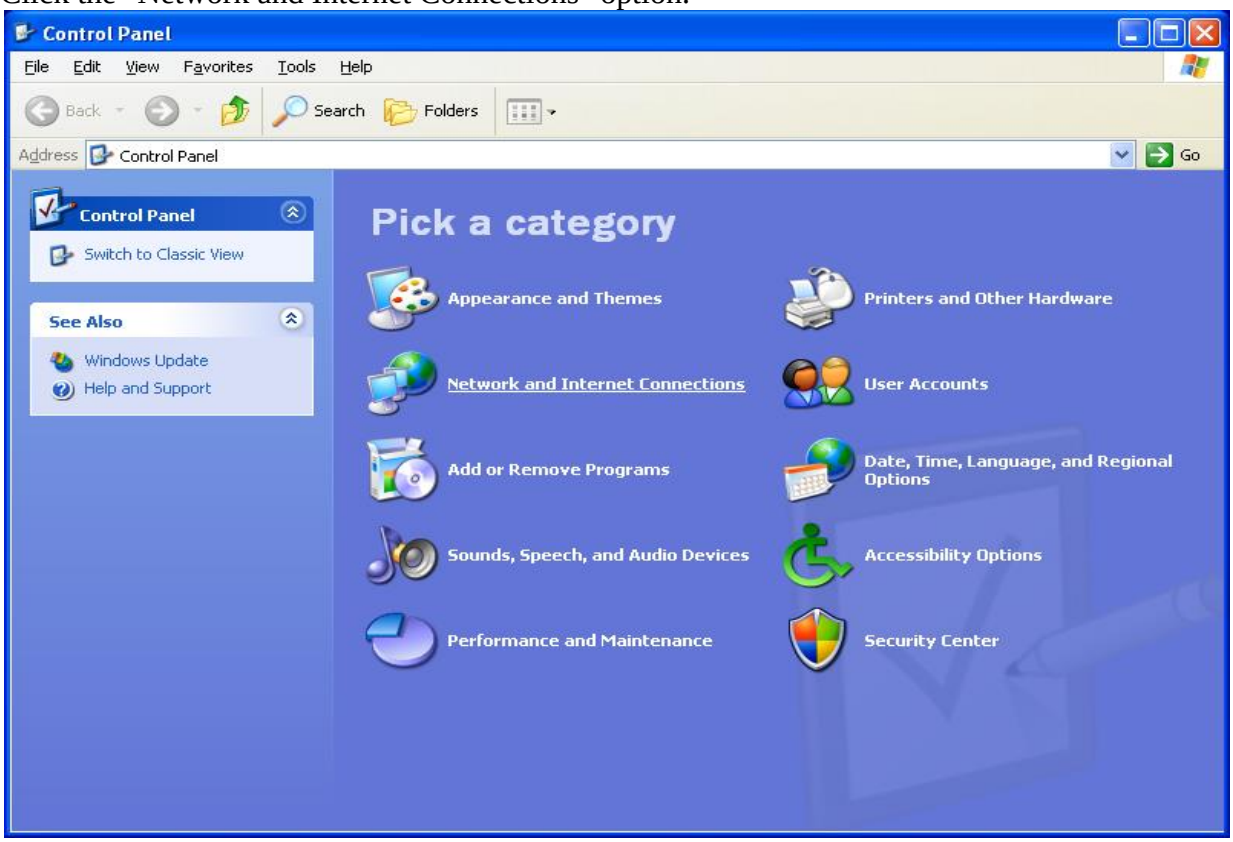
<u>Option 2</u>: For Windows XP

IP Address Settings - Windows XP

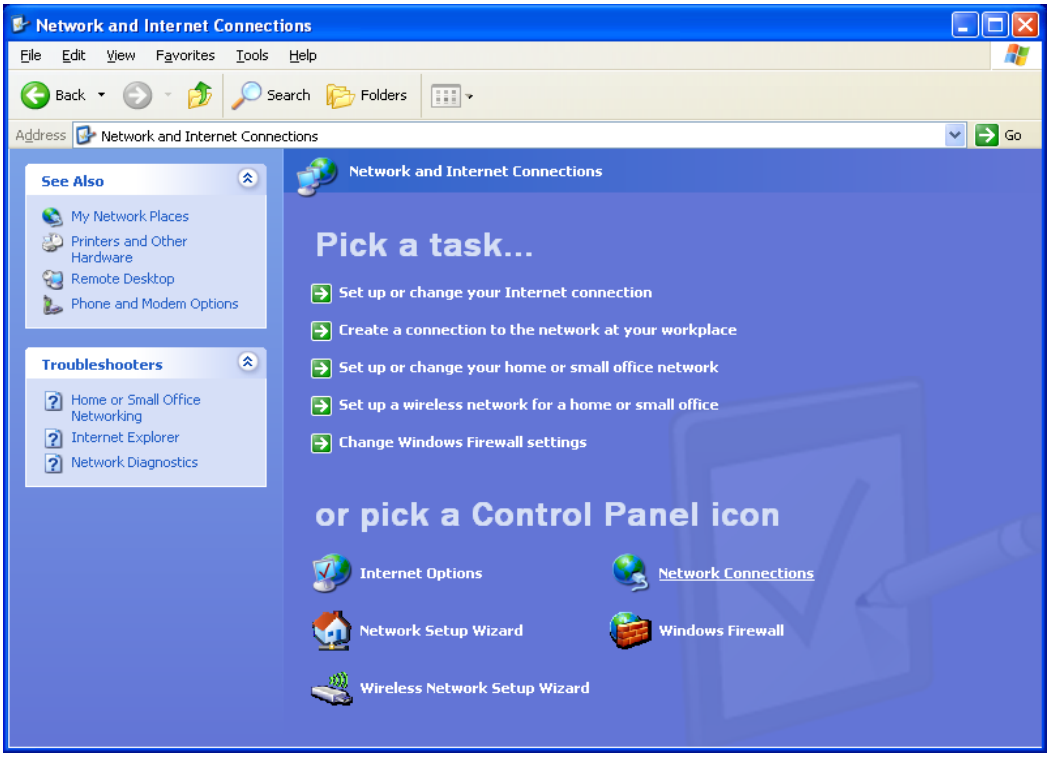
DHCP is the preferred method for setting up your computer to connect to the Trinity Hall network.

Click "Start" -> "Control Panel".

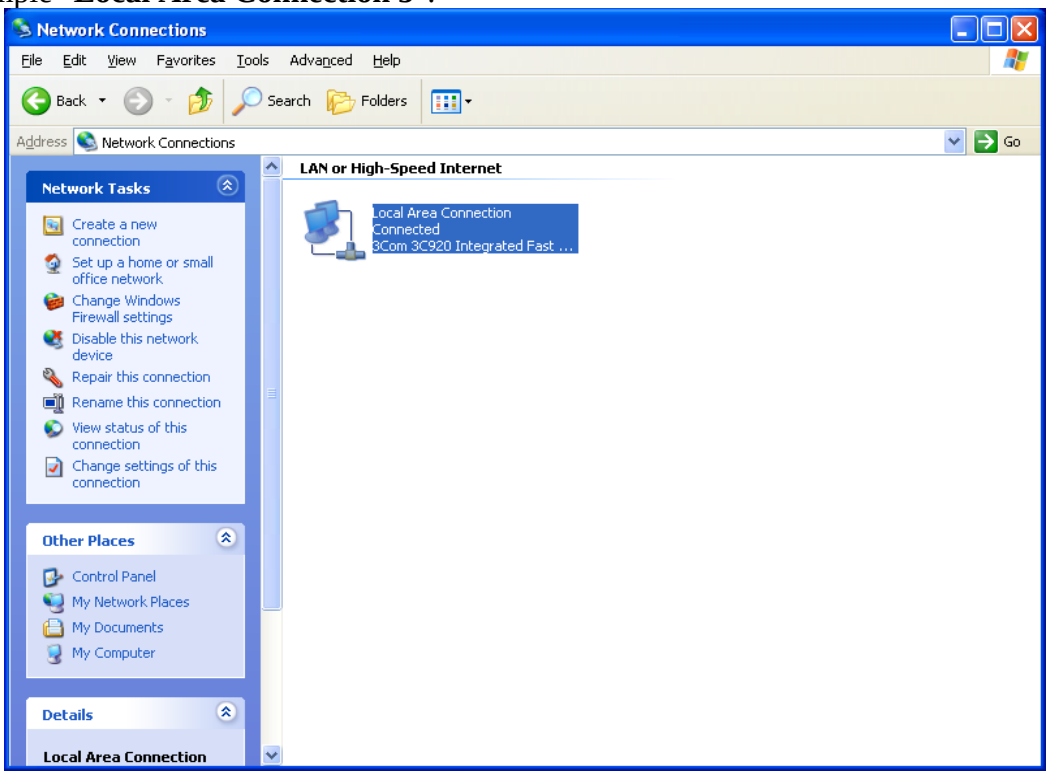
Click the "Network and Internet Connections" option.



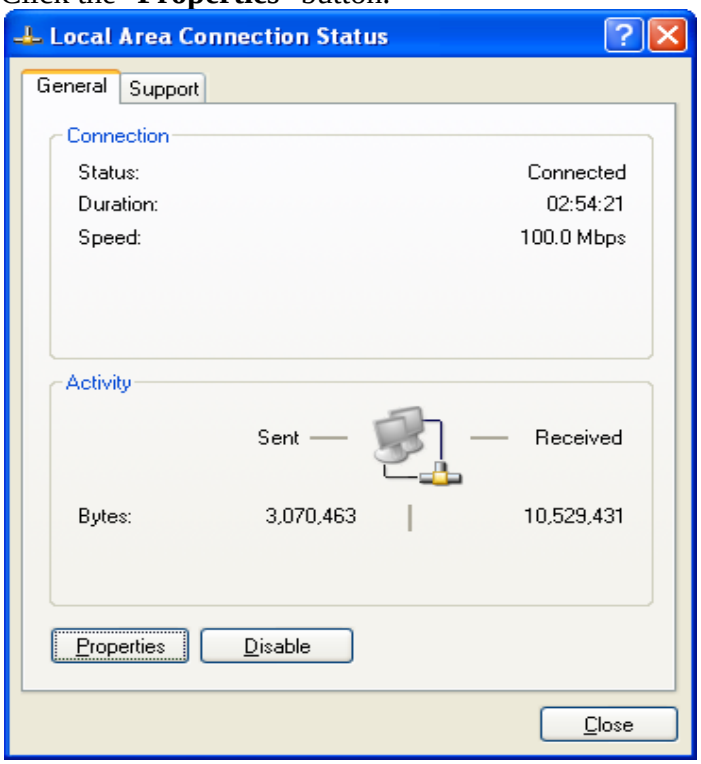
Then click the "**Network Connections**" option.



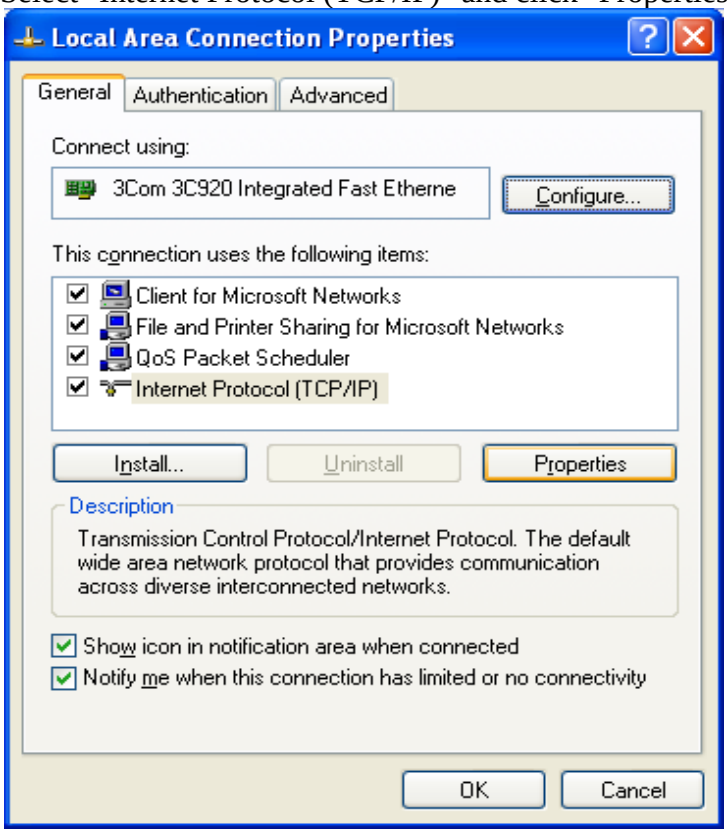
Double click the icon labelled "**Local Area Connection**". The icon may have a number after it, for example "**Local Area Connection 5**".



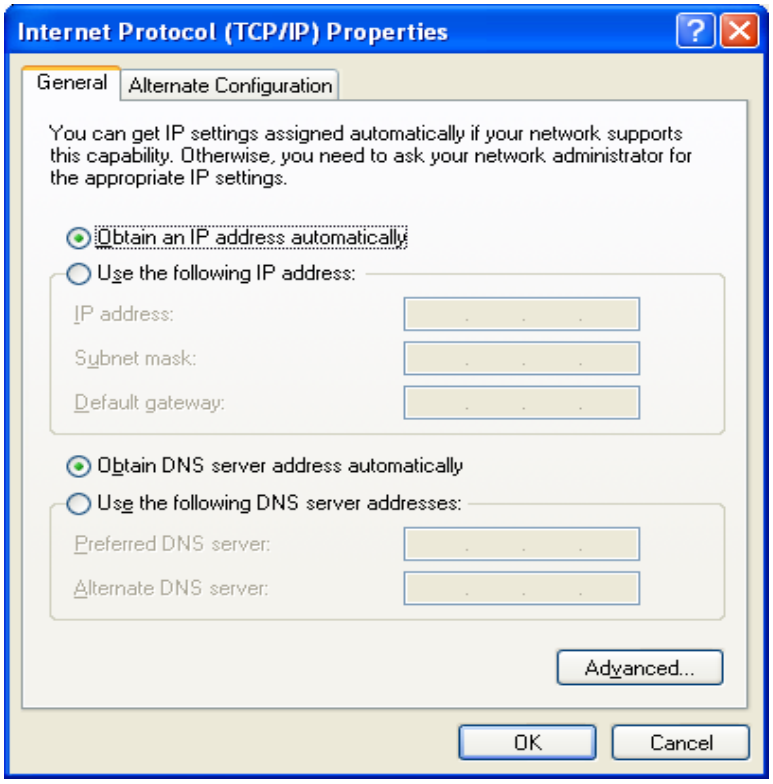
Click the "**Properties**" button.



Select "Internet Protocol (TCP/IP)" and click "Properties".

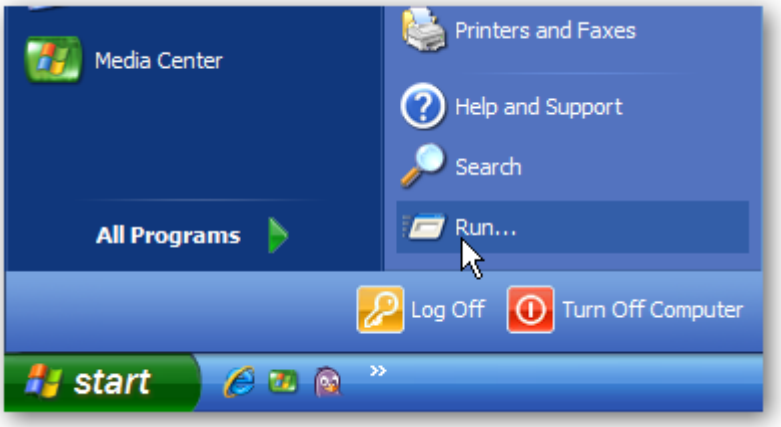


Ensure that "**Obtain an IP address automatically**" and "**Obtain DNS server address automatically**" are selected, then click **OK**

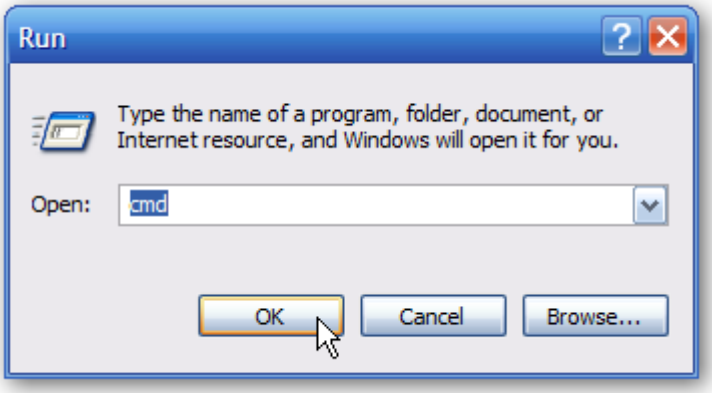


Close all open windows and **reboot** the computer if Windows asks. You should now be connected to the network.

Again you can **verify** the settings by doing an ***ipconfig*** in the command prompt. In case you're not sure how to do this, click on Start then **Run**.



In the Run box type in *cmd* and click OK.



Then at the prompt type in ***ipconfig*** and hit **Enter**. This will show the IP address for the network adapter you changed.

If you have a small office or home network, assigning each computer a specific IP address makes it a lot easier to manage and troubleshoot network connection problems.

Internet

The **Internet** is a global system of interconnected computer networks that use the standard Internet protocol suite (*TCP/IP*) to serve several billion users worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW), the infrastructure to support email, and peer-to-peer networks.

Most traditional communications media including telephone, music, film, and television are being reshaped or redefined by the Internet, giving birth to new services such as voice over

Internet Protocol (VoIP) and Internet Protocol television (IPTV). Newspaper, book and other print publishing are adapting to website technology, or are reshaped into blogging and web feeds. The Internet has enabled and accelerated new forms of human interactions through instant messaging, Internet forums, and social networking. Online shopping has boomed both for major retail outlets and small artisans and traders. Business-to-business and financial services on the Internet affect supply chains across entire industries.

The origins of the Internet reach back to research commissioned by the United States government in the 1960s to build robust, fault-tolerant communication via computer networks. While this work, together with work in the United Kingdom and France, led to important precursor networks, they were not the Internet. There is no consensus on the exact date when the modern Internet came into being, but sometime in the early to mid-1980s is considered reasonable.

The funding of a new U.S. backbone by the National Science Foundation in the 1980s, as well as private funding for other commercial backbones, led to worldwide participation in the development of new networking technologies, and the merger of many networks. Though the Internet has been widely used by academia since the 1980s, the commercialization of what was by the 1990s an international network resulted in its popularization and incorporation into virtually every aspect of modern human life. As of June 2012, more than 2.4 billion people—over a third of the world's human population—have used the services of the Internet; approximately 100 times more people than were using it in 1995.

The Internet has no centralized governance in either technological implementation or policies for access and usage; each constituent network sets its own policies. Only the overreaching definitions of the two principal name spaces in the Internet, the Internet Protocol address space and the Domain Name System, are directed by a maintainer organization, the Internet Corporation for Assigned Names and Numbers (ICANN). The technical underpinning and standardization of the core protocols (IPv4 and IPv6) is an activity of the Internet Engineering Task Force (IETF), a non-profit organization of loosely affiliated international participants that anyone may associate with by contributing technical expertise.

Conclusion

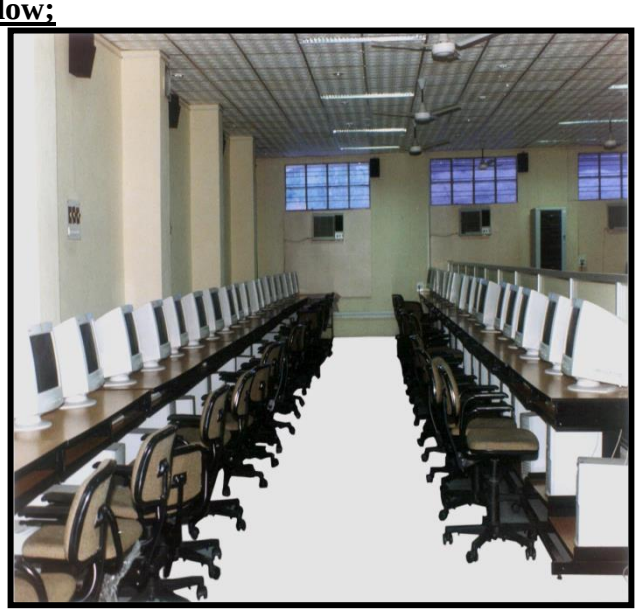
Though many smaller nonprofits or libraries may hire an external contractor or IT support person to help them build and develop effective networks, understanding the basic roadmap and definitions for building a network can help ensure that the results work best for their needs. Spend time trying to accurately answer the questions listed at the start of this article and weigh the options listed in the sections when deciding on the network that will suit your organization's budget, IT staff, and needs most appropriately.

Computer laboratory overview

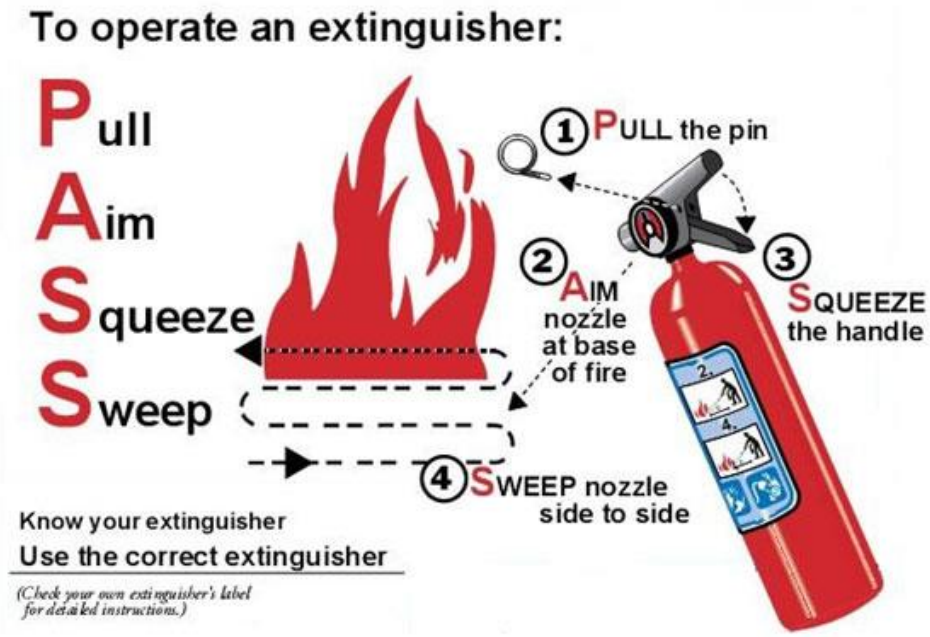
A standard computer laboratory should have the following;

- Enough space,
- Free from dust
- Free from water
- Adequate Computers
- Fire extinguisher
- Projector
- Power Stabliser/ UPS
- Blower
- Relayable power Source
- Enough Airation
- Lab Technician/ attendant/ instructor. Etc

A Stanard Computer Laboratory Should Be well equipped and Have Enough Space as Illustrated Below;



IT'S A MUST FOR EVERY STANDARD COMPUTER LABORATORY TO HAVE A FIRE EXTINGUISHER


To operate an extinguisher:
Pull
Aim
Squeeze
Sweep
1 PULL the pin
2 AIM nozzle at base of fire
3 SQUEEZE the handle
4 SWEEP nozzle side to side
Know your extinguisher
Use the correct extinguisher
(Check your own extinguisher's label for detailed instructions.)

APPENDIX I: QUESTION BANK
O-Level ICT Paper II: Past Papers (O-Level ICT/ Computer Practicals)

840/2
COMPUTER STUDIES
PRACTICAL
Paper 2
***Oct./Nov'.* 2007**
2 *1/4* hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

COMPUTER STUDIES PRACTICAL

Paper 2

2 hours 15 minutes

INSIRUCTIONS TO CANDIDATES:

This paper consists of two *sections* A *and* B.
Section A *consists Of* **one** *compulsory question.*
Section **B** *contains* four *questions. Attempt any* **One** *question from this* ***Section***
Each candidate is provided with a new formatted 3.5" diskette of high density *or a* blank compact **disc** — Rewritable.
Each candidate **must** *produce a* **hard copy** *for each of their work to accompany the diskette or compact disc.*
Software he/p wizards must **not** *be used.*

 Turn Over

SECTION A: (40 MARKS)

This section is compulsory.

1. (a) (i) Type the text below using a word processing program: ***(08 MARKS)***

CHOOSING WORD PROCESSING *SOFTWARE*

Word processing is using the computer to enter, store, manipulate and print text in letters, reports, books and so on.

Once *you* have used word processing, you will probably wonder (like a million others before you) how in the world you ever survived without it.

As more word processing packages come on the market, choosing the right software car: become very confusing. Nevertheless, there is probably a word processing package that will serve your needs. As you begin looking, ask yourself these questions:

i. What types of documents am I
now producing?
planning to produce?
ii. What types of features d
reed?
want?

Document types can range from simple letters and memos to proposals, reports, legal documents, hooks, newsletters, scientific papers, form letters, and so on. The point is, match the features you need with the features in the software package. For example, if you write articles that require references, you will need the footnoting feature; if you develop a newsletter, having the multicolumn layout feature would be handy; if scientific notation is needed, you will want superscripts (X2+Y2) and subscripts (A21); and if you send "personalized" form letters the mail-merge feature is a necessity.

A number of add-on programs are available to enhance the functionality of word processing packages. These include:

On-line thesaurus
Spelling checker
Grammar checker
Style checker

Idea processor (outliner).

What you can do with word processing is limited only by your imagination and willingness to learn the system. Good luck in your Computer-assisted writing adventures-now and in the future!

(ii) insert in the header the word "Tips" on the left hand corner and 'Word Processing" on the right hand corner. ***(02 marks)***

(iii) Hold the heading font size 22-points underline and centre it. ***(01 mark)***

(iv) Block indent paragraph one by 1 inch in the right and left margins. ***(01 mark)***

(v) In the paragraph starting with "Document" bold the second sentence. ***(01 mark)***

(vi) Make 2 the superscript of X and Y in the expression (X2 + Y2) and 21 the subscript of A in the expression (A21). ***(02 marks)***

(vii) Insert bullets on the list of functionality of word processing packages given in the text. ***(01 mark)***

(viii) Insert a footnote of your name and index number on the left and page number on the right hand corner. ***(02 marks)***

(ix) Save the work as *choosing software* and make a print out. ***(02 marks)***

(b) (i) Create a worksheet and enter the d**ata** below: *(02* ***marks)***

SCHOOL CANTEEN	**Ql/2006**	***Q2/2006***	**Q3/2006**	***Q4/2006***	**YTD**
Sales Revenue -	22,500	38,000 -	52,800	**85,700**	
Cost *of* Goods sold					
Gross Margin					
Variable Expenses					
Fixed Expenses	6,000	6,000	6,000	6,000	
Net Profit					

Note: **QI, Q2, Q3, Q4** are four quarters of the year.

Complete the worksheet using the following information.

(ii) The Cost of Goods sold and Variable Expenses for the school canteen are *55%* and 10% of the Sales Revenue respectively.

(04 marks)

(iii) Enter a formula for each quarter to calculate the Gross Margin which is equal to Sales Revenue minus Cost of Goods sold.

(02 marks)

(iv) Net profit is equal to Gross Margin minus Variable and Fixed Expenses. ***(02 marks)***

(v) Add a column called YTD that totals the **figures from** the four quarters. ***(02 marks)***

(vi) Draw a bar graph for Net Profit for the four quarters. *(03 marks)*

(vii) add title "School canteen Net Profit" and label the x-axis as "Quarterly Net Profit" and the y-axis as "Amount in Shillings."(03 marks)

(viii) Save your worksheet as your surname and print **(02 marks)**

SECTION B: (60 **MARKS)**

Answer any one question from this section

2. The table **below gives** information on some **staff** members of **a Computer** school **called "COMTECH** ACADEMY"

EMP. NO	SURNAME	FIRST NAME	SEX	TITLE	DEPARTMENT	SALARY (Shs)	DATE OF BIRTH
CAOOI	ADUWO	JANE	F	DEPUTY	ADMINISTRATION	620,000	17-06-36
CA50	HOLOWO	MOSES	F	TEACHER	BUSINESS	510,000	06-08-77
CA061	WAPAKABULO	JAMES	M	TEACHER	BUSINESS	600,000	05-06-70
CA150	NAKUMUSANA	MARY	F	SECRETARY	INFORMATION	275,000	20-07-36
CA168	KOMAKECH	MIKE	M	TEACHER	BUSINESS	500,000	15-06-63
CA170	MUTEBI	JOHN	M	DIRECTOR	ADMINISTRATION	1,000,0000	17-07-66
CA190	NDAULA	SARAH	F	CASHIER	ADMINISTRATION	600,000	14-04-68
CA201	OKELLO	JOHN	M	DRIVER	ADMINISTRATION	265,000	16-05-63
CA215	ALIYP	JOYCE	F	SECRETARY	COMPUTING	275,000	20-08-70
CA307	NASUUNA	HARY	F	LIBRARIAN	INFORMATION	310,000	07-11-74

Note: EMP NO. Represents Employee Number

(a) (i) Y u are required to design a suitable database to manage the above information name the Database EMPLOYEE DATABASE. ***(01 Marks)***

(ii) *Create* a table using Design View and name it EMPLOYEE TABLE. ***(I6 marks)***

(iii) Create a form called Employee Entry Form and enter the above records. ***(15 marks)***

(h) (I) Create a query displaying all the fields in the above table to filter old only employees from the department of Information. Save it as INFORMATION DEPARTMENT **(05 *marks)***

Print the query and its output. ***(02 marks)***

(ii) Create another query displaying all the fields of employees with salary less than 300,000.
Name it "salary scales employees less than 300,000." ***(05 marks)***
Print the query and its output. ***(02 marks)***
(iii) The academy's retirement age is 55 years. Create a query to filter out the employees whose ages are above *55* years. Name it "RETIREMENT AGE" ***(05 marks)***
Print the query and its output. ***(02 marks)***
(iv) Create a report using the Employee Table and group the records by department and name it "REPORT BY DEPARTMENT" ***(05 marks)***
Print the report and the query. ***(02 marks)***

3. You have been contacted to design a website for 1-luma Local Government Administration which include the following:
(a) An index page with the title "HUMAN" and heading "HUMA LOCAL GOVERNMENT **ADMINISTRATION".**
The page should have:
(i) Provision for inserting the administration block photograph. The building is still under construction. ***(08 marks)***
(ii) Six local government departments i.e.
- Administration department
- Finance department
- Human Resource department
- Health department
- Education and Sports department
- Security department

(12 marks)

(iii) The following three column table:

First name	Last name	department
Okello	James	Finance
Hellen	Mukisa	Human Resource
Isa	Lutalo	Health

(18 marks)

(b) Create a link on the Education and Sports department in (a)(ii) above which will lead you to a page explaining what the department does. ***(05 marks)***

(c) include the district's mission statement at the bottom of the index page. ***(05 marks)***

(d) Provision should be made for originality, creativity, innovation and appropriate use of graphics. ***(08 marks)***

(e) Save your work in your name and index number. ***(02 marks)***

(f) Print your work. ***(02 marks)***

4. Create a suitable 7-slide show presentation for your school, with the following items:

NOTE: Your slides should:

(i) use appropriate transition schemes to view your presentation.

(ii) use appropriate **tr**ansition for your show.

(iii) apply clips and word art where applicable.

(iv) apply appropriate Design templates and background colour.

(v) have a header as your name and index number.

(a) A title slide with the name of your school. ***(07 marks)***

(b) A text slide with the departments in the school. ***(07 marks)***

(c) A text slide with the subjects taught in the school. ***(07 marks)***

(d) A two column text slid with the names of teachers in the school. ***(08 marks)***

(e) A text slide with co-curricular activities in the school. ***(07 marks)***

(f) A tabular slide with ten (10) imaginary senior four candidates with their imaginary marks in end of term two computer studies test. ***(10 marks)***

(g) A Line graph for analyzing performance of the ten candidates in (f) above. ***(10 marks)***

(h) Save your work as your name and index number. ***(02 marks)***

(i) Print your slides. ***(02 marks)***

5. East African Community (made up of Uganda, Tanzania and Kenya — **UTAKE**) is gradually moving into a political, economical and social federation. The three countries are determined to form the most powerful economic giant on the African continent.

Using any available web publishing software, design a web page for the East African Community. Make sure your home page is impressive, creative and has appropriate graphics and not too slow to download.

(i) The home page should have a short story about East Africa of about 100 words. ***(22 marks)***

(ii) The home page should have a link to ea h of the **three** countries; Uganda, Tanzania and Kenya. ***(15 marks)***

(iii) Each linked page, in (ii) above should have a short story about that country. ***(18 marks)***

(iv) Indicate your name and index number as footer. ***(02 marks)***

(v) Save your work as HEAC surname. ***(01 mark)***

(vi) Print your work including your links. ***(02 marks)***

END

840/2

COMPUTER STUDIES

PRACTICAL

Paper 2

July/August 2010

2'/4 hours

UGANDA PRIVATE AND INTEGRATED SCHOOLS ASSOCIATION U.C.E FINAL ASSESSMENT EXAMINATIONS YEAR 2010

COMPUTER STUDIES

PRACTICAL

Paper 2

2 hour 15 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of two sections A and B.
Section A consists of one corn pulsory question.
Section B contains three questions. Answer any two questions front this section.
*Each candidate is provided with a **new** compact disk — rewritable or a new formatted 3.5" diskette of high density.*
Each candidate must produce a hardcopy for each of their work to accompany the diskette of compact disc
Software help wizards must not be used.

1. (a) Type this passage as it is: **(6 marks)**

Ecological Diversity

Ecological diversity is the intricate network of different species **present in local** ecosystems and the dynamic interplay between them. An ecosystem consists of organisms from many different species living together in a region that are connected by the flow of energy, nutrients, and matter that occurs as the organisms of different species interact with one another. The ultimate source of energy in nearly all ecosystems is the Sun. The Sun's radiant energy is converted to chemical energy by plants. This energy flows through the systems when animals eat the plants and then are eaten, in turn, by other animals. Fungi derive energy by decomposing organisms, releasing nutrients back into the soil as they do so. An ecosystem, then, is a collection of living components— microbes, plants, animals, and fungi—and nonliving components—climate and chemicals—that are connected by energy flow. Removing just one species from an ecosystem damages the flow of energy of that system. For instance, in the late 19th and early 20th centuries, sea otters were hunted to near extinction in many kelp forests off the coast of the Pacific Northwest of the United States and western Canada. causing the entire ecosystem to **suffer.** Otters eat sea urchins, small. spiny organisms that share their habitat. When the otters disappeared. the sea urchin population exploded and started to destroy the vast beds of kelp. Without the kelp, other species that lived in the ecosystem. including many species of fish and snails and other invertebrates, began to decline in number. Efforts to restore sea otter populations brought the kelp communities back to near normal in the late 20th century.

ii) Set the page size to A4 and the page orientation to landscape. **(1 mark)**

iii) Set the top and bottom margins to 3 centimeters and the left and right margins to 2 centimeters. **(1 mark)**

iv) Place your name left aligned, your centre number centre aligned and your candidate number right aligned in the header. Place an automated page number right aligned in the footer. **(1 mark)**

v) Format the entire document into three equally spaced columns, with a 4 millimeter gap between the columns. **(2 marks)**

vi) Make the following changes to the passage:

a. Set the text to a serif font.

b. Set the text to *1.5* line spacing.

c. Make the text fully justified.

d. Set the text size to 10 point.

e. Insert a page break before the first paragraph.

f. Format ONLY the first page of the document as a single column. **(3 marks)**

vii) Make this first page a title page by adding the heading Ecological Bio - Diversity **(1 mark)**

a. Make the heading centre aligned.

b. Set the text size of the heading to 72 point. **(1 mark)**

viii) Import a graphic image showing a tree (from clip art, scanner, digital camera or elsewhere), and place this in the top left corner of page 2. **(1 mark)**

ix) Change the image so that:

- it is re-sized to fill the column width
- the text sits below the image. **(1 mark)**

x) Check the passage for spelling errors. **(1 mark)**

xi)Save the document in a folder named Bio — Diversity' on the diskette/Cd provided. **(1 mark)**

b) (i) Enter the data below in a Ms Excel Worksheet ***(5 Marks)***

(ii) Using the Information below, complete the table: ***(8 Marks)***

- Revenue from ***sales*** is expected to increase by 10% every month
- Revenue from ***Services*** and ***Others*** decreases by 2% every month
- ***Salaries*** and ***Wages*** increased by 50% only in February and stayed constant for March
- ***Purchases*** increased by 10% every month.

(iii) Calculate the ***Total Revenue*** and ***Expenditure*** for each month ***(3 Marks)***

(iv) Calculate the ***Overall* Revenue** *and Overall* ***Expenditure*** for this company. ***(1 Mark)***

(v) Calculate the ***Profit*** earned for each month. ***(1 Mark)***

(vi) Calculate the ***Overall*** Profit earned by the company. ***(1 Mark)***

(vii)Save your work as ***"My** Accounts"*. ***(1 Mark)***

INCOME AND PXPINDTTURE ESTIMATE FOR THE YEAR 2008/09

CODE	**ITEM**	**JANUARY**	**FEBRUARY**	**MARCH**	**TOTAL**
INCOME	Sales	125000	*?*	*?*	*?*
INCO1	Services	**50000**	*?*	*?*	*?*
INCO2	Others	**70000**	*???????*	*???????*	*???????*
INCO3	**TOTAL**	???????	???????	???????	???????
EXPENDITURE					
EXPO1	Salaries	50000	*?*	*?*	*?*
EXPO2	Wages	30000	*?*	*?*	*?*
EXPO3	Travel	10000			*?*
EXPO4	Purchase	60000	10000	10000	*???????*
	TOTAL				*???????*
	PROFIT	???????	???????	???????	???????

SECTION B (60 marks)

Attempt any two questions from this section. All questions carry equal marks.

2. The following are details of employees in different Ministries in Uganda. Study and answer' the following questions:

Employee Table

Ep_No	Name	Telephone number	Gender	Salary ($)	Designation	Institution Number
1	Mutebi Prosper	0752455656	M	300	Policeman	B001
2	Naku Anent	0772898765	- F	300	Policeman	B001
3 .	Kola Mary	0782078675	F	400	Teacher	B003
4	Kumagum Kepler	0742029282	M	600	Doctor	B002
5	Nanu Angella	0712434343	F	700	Information Technology Officer	B004

Ministry Table

Ministry Number	Ministry Name	City	Telephone Number
B001	Ministry of Internal Affairs	Kanungu	0325545
B002	Ministry of Health	Soroti	4536677
B003	Ministry of Education	Kasese	4533667
B004	Ministry of ICT	Arua	4533666

i) Create a database called ***"UGANDA"*** in Microsoft Access iii a folder created in question 1 (a) ***(1mark)***

ii) Create the tables below, naming appropriate primary keys ***(10 marks)***

iii) Create a relationship between the tables ***(2 marks)***

iv) Create a form for each of the table. Hence enter the data as specified in the table above. ***(10 marks)***

v) Create a Query for female employee in Ministry with number 8001. Save it with file name ministry **(4 marks)**

vi) Produce a report of queried work in (V) above and save it Ministry Report ***(2 marks)***

vii) Print your report ***(1 mark).***

3. The ministry of tourism has organized a web publishing competition in secondary schools. You are required to design a web page with the theme *Uganda tourist sites'* that will include the following details:

Homepage showing brief background information about Uganda. **(4 marks)**

Ii. On your Home page, Make a horizontal arrangement of the following clickable list: People , Places, Sights, Sounds and others **(4 marks)**

iii. Make another clickable list vertically on the left of your home page showing the following items: Ecology, Wildlife, Geographical features and Historical sites **(4 marks)**

iv. Create a link on People that will display a new page showing a list of the different tribes in Uganda and a brief description of each of them. **(6 marks)**

v. Create a link on Geographical features that will display a new page talking about the different geographical features and their location. **(6 marks)**

vi. Maintain the top and left arrangement every time you click on the new page **(4 marks)**

vii. Save your website 'Ugatourism'. **(2 marks)**

4. The school has appointed you as an Educator in the Road Awareness week. You are requested to design a presentation that will aid you to instruct the school about Road accidents. Use your skills to design the slides as follows:

SLIDE I

Should have an introduction of the topic and the causes of Road Accidents. **(06 marks)**

SLIDE **II**

The relevancy of educating the children on the topic **(06 marks)**

SLIDE **III**

The should elaborate on ways of avoiding Road accident **(6 marks)**

SLIDE lv

The explain the effects of Road Accident **(6 marks)**

Include clip art gallery where appropriate **(2 marks)**

Minimal graphics **(02 mark)**

Print your slides **(01 mark)**

Save your work as "Road Accidents" **(01 mark)**

END

840/2

COMPUTER STUDIES

PRACTICAL

Paper 2

Aug. **2013**

2: 3MIN

UGADES JOINT MOCK EXAMINATION 2nd TERM 2013

Uganda Certificate of Education

COMPUTER STUDIES PRACTICAL

Paper 2

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES

*This paper consists of two sections A and **B.***

Section A Contains One compulsory question.

Section B contains three question. Answer any two questions from this section.

Each candidate is provided with a new formatted 3.5" diskette of high density or a blank compact disc- rewritable.

*"a candidate must produce a hard **copy** for each of their **work** to* accompany *the diskette or compact*

disk.

Software help wizards must not be used

SECTION A: (40 MARKS)

*This **section is conpu1sory***

1. (a) You are the secretary\ to the school's "Funds, for Food" program and you are required to send out acknowledgment letters to people who have so far made contributions towards the program. The letter contents are the same for all the persons except the addresses, names and nature of contributions.

Below is the letter to be sent and a table of people who have made contributions.

Mukisa Senior Secondary School
P.O. Box 21146
IGANGA
l2' July, 2013

(ADDRESS)
Dear (NAME)

Thank you for your contribution of (NATIJRE OF CONTRIBUTION) towards the "Funds for Food" program.

This project is in its inaugural year but it has been a resounding success.
The learners and staff agree that it should become an annual event. The principal would like thank you and hopes for fore support in future.
Thank you very much.

…….
PRNCIIPAL
NAMUKASA FLORENCE

NO.	**NAME**	**ADDRISS**	**NATURE OF CONTRIBUTION**
1.	Lugavizi John	P.O Box 14, KAMULI.	$430
2.	Muniime Molly	P.0 Box 92, MBARARA	2 500,000/=
3.	Nsibambi Eriya	P. O. Box 160, BULOBA.	20kg of maize
4.	Nakasolya Juliet	P.O Box 1413 KAMPALA	40kg of rice

i) Use appropriate method in any word processing program to make a letter to be sent to each person in the table.

The address and names should be bolded and the contributions in italic ***(l7marks)***

ii) Save your work as your index number ***(01 mark)***

iii) Print each of the four letters. ***(02marks)***

b) (i) enter the date below into a suitable application program and save it as "raw-marks"

NO	**A**	**B**	**C**	**D**	**E**	**F**	**G**
1.							
2.							
3.	**STUDENT NUMBER**	**NAMES**	**TELEPHONE NUMBER**	**TEST A**	**%**	**TEST B**	**%**
4.	01	Lule Nabil	0414372475	34		43	
5.	02	Okello Oryem	0712312130	56		22	
6.	03	Nantongo .F.	0414 421 666	76		34	
7.	04	Sempa.H.	0414927384	54		67	
8.	05	Senabulya.S	0414991 622	34		65	
9.	06	Kato .P.	0782 421 333	67		34	
10.	07	Semujju .K.	0414 696	89		56	
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							

(05 marks)

(ii) Copy the work in (i) and paste it in worksheet 2 of the same workbook. Name the worksheet 2 as "percentage-marks" ***(02 marks)***

(iii) Given that Test A and Test B are marked out of 90 and 70 respectively, enter appropriate formulae to calculate the percentage marks for both tests using "percentage-marks" worksheet ***(40 marks)***

iv) Use functions to obtain the difference between the highest and lowest percentage marks in Test A in cell E21. **(04 mark)**

(v) Calculate the average mark for Test B in cell G2 1. **(02 marks)**

(vi) Save your work. **(01 marks)**

(vii) Print your work. **(02 mark)**

SECTION B: (60 MARK'S)

Answer any two questions from this section

2. The table below shows books in a library

DATABASE OF BOOKS IN THE LIBRARY

Code Number	Title	Name Of Author	Paper Back (P) Or Hard Back (H)	Borrower Number	Date Due Back
2043	The Great Gatsby	F. Scott	. P	. 15234	01 June 08
5284	Jane Austen — A life	C. Tomalin	H	11356	02June08
4033	Harry Porter and the Philosopher's Stone	J.K Rowling	H	16582	26June08
0549	Northern Lights	P.Pullman	P	12982	28June08

DATABASE OF BORROWERS

Borrow number	Name of borrower	Address of borrower	Borrower's phone number
11356	Tobias Ahendra	658, Uhuru Highway, P. O Box 2809	0772344567
16582	Carlos Moyes	12, Avenue De Lupin P.O Box 65432	0712417398

Computers are now widely used in libraries. Using a Database Management Systems program.

a) Create table of books and enter the data, ***(08 marks)***

b) Create another table of borrowers and enter the data. ***(03 marks)***

c) Sort the records in pare (a) in descending order of code number ***(04 marks)***

d) Using field code number, title, name of author, paper back or hard back, date due back, create a query showing borrows number that is above 12506 using table in 2 *(a)* ***(04marks)***

e) Create a query, showing only books with hard back and the names of the author. The names of the authors should he in ascending order **(03 marks)**

f) Create a relationship between the books' and borrowers' tables **(03 marks)**

g) Put your name and index in the header and put the current date and time in the footer of both tables **(03 marks)**

h) Create a report using both tables and name the report as "borrowers" **(03 marks)**

i) Save the database as "library database" **(01 mark)**

3. You have been **selected** as the web—master for the school's "Computer Club website for the club. In your planning stage you decide to include the following on the website:

(i) Membership **(05marks)**

(ii) Organizational structure of the club **(05marks)**

(iii) Activities **(05marks)**

(iv') News **(05marks)**

(v) Feedback **(05marks)**

Design the website including a logo to make **it** professional. Include also the source, date when written, contact of author, last update and references where necessary. **(05marks)**

4. Road accidents are very rampant in Uganda. Many people have lost their lives in road accidents. You are required, using presentation software to educate Ugandans road accidents. Create four slides as indicated in parts (i) – (iv). Every slide should:

- Use minimal graphical effects to make the presentations entertaining be able to convey the appropriate message to the community.
- Run with a click of the mouse
- Have your name and index number as footer

  (i) Slide-I Should include the title, your name and your school name ***(06 marks)***

  (ii **Slide** 11— should include the actual causes of road accidents in Uganda. **(07 *marks)***

  (iii) Slide III— should include the contribution of traffic police in ***the prevention of road accidents.*** ***(07 marks)***

  (iv) Slide IV— should include the preliminary precautions to avoid road accidents. **(07marks)**

(v) Save the presentation as "Road Accidents" **(01 marks)**

(vi) Print your slide **(02 marks)**

840/2

COMPUTER STUDIES

PRACTICAL

Paper 2

Oct./Nov. 2013

21/4 hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

COMPUTER STUDIES PRACTICAL

Paper 2

2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of two *sections,* **A** *and* **B.**

Section **A** *contains* **one** *compulsory question.*

Section **B** *contains* **three** *questions. Answer any* two *questions from this section.*

Any additional question(s) answered will **not** *be marked.*

Each candidate is provided with a **new formatted** *3.5"* **diskette of high density** *or a* blank compact disc — **rewritable.**

Each candidate **must** *produce a* **hard** copyfor *each of their work to accompany the diskette or compact disc.*

Software help wizards **must not** *be used.*

SECTION A: (40 MARKS)

compulsory *Question.*

1. (a) (i) Using a word processor, create the table below as it is: ***(05 marks)***

<table>
<tr><td colspan="3">A</td><td>K</td></tr>
<tr><td colspan="3"></td><td>L</td></tr>
<tr><td>B</td><td rowspan="3">D</td><td>G</td><td rowspan="3">M</td></tr>
<tr><td rowspan="2"></td><td>H</td></tr>
<tr><td>C</td><td>I</td></tr>
<tr><td rowspan="2"></td><td>E</td><td rowspan="2">J</td><td>N</td></tr>
<tr><td>F</td><td></td></tr>
</table>

(ii) In part A insert: “Quality chemicals” in bold, font size 16, font style, Anal and centred.

(02 marks)

(iii) In part B insert: “Acids” in bold italics, font size 14,font style, Times New Roman.

(*02marks)*

(iv) In part D insert: “Alkalines” size 17, font style Arial, centred. **(02 marks)**

(v) Fill parts, G, H, I, J with light blue, pale yellow, light green and red respectively. ***(03 marks)***

(vi) In part K insert: “Handle with care”; and part L insert keep in a safe place.” ***(02 marks)***

(vii) In parts M and N type: “Example of an acid: Sulphuric acid”; and “Example of an acid pH: positive, and negative” respectively. ***(01 mark)***

(viii) Save your work on the storage media given, as ‘chemicals’. ***(01 mark)***

(ix) Print your work. ***(02 marks)***

(b) The table below represents prices of commodities in various markets in a particular town.

	A	B	C	D	E	F
1	**COMMODITY**	**MARKET I**	**MARKET 2**	**MARKET 3**	**MARKET 4**	
2	Rice	1,000	1,100	1,950	1,100	

3	Sugar	1,700	1,650	1,710	1,800	
4	Meat	2,500	2,200	2,700	2,800	
5	Salt	400	450	500	410	
6	Oats	1,200	1,100	1,150	1,210	
7						

(i) Enter the data as it is in a spreadsheet program.)J formulas to calculate the average prices of each commo and insert your answer in column F. Save your entrie as" arket prices". ***(07 marks)***

(ii) The prices of all commodities in markets I and 3 have been levied a Value Added Tax (VAT) of 17%. Use a formula to calculate the new prices after VAT and put them in columns H and I. Label them "Market I with VATS and "Market 3 with VAT' respectively. Save changes.

(05 marks)

(iii) Create a column graph representing the prices of sugar in the given markets. Save it in the same spreadsheet. ***(04 marks)***

(iv) Put your name as the Header and the index number and date as the Footer on all copies of your work. ***(02 marks)***

(v) Print your work. ***(02 marks)***

SECTION B: (60 MARKS)

Answer any* two *questions from this section.

2. (a) Create a database, "computer class" containing a table "students" with the following database structure. Use a suitable field as the primary key and print your structure. *(08 marks)*

Field Name	**Data Type**	**Field Size**
Student ID	Text	4
Name	Text	20

Class	Text	2
Fees Paid	Number	Integer
— Birthday	Date/time	—
Address Interests	Text	30
Text	Text	50
CA member	Yes/No	—
Remarks	Memo	-

(b) Enter the data below into the students' table, save and print your database.

Student Id	Names	Form	Fees	Birthday	Address	Interests	CA member	Remarks
0123	Lule S	4A	150,000	1986/04/23	Kabale	Basket ball	No	—
1034	Otto G.	4A	110,000	1986/07/11	Jinja	Skipping	Yes	—
1031	OdaL.	4B	40,000	1986/01/19	Mbale	Hiking	Yes	Monitor
0029	Namuli M.	4B	25,000	1986/12/13	Kampala	Reading	Yes	—
0366	Asiku P	4A	165,000	1986/10/08	Kampala	Reading	Yes	Monitor
OilS	Matovu E	4B	200,000	1986/03/14	Kotido	Cycling	No	-
1002	Asiimwe	4A	80,000	1986/08/22	Mbale	Eating	Yes	Prefect

0333	Kayanja E.	4B	50,000	1986/04/23	Mbale	Skipping	Yes	—
0246	Madada F.	4A	200,000	1986/10/29	Mbale	Skipping	Yes	—
	Kasolo E.	4B	135,000	1986/03/23	Kasese	Swimming	Yes	Prefect

(10 marks)

(c) Create a query 4h will display the names and class of the students who are interested in reading. Print the results of the query.

(06 marks)

(d) The total fees for form 4 is Shs.200,000/. Create a query which will display the names of students who have paid less than half the fees.

Print the results of the query. ***(06 marks)***

3. Quantichem is a chemical factory which manufactures agricultural chemicals. it sells its products of a national and international levels, it has four departments as follows:

• Administration: Has three managers, one administrator, one secretary and two support staff.

• Accounts department: Has two accountants and one clerk.

• Production department: Has three managers and 20 workers.

• Marketing department: Has one marketing officer and four salesmen.

As a website designer you are requested to create and design a website for the company.

Create a web page consisting of the following:

(a) an index page with links to all departments with a company logo. ***(06 marks)***

(b) a page on the:

(i) Production department, detailing the variety of chemicals produced. ***(04 marks***

(ii) Administration department detailing the different managers and their roles. ***(04 marks)***

(iii) Marketing departments detailing where the products are sold. ***(04 marks)***

(c) A products photo gallery showing the various products and objectives of the company. ***(03 marks)***

(Note: The pictures do not have to be real ones but closely related)

(d) In the website:

(i) Include a feedback provision where a visitor to the page can send an e-mail. ***(03 marks)***

(ii) Write your name and index number at the end of the last page as a header. ***(02marks)***

(iii) Save the file as "chemical products". ***(02 marks)***

(e) Print your work. ***(02 marks)***

4. The Environment Management Association has commissioned you to educate schools in the northern region of the country about the importance of environment in society.

(a) Use appropriate graphics/pictures in each slide as follows:

(i) Slide I should have the introduction of the topic. ***(08 marks)***

(ii) Slide Ii should have the content of the topic. ***(08 marks)***

(iii) Slide III should have the relevance of safeguarding our environment. ***(08 marks)***

(b) include your name and index number at the bottom of each slide. ***(02 marks)***

(c) Save your presentation as "Environment". *(02* ***marks)***

(d) Print your work. ***(02 marks)***

A-Level ICT Paper II: Past Papers (A-Level ICT/ Computer Practicals)

Name……..Centre/Index No:…….

Signature……..

.

850/1
s.6
SUBSIDIARY ICT
Paper 2
JUNE/JU LY 2013
3 hours

UGANDA ADVANCED CERTIFICATE OF

EDUCATION

SUBSIDIARY ICT PAPER 2

INSTRUCTIONS TO *CANDIDATES:*

1. Attempt ALL questions in this paper

INSTRUCTIONS TO CANDIDATES:

This paper consists of ***five*** questions In all

Section all questions are compulsory.

Each candidate is provided with a new formatted 3.5" diskette of high density *or a* **blank** compact disc — rewritable or flash disk.

Each candidate must produce a hard copy for each of their work to accompany the diskette or

compact' disc or flash disk.

Software help wizards must *be used.*

1 .Using a word processor of your choice type the following: **[7 marks]**

AREAS OF APPLICATION FOR INFORMATION TECHNOLO*GY*

Education and training.

Many Universities, Colleges, school and public libraries are on0line with websites for purposes of making easy access to educational information. Education references soft ware e.g. the Infopedia, Encarta, etc arc programs used for helping people with English usage, data collection and analysis. Business E- Business E-Business in addition to encompassing E-commerce includes both front and 'back-office applications that form the engine for modem E-commerce. E-business is not just about E-commerce transactions; it's about re-defining old business models, with the aid of technology to ***maximize*** customer value. E-Business is the overall strategy aid E-commerce is an extremely important facet of E-Business. E -commerce facilitate the buying and selling of goods and services on line. E-commerce is buying and selling using an electronic medium. It is accepting credit and payments over the net, doing banking transactions using the Internet, selling commodities or information using the World Wide Web and so on.

+ Other businesses include;
+ Computer Secretarial Bureau.
+ Internet cafes.
+ Commercial computer schools.
+ O-line banking

a) Change the type of the passage to comic Sans Ms and name it ICT areas of application. **[2marks]**

b) Center the heading, underline it. increase the font size to 20 and font type to Algerian **[4marks]**

c) Perform a word count for the passage and type it ***at*** the end of the passage as (number of words 23). **[2marks]**

d) Perform a drop cap for ‘he last paragraph. **[2marks]**

e) Insert your name as header and footer. **[2marks]**

f) Print your work. **[1 mark]**

2 a) Using a spread sheet application reproduce the worksheet below:- **[6marks]**

NAMES	**JANUARY**	**FEBRUARY**	**MARCH**	**APRIL**	**MAY**	**JUNE**
MR. DDUMBA	20,000	10,000	7,000	100,000	60,000	150,000
MR.MUSOBA	25,000	12,000	8,000	200,000	50,000	250,000
MR.SANYU	30,000	18,000	16,000	300,000	40,000	350,000
MS. NABUNYA	35,000	22,000	32,000	400,000	30,000	450,000
MR.OTUUNU	20,000	20,000	23,000	22,000	23,000 -	240,000
TOTAL						
AVERAGE						
HIGHEST						
LOWEST						

(b) Calculate using a formulae the:- total for each Month **[2 marks]**

Average for each Month

Highest sales for each Month

Lowest sales for each Month

(c) Insert a column for half yearly sales after June and calculate the sales **[2marks]**

(d) Produce a column graph to represent the six months sales for each person **[2marks]**

(e) Save *it* sales and print the sheet and graph. **[2marks]**

3.(a) create a database called Staff salaries **[2marks]**

(b) Create a table with the database called HIGH GRADE SALARIES with the following details. **[6marks]**

Surname	**Firstname**	***P*ersonal ID**	**Ministry**	**Department**	**Gender**	**Salary**
Nakabaale	Joseph	P043	Heath	Paramedic	Male	750,000
Muhammad	Ali	P047	Education	Planning	Male	560,000
Okullo	Catheline	P063	Education	Curriculum	Female	570,000
Arnaitwe	Ben	P071	Transport	HRM	Male	580,000
Mugadya	Stephen	P077	Transport	Logistics	Male	640,000
Kavulu	Mirembe	P078	Heath	Pharmaceuticals	Female	720,000

(c) Create; query to sort out males. **[2 marks]**

(f) Create a form for only staff in the transport ministry call it transport form. **[2 marks]**

(d) Create a report with only staff between personal Id P40 to P065. **[2 marks]**

(e) Create a form for all the staff called staff form. **[2 marks]**

(f) Print the form, report, query and table **[l4 marks]**

4. (a) As a student of ICT you are required to design a power point presentation **for** the following aspects.

Slide1: Definition of Network **(2rnarks)**

Slide2: Advantages of networking **(3marks)**

Slide3: Disadvantages of networking **(3marks)**

Should use animations, transitions, and appropriate graphics arid insert your name as header and footer and print the slides. **(12marks)**

5. (a) Use any publication software of your choice, design a certificate for your schools' annual sports. Signatories should be the Headmaster and the Sports master. **[10 marks]**

(b) Use appropriate graphics *and* colors; insert a border of weight of 48pt **with** a **reef** colour scheme.

S5O/2

Subsidiary Information and

Communication Technology

PAPER 2

July / August 2013

2 hours

WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Advanced **Certificate of Education**

SUBSIDIARY 1CT

(Practical)

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

1. The paper is made up of five (5) equal weighted questions.

2. Attempt **any** three *questions in this paper.*

3. Any additional question(s) answered will **not** *be marked.*

4. The Number of marks is given in brackets at the end of each question or part of a question..

5. Each candidate is provided with a new blank compact disk. Rewritable (CD-R W or flash disk.

*6. Each candidate m*ust *produce* **a hard** copy *for each work to accompany the compact disk or flash disk.*

7. Create a folder in your name and registration number on the desktop were you should keep saving your work. After ensuring tat all your work is in the folder transfer it to the CD provided

8. There is no added ***time for and printing writing CD or saving and printing after the stipulated time.***

9. Keep on saving your work as no extra time will be provided in cases of power

1. WORD PROCESSING

Mrs. Kaine Aisha is a secretary of Booster Trading Company Ltd and her company want to invite shareholders for the Annual General Meeting (AGM). The contents of the letter is to be similar to all shareholders except for each shareholder's personal details and titles. Mrs. Kaine Aisha has prepared the letter below to be sent to various shareholders.

BOOSTER TRADING COMPANY LIMITED
P.O BOX 5678, WAKISO

TO: [title] [shareholder's name] 24th/11/2010
[Address]
[Telephone contact]

Dear Sir/Madam
RE: ANNUAL GENERAL MEETING SCHEDULED FOR FRIDAY 30th NOVEMBFR 20l3

You are invited to attend the AGM without fail on the date indicated above, starting at I.00am. In this meeting we shall elect new office bearers. Each shareholder is expected to pay non-refundable amount of [fee] to cater for elections.

Agenda for the meeting is attached hereon.

See you there

Yours faithfully,

KAINEMBABAZI AISHA
COMPANY SECRETARY
C.C Managing *Director*

Below is a table showing a list of various shareholders to receive the above letter.

Title	Shareholder's name	Telephone contact	Address	Fee
Mr. Dr	Joma .T	0772456678	570, Nairobi	80,000/=
Mr. Rev	Obina P.	0774 678 908	320, Kampala	65,000/=
Rev. Dr.	BelekeG	0772456234	321, Luwero	45,000/=

Mrs	Damba Don	031367098	567, Wakiso	120,000/=
Mr. Br.	Fatty Fire	0756 453 576	765, Kalule	100,000/=

Required

i) Type the letter and save it as booster plus your name **(5 marks)**

ii) Create the table and save it as **Shareholder-Your Name** in your folder **(3 marks)**

include a footer of your name and index No on the letter **(02 marks)**

ii) Using an appropriate word processing feature link the table to the letter so as to generate 5 letters to be sent to various shareholders **(5 marks)**

iii) Print all the 5 letters and save your file in the folder as shareholders' letters **(2 marks)**

iv) Set the left and right page margins to 1.5 inches **(01 marks)**

v) Insert a printed watermark of the name of your school in the entire document **(2 marks)**

2. SPREAD SHEETS.

This information was extracted from Kyabaleeta high school. Study it carefully to answer the questions that follow.

ITEM	COST PRICE (UGX)	SCHOOL TAX	PROFITS	EXPENSES	SELLING PRICE
Sumbiz					7,000/=
Meat pie					25,000/=
Splash					60,000/=
Daso					35,000/=
Pens					40,000/=
Chapuz					16,000/=
Cassava chips					12,000/=
Boxers					15,500/=
Cakes					35,000/=

Other Information:

Selling price Cost Price ÷ School Tax - Expenses + Profits.

Expenses are = 40% of the selling price.

Profits are 30% of the selling price.

School tax is 10% of the selling price.

Tasks: As someone who appreciates spread sheets principle and functions:

i) Enter the above information in a spread sheet application of your choice. Save it as with your real name. Determine the amount of tax the school gets from the canteen, profits and expenses for each item.

ii) Determine the average and total amount of tax the school collects from the canteen

iii) Change the name of sheet I to Canteen sales.

iv) Determine the cost price for all items. At the beginning of next year the canteen operators have asked the school management that he is going to increase selling prices by 20%. Insert a new column to ***work*** out the new prices for all canteen items next year.

v) Format all figures with UGX currency symbol with one decimal place.

vi) On a separate sheet, plot a line chart to represent the items, cost price and selling ‘1ce.

vii) Apply a centered footer of your name and registration number in our worksheet

viii) Sort the list in descending order according to items.

ix) Change the orientation of the first row of the table to 45 degrees and change its color to blue

x) Copy and paste your work on sheet two, and rename it Canteen.

xi) Wrap you text in the selling price title cell.

3. PRESENTAT1ONS SOFTWARE

Imagine you are soon travelling to the US for three months as a result of your schools exchange program with one of the schools there.

One of the activities there, is for each one of the members of the travelling team to talk about his/her home village.

Load a presentation application of your ability to prepare a presentation with the following features;

i) A title slide of ‘My home village’, including name and contacts of the presenter.

Save your presentation as *'Karokarungi'* ***(2 marks)***

ii) Insert three more slices with the following titles; **(6 *marks)***

- Location of your village - including country, region, district, street and village bearing.
- Economic activities - including food and cash crops, plus other economic activities.
- Social life of your village - including religion. family life, leisure and entertainment activities.

iii) Insert a header of your name and index number. **(I mark)**

iv) Set the background **to** Parchment texture fill. **(1 murk)**

v) Set the slide transition to ***'Blinds'***, with transition slide advance time *3* of seconds. ***(2 marks)***

vi) Set your animations o **'fly *in'*** for slide titles and '***Spine'*** for the other parts. ***(2 marks)***

vii) Use relevant graphics and speakers' notes. ***(1 mark)***

viii) Insert a tabular after the economic activities summarizing all the economic activities in our village. ***(3 marks)***

ix) Print your work ***(2 marks)***

4. DATA BASE

Your country is about to hold a referendum and the electoral commission is looking for a good database administrator. You have been contacted to design and test your database with the following records below.

EC TABLE

Voter	**Name**	**Sex**	**Date of birth**	**Constituency**	**Salary**
U001	Mafabi	M	19-Nov-80	Katikamu north	560,000
U002	Mufulusi	M	02-Apr-72	Kyegegwa -	760.000
U003	Kikarni	M	1 3-Jui-84	Masuka central	990,000
U004	Fulasi	F	01-Jun-69	Kampala central	450,000

U005	Pikipiki	M	11-Dec-81	Mbaleeast	390,000
U006	Serica	F	12-Jan-79	Katikamu south	685.000
U007	Bada	M	15-Feb-60	Wobulenzi kitante	845,000

a) Create a database and name it Electoral Commission ***(1 mark)***

b) Create a table above in design view and name it EC table ***(3 mark)***

c) Create a simple form and use it to enter the records shown in the above table. Use it to calculate the PAYE which is deducted from salary at a rate of 5%. Name *it* form **IC FORM**. **(4 marks)**

d) Create query displaying all fields. Use it ti calculate (he net pay. Name it Net pay. **(4 marks)**

e) Create another query displaying only female voters, name it females only. **(2 *marks)***

f) query for a! male voters horn before 1980. Name it Aged males **(3 *marks)***

(g) Create a report displaying all fields from the table above. Name it all voters. **(1 mark)**

Save your work in your folder and produce printout. ***(2 marks)***

5. DESKOP PULIBLISH1NG

Use a suitable desktop publishing, design a certificate to the awarded to students who have worked tirelessly for Patriotism Club in your school. **(6 marks)**

(a) Apply a suitable boarder ***to*** the certificate and a nice looking *background* **(2 *marks)***

(b) **Use a**ppropriate *Signatories* **to** your certificate i.e. , *P1nroii* and Headmaster, Patron and Club President. ***(3 marks)***

(C) Use suitable fonts i.e. type, size and colours for the text you have inserted. ***(4 marks)***

(d Design a logo for your certificate ***(3 marks)***

(c Save the certificate as Patriotism Club — ‘our names. Copy the saved file in your folder. Produce the print out. ***(2 marks)***

END

S850/2

Subsidiary Information

and Communication

Technology

PRACTICAL PAPER

Paper 2

Nov./Dec. 2013

2 hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Advanced Certificate of Education

SUBSIDIARY ICT

PRACTICAL

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper is made up of five *equally weighted questions.*

Answer any three *questions.*

Any additional question(s) answered will not *be marked.*

Each candidate is provided with a blank Compact Disc Rewritable (CD-RW) or a flash disk.

Candidates should continuously save *their work.*

Each candidate must produce a hard copy for each of their work to accompany the Compact Disc or flash disk.

 Turn Over

*Answer any **three** questions in this paper*

1. (a) Use a word processor of your choice, to produce the document below as it appears. ***(06 marks)***

ICT AS A TOOL FOR TEACHING AND LEARNING

The term ICT stands for Information and Communication Technology and is defined as a "Diverse set of Technological tools and resources used to communicate, and to create, disseminate, store and manage information". ICT has become a very important part of the educational delivery and management processes. ICT largely facilitates the acquisition and absorption of knowledge, and hence can provide extraordinary opportunities to developing countries for enhancing their educational systems particularly for the underprivileged constituency, and thereby for raising the level of quality of life of their people.

(b) Copy the document to another page. ***(01 mark)***

(c) Double space the text in the document. ***(01 mark)***

(d) Italicize and bold the word ICT throughout the document. ***(01 mark)***

(e) Use "Times New Roman" font face and font size; "12" for the entire document. ***(01 mark)***

(f) Insert your name and personal number as the footer and header respectively. Centre align them. ***(03 marks)***

(g) Use mail merge feature to post the document above to the recipients below. ***(05 marks)***

	NAME		**ADDRESS**	**COUNTRY**
MS	AKIIRO GRACE	P.O	BOX 23 KAMPALA	UGANDA
MR	ASSIMWE ANDREW	P.O	BOX 19 NAIROBI	KENYA

(h) Save your work as your name and personal number ***(01 mark)***

(i) Print all your work. ***(01 mark)***

2. (a) A school produced an end of term one mark list for senior five; using any spreadsheet program enter the data in the table below: ***(04 marks)***

	A	B	C	D	E	F	G	H	I	J
1	NAME	DIVINITY	HISTORY	SUB-MATH	CHEMISTRY	PHYSICS	ECONOMICS	TOTAL	AVERAGE	POSITION
2	Ali	58	70	63	23	10	89			
3	David	40	69	47	43	54	76			
4	Hamza	38	60	59	56	62	54			
5	Mary	60	65	48	67	60	34			
6	Abdul	25	43	67	73	28	21			
7	Julius	70	23	47	32	57	34			
8	Pius	34	37	56	41	42	54			
9	Moses	78	75	34	45	68	32			
10										

(b) Provide a heading for your worksheet as "Kitti Secondary School, Results for 2012" and centre it with font size *24.5*. ***(03 marks)***

(c) Using appropriate functions, determine for each student the

(i) Total mark. ***(01 mark)***

(ii) Average mark. ***(01 mark)***

(iii) Position. ***(02 marks)***

(d) Apply boarders on the data you have entered in the worksheet. ***(01 mark)***

(e) Insert your name and personal number as a footer. ***(01 mark)***

(f) The sheet for the table should be named as **Table.** ***(01 mark)***

(g) Create a pie chart using the average mark and include:

(i) The heading "Senior five term one marks, Kitti Secondary School". ***(01 mark)***

(ii) Labels with the Chart. ***(01 mark)***

(h) Copy the chart to sheet 2 and name it chart. ***(02 marks)***

(i) Save your work as your name and personal number. ***(01 mark)***

(j) Print your work. ***(01 mark)***

3. Use any desktop publishing software to design a *certificate of* excellence for Kiryamenvu Senior Secondary Senior six (S.6) candidates who have excelled in the following application packages: Ms word, Ms Excel, Ms PowerPoint, Ms Access and Ms Publisher. Provide space for the signatures of the head teacher and the head of ICT department. ***(10 marks)***

(a) Adjust the paper size to a width of 11 inches and a height of *8.5* inches. ***(02 marks)***

(b) Insert a clip art to represent the owner's photograph. ***(02 marks)***

(c) Use your name as the owner of the certificate. ***(02 marks)***

(d) Insert your name and personal number in the footer. ***(02 marks)***

(e) Save and print your publication. ***(02 marks)***

4. In a learner centred approach, a teacher uses some learners to pass on knowledge to their fellow learners. It makes learning fun as learners get to learn from one another. Senior Six (S.6) learners can pass on knowledge to the Senior Two (S.2) learners and vice versa. Study the information and perform the tasks below.

Categories of Computer Devices

Computer devices are subdivided into four categories as follows:

• Input devices

• Output devices

• Processing devices

• Storage devices

Input devices:- These are any hardware components used to enter data and instructions into a computer system. e.g. keyboard.

Output devices: - These are any hardware components used to display or convey information or data to a user. e.g monitor.

Processing device: - This is used to manipulate data into information. Processing is usually done in a Central Processing Unit (CPU).

Storage devices: - These are used to record and retrieve data to and from a storage medium in the computer system. They can be either internal like the HDD, or external like a CD. Storage devices have got their specialised drives through which data can be written or read. For example, data on a CD can be read with the help of a CD or DVD drive.

Conclusion:

Whereas the above devices are ***standard input-output devices,*** some other devices are referred to as computer peripherals. ***Computer peripherals*** are any electronic devices that can be hooked to a computer. Examples of peripherals include speakers, microphones, printers, scanners and digital cameras.

Tasks:

(a) As a senior six Subsidiary ICT student prepare a four-slide presentation for the S.2 learners summarising the information given above. ***(08 marks)***

(b) Save the presentation with your name. ***(01 mark)***

(c) Insert a header as 'your name and personal number'. ***(01 mark)***

(d) Change the background of all the slides to an appropriate style. ***(01 mark)***

(e) Set a slide transition of your choice, with transition time of 6 seconds. ***(02 marks)***

(f) Set animations of your choice for all slide titles and other parts of the slides. ***(01 mark)***

(g) Make use of speaker's notes and relevant graphics. ***(02 marks)***

(h) Insert a summary tabular slide between the last slide and second last slide with the following data. ***(03 marks)***

Summary table:

NO.	**DEVICE**	**HARDWARE CATEGORY**
I	Keyboard & Mouse	Standard Input device
2	Monitor	Output device
3	CPU	Processing device
4	Hard disk	Storage
5	Speakers, microphones, printers, scanners and digital cameras.	Peripherals

(i) Save and print your work. ***(01 mark)***

5. The table below shows the medical records of a certain clinic.

PID	F name	District	DoB	Diagnosis	Treat fee
P02	Omondi	Busia	03/02/66	Malaria	10000
P04	Katiba	Kampala	06/09/77	Typhoid	100000
P05	Waiswa	Busia	03/05/8 1	Tuberculosis	20000
P06	Nambi	Busia	02/08/89	Dysentry	120000
P09	Lumu	Kampala	04/05/90	Malaria	30000
P11	Nafula	Busia	05/11/89	Tuberculosis	20000
P15	Waiswa	Jinja	10/11/78	Malaria	60000

(a) Create a database called Medical details. ***(01 mark)***

(b) Design a table with appropriate data types in design view called **Patients.** ***(04 marks)***

(c) Enter the given data in the table. ***(02 marks)***

(d) Create a query to display all the details of patients who come from either Jinja or Busia. Save it as Eastern patients. ***(02 marks)***

(e) Create a query to display all the details of the patients who were not diagnosed with malaria. Save it as No Malaria. ***(02 marks)***

(t) If the Government pays 40% of the treatment fee for all patients, create a query to calculate discounted fee. Put only F name, **DoB,. Diagnosis and Treat fee on the display. Save it as Discounted fee.** ***(03 marks)***

(g) Create a report to display the information in the discounted fee query. ***(03 marks)***

(h) Create a form from discounted fee query showing all details and save it as Patients' form. ***(02 marks)***

(i) Print all your work. ***(01 mark)***

END

SAMPLE QUESTION PAPER

S8505/2

Subsidiary Information

and Communication

Technology

PRACTICAL PAPER

Paper 2

***Nov./ Dec.* 2013**

2 hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Advanced Certificate of Education

SUBSIDIARY ICT

PRACTICAL

Paper 2

2 hours

LSTRUCT1ONS TO CANDIDATES:

The **paper** *is made up of* five *equally weighted questions.*

Answer any **three** *questions in this paper.*

An additional questions answered will **not** *be marked.*

Each candidate is provided with a blank **Compact Disc Rewritable (C***D-RW) or a* flash disk.

Candidates should continuously save ***their*** *work.*

Each candidate **must** *produce a* hard copy *for each of their work to accompany the Compact Disc or flash disk.*

SAMPLE QUESTION PAPER

Answer** any* **three** ***(3) questions

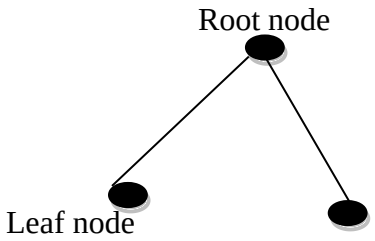
1 (a) Type the document **Shown** below exactly as it appears using a word processor program. Save the document as trees. ***(10 marks)***

BINARY TREES

Introduction

The term "tree" is used in compute science to denote a particular type of abstract data structure. Trees contain data in structures ca led nodes, which are in turn linked to other nodes in the tree. Every tree has a primary node called a root, from which all other branch nodes in t:1e tree descends. In continuance with the botanical naming system, the nodes that have no descendants are

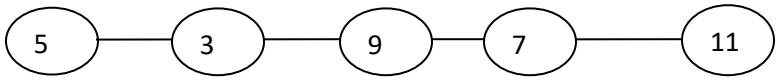
called leaf nodes.



Why should you use trees?

Primarily, trees are useful for organising data in a manner that makes it

efficient to retrieve it. To illustrate his, is a picture of a collection of data organized in a linked list structure.



A Binary tree is made up of nodes that can have at most two

offspring ***(children).*** The **root** node is the node that is not a child of any other node, and is found at the top **(** f the tree structure. **A** node with no

children is referred **to as a leaf node** . Nodes that are not root nodes or leaf nodes are often

referred to as non-leaf nodes.

(b) Copy your document to the next page ***(01 mark)***

(c) Apply styles and formatting on the copied document as follows:

i) The body text to be
- Normal 12 points.
- Comic san Ms
- Justified. ***(03 marks)***

(ii) Change the color of the whole body text to blue ***(01 mark)***

(d) Insert headers and footers. The header should he "your name" while the footer should be "your personal number." ***(02 marks)***

(e) Insert page numbers at the top centre of the document. ***(01 mark)***

(f) Format the second paragraph into two columns. ***(01mark)***

(g) Save a Copy of the document in your folder and print a copy. ***(01 mark)***

2. You have been selected by your organization to represent them at an Agricultural Expo. You are required to make a presentation on an agricultural concept which had died out, but your organization is trying to revive.

Tasks required:

(a) Create a 2-slide presentation and save it as Coop societies 1. ***(01 mark)***

(i) Slide I

- Use a blank slide layout
- Using word art of your choice, type the text below:- ***(01 mark)***

Cooperative Societies The Fallen Glory of Uganda's Agricultural Sector.

- Format it so that it occupies a big proportion of **the** slide ***(01mark)***

(ii) Slide II

- Slide Title — Benefits of Cooperative Societies. to farmers.
- Slide text is shown below

In the past. cooperative societies for farmers used to provide the following services:-
- Collective storage facilities for the farmers' produce.
- Bought the farmers' produce at better rates than those in the
- Supplied seeds and other 1rm equipment at subsidized rates.
- Organized Agricultural sensiti7ation seminars and training workshops
- Visited individual farmers and advised on agricultural challenges were facing.

(02 mark)

(iii) Save changes and close the file. ***(01 mark)***

(b) Create a 3-slide presentation and save it as Coop Societies 2. ***(01 mark)***

(i) **Slide I: Will be** a title slide.

- Include a footer of your flame and personal number on all sides. ***(01mark)***
- Using word art of your choice type the text below. ***(01 mark)***

NAKYESA COOPERATIVE SOCIETY
The Answer to all Nakyesa Farmers
Subscription Fees: 15,000

Insert 2 different the relevant Clip art images. Resize them and place them appropriately

(02 marks)

(ii) **Slide II**

- Slide Title-Services offered to members
- Slide Text — write down any 2 benefits of cooperative Societies to farmers.

(01 mark)

- Type the text "And More.. .
- Highlight the text And More and insert a hyperlink to the file **Coop Societies 1**

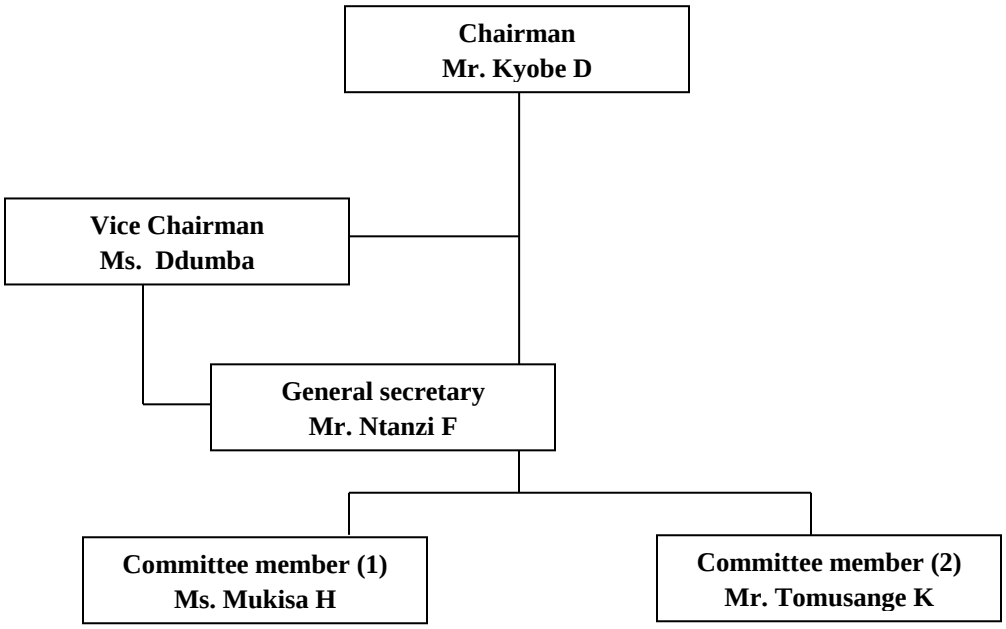
(02 marks)

(iii) Slide III

• Slide title — The society's management

• Use the hierarchy model to create a Management Chart like the one below.

(03 *marks)*



(iv) Apply a slide transition to all the slides in Coop Societies 2. ***(02 marks)***

(c) Save changes and print all your slides. ***(01mark)***

3. The table below shows part of a sales schedule for a distributor of Diary products:

(a) Load a suitable Spreadsheet package and generate a similar sales schedule.

• Ensure that you maintain the cell addresses. ***(05 marks)***

	A	B	C	D	E	F	G
1	Product	Unit cost					
2	Jesa (Skimmed)	2100					
3	Jesa (Big)	1900					
4	Jesa (small)	950					
5	Fresh Diary (Big)	1750					
6		Quantities sold					
7	Product Name	Mon	Tues	Wed	TOTAL	Total sales per Product	
8	Jesa (skimmed)	12	65	40			
9	Jesa (Big)	120	140	140			
10	Jesa (Small)	230	200	300			
11	Fresh diary (Big)	24	35	54			
12							

(b) Use appropriate formulae to calculate:

• Total quantities sold for each product. ***(02 marks)***

• Total sales for each product. ***(02 marks)***

(c) **(i)** Using product names and quantities sold for Mon, Tues and **Wed,** construct a Clustard Column Chart and place **it** on sheet 2. ***(04 marks)***

(ii) Give your chart appropriate titles. ***(03 marks)***

(d) Insert a header of your name and personal number. ***(01 mark)***

(e) Rename Worksheet I — sales data and worksheet 2-sales **Chart.** ***(02 marks)***

(f) Save changes to your worksheets and **make a** print out of your work. ***(01 mark)***

4. DATA BA SE MANAGEMENT SYSTEMS

(a) Load a Database management software and create a database called **HAMZAN COIN.**

(01 mark)

(b) Design a data table basing on the guidelines given in the table below and save the table as **CAR TABLE 1** ***(05 marks)***

Name of the field	Properties of the field	Field description
(i) Brand name	- will contain only alphabetic characters - must not exceed 15	Brand name of the car.
(ii) Manufacturer name	- will contain only alphabetic characters - must not exceed 15	Name of manufacturing company
(iii) Car ID	-A unique identification number - it comprises only of 5 characters	Unique number assigned to the car
(iv) Body colour	-The field should be set up to enable databases users choose from one of these colours (**Red, Army green, Silver grey, White $ Blue**)	Colour of the body of the car
(v) 4 wheel drive	This field will have Boolean data entries -**Yes** for those which are 4-wheel drive cars and **No** for those that are not	Whether the car is a 4-wheel drive or not
(vi) Date out	-The field will have entries in form of dates	The date when the car left the depot
(vii) Customer name	- Will contain only alphabetic characters - Must not exceed 25	Name of the customer who bought the car

(c) (i) Create a Form for the above table showing all the fields. ***(03 marks)***

(ii) Include a form header *of* 2 lines (one below the other) reading as follows

Line 1 **HAMZAN CAR DEPOT** Line 2 **Car Details Form**

(01 mark)

(d) Enter the records below using the form which you have created in (c) above. ***(04 marks)***

Brand name	**Manufacturer name**	**Car ID**	**Body colour**	**4 wheel drive**	**Date out**	**Client name**
NADIA	TOYOTA	HZO1O	WHITE	YES	03/06/2010	KAN SHREE
DATSUN	NISSAN	HZOO2	BLUE	NO	06/04/2011	ODONG TOM
PATROL	NISSAN	HZO13	SILVER GREY	YES	04/06/2012	GEERA TITIANA
HILUX	TOYOTA	HZOO1	ARMY GREEN	NO	01/04/2010	MUG1SHA HOPE
HONDA	HONDA	HZOO4	RED	NO	05/08/2010	LEMA SHEM
PRADO	TOYOTA	HZO1 1	ARMY GREEN	YES	14/09/2011	DDUMBA PAUL

(e) (i) Create a report for the table and save it as **TABLE 1 REPORT**

(ii) Group the records according to Manufacturer name. ***(02 marks)***

(f) Include a report footer of your name and personal number. ***(01 mark)***

(g) Create a Query showing all fields for those cars manufactured by **TOYOTA** and they are 4 wheel drive cars and save it as **Toyota Cars**. ***(02 marks)***

(h) Print your work. ***(01 mark)***

5. Using a suitable publishing software, design eight identical business cards tiled on A4 page size, 3.5" width and 2" height. **(06 marks)**

(a) The cards' layout and spacing is as follows;

(i) left and right margin should he 0.5" ***(01 mark)***

(ii) top and bottom margins 0.7" ***(01 mark)***

(ii) the vertical and horizontal gap between cards 0.6" ***(01 mark)***

(b) The details of the card are:

(i) A logo of the company at the left hand side of the card. Provide the logo. **(03 *marks)***

(ii) A company name of your choice. ***(01 mark)***

(iii) Job title. e.g Managing Director. ***(01 mark)***

(iv) Your name e.g Aishu Kainembabazi. ***(01 mark)***

(v) Contact address, phone and e-mail. ***(01 mark)***

(c) Include crop marks around each card. ***(02 marks)***

(d) Save the publication as 'rny business cards' ***(01 mark)***

(e) Print your work. ***(01 mark)***

END

COMPUTER PRACTICAL FOR ALL LEVELS (O&A – LEVEL, TERTIARY & INSTITUTIONS, AND HIGHER INSTITUTIONS OF LEARNING/ UNIVERSITY LEVEL)

CHAPTER ONE

MICROSOFT WORD PROCESSING

Question one

i) Enter the following Text in a word processor and save it as "environment". **(6 *marks)***

HOW TO HELP SAVE THE ENVIRONMENT

Things like hectic climate change, polluted air, acid rain, depletion of the ozone layer, global warming, and an increase in poverty prove that the way we use things is ineffective. Imagine this. One day you come out from your house and all you see is big puffs of black smoke and no trees! All you hear are cars and no birds' All you smell is gasoline and no flowers! What kind of life is that?

All we need to do to reduce the problem is simply to be less wasteful. Here are some ideas on how to help everyone!

Stick to a routine of shutting off as many electrical appliances as possible when you leave a room.

Use renewable energy sources.

Use rechargeable batteries instead of disposable batteries

Use only as much toilet paper as you need, and don't use a mile of it for one little wiping. .- Invest in a good bicycle and helmet Use them when your destination is within 5- 10 miles of home.

Avoid using plastic whenever you can: it is a poison of the earth (things like disposable plastic cups, plastic bags, nonsense plastic items you don't need). Use reusable cloth pads, or a menstrual cup

Stop reading newspapers if you can look up the news on your computer, it takes up less energy than cutting down the trees, making the paper, and transporting it to your house.

ii) Set the page size to A5 ***(1 mark)***

iii) Set the top and bottom margins to 0.8 inches and the left and right margins to 0.7 inches **(2 *marks)***

iv) Place your name left aligned, your centre number centre aligned and your candidate number right aligned in the header. Place an automated page number right aligned in the footer. **(2 *marks)***

v) Make the following changes to the text:

a. Set the text to a Georgia font. ***(I mark)***

b. Set the text to 1.5 paragraph spacing. ***(1 mark)***

c. Make the text fully justified. ***(1 mark)***
d. Set the text size to 13 point. ***(1 mark)***
e. Make the heading centre aligned and bold. ***(1 mark)***
f. Insert a page break after the first two paragraphs. (Before TM All we need to do ***(1 mark)***
vi) Import a graphic image showing a tree (from clip art, or elsewhere), and place this in the top left corner of page 2. ***(1m ark)***
(vii) Insert a water mark with the text "Lets save the environment'" in the background. ***(1 mark)***
(viii) Print your work. ***(1 mark)***

Question two

By using word processer type the following as require Modern computers have very large processing power and storage capacity. They are also cheap and available in such a variety that every other user can be able to purchase one. The differences that used to exist in the past between various computer systems such as mainframes or workstations and personal computers are no longer recognizable. Processing issues: The most important function of any computer is processing. Micro processor technology has jumped to reach the current nearly unbelievable 3.6 GHz just within the last 10 years. Storage Issues: The need for storing large amounts of data has arisen with the expansion of information technology in business. The drive towards convenience and portability of data has become the main issue of concern for the modern business man/woman.

Table 1 below shows the storage media, their capacities and current market prices.

Table 1: Storage media, capacity and price -

No	MEDIUM	CAPACITY	PRICE
1	CD-ROM R/W	700MB	25,000/=
2	Hard disks	80GB	100,000/=
3	Flask disk	2GB	35,000/=
4	DVDs	4GB	50,000/=
5	External Hard disk	250GB	200,000/=

FURTHERR EQUIRED:

(b) Format all text as follows:
i. Font-Bodoni MT, size-10, line spacing-i .5 lines, color— Dark Blue. ***(3 marks)***
ii. Set the before and after paragraph spacing to l2pt. ***(1 mark)***
iii. The top most heading should be of size — 18, centered and double underlined, ***(3marks)***
iv. Fill the first row and column in the table with a yellow background. ***(1 mark)***
(c) Insert the following features into your document:
i. A right-aligned header of your name and a footer of your Class and Stream. **(2 *marks)***
ii. A relevant clip art at the end of the text before the table. **(1 *marks)***
iii. A footnote explaining what GHz stands for in full. **(2 *marks)***
(d) Save your work as 'Processing issues" and obtain a hardcopy. ***(2marks)***

TOTAL SCORE: ***(20 marks)***

Question three

Using Microsoft word do the following. The following data relate to the topic "Water". Use it to attempt the following instructions.

Water:

Water is a common chemical substance that is essential for the survival of all known forms of life. In typical usage, water refers only to its liquid form or state, but the substance also has a solid state, ice, and a gaseous state, water vapor. About 1 .460 pentatonnes (Pt) of water covers 71% of the Earth's surface, mostly in oceans and other large water bodies, with 1.6% of water below ground in aquifers and 0,001% in the air as vapor, clouds (formed of solid and liquid water

Water can dissolve many different substances, giving it different tastes and odors. In fact, humans and other animals have developed senses to be able to evaluate the portability of water: animals generally dislike the taste of salty sea water and the putrid swamps and favor the purer water of a mountain spring or aquifer. Humans also tend to prefer cold water rather than lukewarm, as cold water is likely to contain fewer microbes. The taste advertised in spring water or mineral water derives from the minerals dissolved in it, as pure H20 is tasteless. As such, purity in spring and mineral water refers to purity from toxins, pollutants, and microbes. Water can appear in three phases Water takes many different forms on Earth water vapor and clouds in the sky; seawater and rarely icebergs in the ocean: glaciers and rivers in the mountains; and aquifers in the ground.

Tasks:

a) Using a suitable word processor typeset the above text as it is and save as 'water"

b) Copy text on page one and paste it on page five of your document. While on this page, cut paragraph three and paste it after paragraph one and before paragraph

c) On page five, justify text alignment and save as 'water2"

d) Bold, centre and double underscore the heading "Water on page five.

e) Set you document ready for printing by:

- Inserting page numbers beginning from page two.

- Creating: header, your name; header your class, stream and house of residence.

Question four

Using Microsoft word, type the passage below as it is and answers the questions that follow. "UNESCO hails Uganda" IT he Director General of the Unite Nations Educational scientific and cultural Organization (UNESCO) KIOCHIRO Matsuura commended Uganda's efforts in emphasizing science Education Matsuura, who is here for a two-day visit, said on his arrival at Entebbe- Airport yesterday that the UN agency was enjoying a strong bilateral relationship with Uganda I 'We appreciate Uganda's efforts embracing science and cultural education as part of national development This being my first rift r:iat visit here, I hope strengthen the ties between Uganda and UNESCO' Matsuura said.

He emphasized that Uganda's cultural and scientific education statistics which stand as shown in the table below were encouraging by world standards. These statistics were carried out in the year 2000, 2001 2002, 2004 for both cultural and science education.

Cultural education:
Males *(%)* 70, 50, 28, 40, and 80
Females *(%)* 60,30,96,48 and 78
Science education:
Males (%) 30,78,90,20 and 60
Females (%) 56,89,76,59 and 90

	Males		Females	
Cultural education	year	%	Year	%
Science education	Year	%	Year	%

(i) Set the font size to 13 and double space the document ***(02mark)***
(ii) Copy the document and paste it on the next page. ***(02mark)***
(iii) Set the title UNESCO hails Uganda to font size 14 and bolded. ***(02mark)***
(iv) Set the margins to (1 .5) and (1.3 right) then bottom and top **(1 .2)**. ***(02mark)***

(v) Set the document body text to' Anal Narrow" ***(02mark)***
(vi) Insert the header as "Diploma" and in italics ***(02mark)***
(vii) Set the whole document to justify and font color, red. ***(02mark)***
(viii) Number pages in uppercase alphabet. ***(02mark)***
(ix) Save your work in the diskette provided in your surname and index no. ***(02m ark)***
(x) If the statistics given in percentages correspond to the years shown, enter the percentages in the table appropriately. ***(02mark)***

Question five

[i] Type the text below as it is. Using a word processing program: [8marks]

CHOOSING WORD PROCESSING SOFTWARE

Word processing is using the computer to enter, store, manipulate, and print text in letters, reports, and books and so on. Once you have used word processing. you will probably wonder (like a million others before you) how in the world you ever survived without it.

As more word processing packages come on the market, choosing the right software can become very confusing. Nevertheless, there is probably a word processing package that will serve your needs. As you begin looking, ask yourself these questions:

I. What types of documents am I now producing?
planning to produce?
II. What types of features do I need?
want?

Document types can range from simple letters and memos to proposals, reports, legal documents, books, newsletters, scientific papers, form letters, and so on. The point is, match the features you, need with the features in the software package. For example, if you write articles that require references, you will need the footnoting feature; if you develop a newsletter, having the multicolumn layout feature would be handy; if scientific notation is needed, you will want superscripts (X2+Y2) and subscripts (A21); and if you send "personalized" form letters the mail-merge feature is a necessity.

A number of add-on programs are available to enhance the functionality of word processing packages. These include:

On-line thesaurus
Spelling checker
Grammar checker
Style checker
Idea processor (outliner)

What you can do with word processing is limited only by your imagination and willingness to learn the system. Good luck in your Computer-assisted writing adventures-now and in the future!

(ii) Insert in the header the word "Tips" on the left hand corner and "Word Processing" on the right hand corner. **[1]**

(iii) Format the heading to font size 22-point, underline and bold. **[1]**

(iv) Block indent paragraph one by 1 inch in the right and left margins. **[1]**
(v) In the paragraph starting with "Document" Bold the second sentence. **[1]**
(vi) Make 2 the superscript of X and Y in the expression (X2+Y2) and 21 the subscript of A in the expression (A21). **[2]**
(vii) Insert bullets on the list of functionality of word processing packages given in text. **[1]**
(viii) Insert a footnote of your name on the left and page number on the right hand corner. **[2]**
(ix) Save the work as *choosing software doc* in a folder called *XXX* EXAM on the desktop where *XXX* stands for your name. e.g. if you are Kalungi Amos then the folder should be named: *KALUNGI AMOS* EXAM. **[2]**
(x) Print out one page of the document onto the installed printer. **[1]**

Question six

(i) Using any word processor application, type the table as it appears below and save it ***(12 marks)***

<table>
<tr><th>HIRED ITEMS</th><th>STATIONARY</th><th colspan="2">RECEPTION</th><th>GARDENS</th></tr>
<tr><td rowspan="2">200Chairs
12 Tents</td><td>3 reams of paper</td><td colspan="2">200cakes
250 plates ,
200cups</td><td>Red carpets, Arches, Flowers, Lights and other</td></tr>
<tr><td>l2Manilapapers</td><td colspan="2" rowspan="3"></td><td rowspan="4"></td></tr>
<tr><td></td></tr>
<tr><td>Music systems</td><td>12 office glue</td></tr>
<tr><td></td><td>I0 writing papers</td><td colspan="2">Drinks</td></tr>
<tr><td>Public address systems</td><td>3 packets of markers</td><td></td><td>3 boxes of mineral water</td><td></td></tr>
<tr><td></td><td>Masking tapes</td><td colspan="2"></td><td></td></tr>
<tr><td></td><td colspan="3">Venue expenses</td><td></td></tr>
<tr><td></td><td>Rent</td><td colspan="2">Other costs</td><td></td></tr>
<tr><td>Miscellaneous</td><td colspan="3">Fuel and travel costs</td><td></td></tr>
</table>

(ii) Copy the table, insert a row above the first row and merge all the cells to form one row. ***(03 marks)***

(iii) In it type the Heading, below and format it as it is. ***(03* marks)**

LAUNCHING CEREMONY FOR BAMU UNITED GROUP **PROPOSED ITEMS**

(iv) Give the table a boundary of 3D style. **(03 *marks)***
(v) Save your work as UA proposed budget" ***(01 mark)***

CHAPTER TWO:

PRACTICALS ON SPREADSHEETS (MICROSOFT EXCEL)

QUESTION ONE

Information below shows rainfall distribution for Jinja District for the years 1995 — 2005. Use it to attempt the following instructions:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1995	9.5	53.5	188.5	251.2	148.9	56.4	102.9	21.8	170.3	197.9	119.0	30.0
1996	131.0	107.6	238.7	200.2	154.5	171.0	87.5	116.5	108.1	59.6	170.8	17.9
1997	106.7	5.4	80.4	194.6	87.6	38.8		72.7	34.9	191.4	290.8	259.3
1998	160.3	91.1	238.8	189.4	154.7	41.6	18.2	75.0	54.0	74.4	95.2	35.2
1999	138.7	27.2	246.3	237.4	193.2	14.5	43.0	86.3	117.5	111.2	113.6	121.8
2000	31.4	37.0	76.3	133.7	108.7	32.3	28.3	117.7	117.7	111.2	113.6	121.8
2001	90.9	58.3	115.3	165.2	176.2	139.3	48.5	149.6	161.5	218.7	274.9	51.8
2002	89.5	48.7	184.1	419	133.3	8.8	14.0	72.3	55.0	33.5	221.6	147.1
2003	129.1	20.2	118.4	108.9	149.4	163.5	9.8	69.0	70.8	210.8	110.8	144.0
2004	89.8	55.9	91.0	281.4	44.0	12.4	47.1	132.1	175.5	117.8	245.7	126.8
2005	35.5	35.2	112.0	202.2	182.4	31.6	150.8	210.4	100.1	119.0	71.0	9.8

Source: Ministry of Agriculture, Animal Industry and Fisheries (Online)

T asks:

a) Using a spreadsheet program of your choice, tabulate the above information. ***(02mark)***

b) Copy and transpose this data onto sheet2 of your workbook and paste special. ***(02mark)***

c) On sheet2, carry out the following:

Create three columns with headings: minimum, maximum, total and average ***(04mark)***

rainfall totals per month. ***(02mark)***

Hence, determine minimum, maximum, auto sum and average rainfall totals per month. ***(02mark)***

d) Using labels of 1992 and 1998 create a line graph as an object of sheet3 to represent variations in rainfall distribution for the period.

Hint: create a suitable title, legend at the bottom.

Make sure that all months labels are seen in font size 8. ***(02mark)***

Set your chart to rest on an A4 paper size and landscape layout. ***(02mark)***

Insert header: your name, footer, your house. ***(02mark)***

e) Save your workbook as “rainfall”. ***(02mark)***

QUESTION TWO

The information below is driven from MUFTI Limited from some few selected staff The staff include JACKIE, KENT. PAULINE, UNICE, XAVIER. LEONALD, SONNY.

IC HRISTINE. PHILIPER and INNOCENT. They earn the following amount as basic salary respectively. 660000, 760000,870000. 580000. 600000, 610000, 630000, 640000, 650000 and 555000.

(I) Enter the above information using Microsoft Excel. ***(02mark)***
(ii) Lunch allowances for all employees are 22% of their basic pay. ***(02mark)***
(iii) Housing allowances are 62% of lunch allowances. ***(02mark)***
(iv) All employees are paid transport allowances of 59,000 ***(02mark)***
(v) Compute the employees' gross pay. ***(02mark)***
(vi) PAYE is 2.5% of basic salary. ***(02mark)***
(vii) National social security fund is calculated at 18% of gross pay. ***(02mark)***
(viii) Compute the employees' net pay. ***(02mark)***
(ix) Plot a line graph of net pay against basic salary in worksheet 2. ***(02mark)***
Save your work in your name and registration number on the desktop ***(02mark)***

Question three

RAPID ENTERPRISES has 10 employees: Kawana, Mirundi, Opito. Barnabas. Winfred. Rosette, Francois, Xavier, Rodney and Wilhrod. who are given remuneration (Basic pay) of Ushs.300,000. Ushs.400,000, Ushs.250,000, Ushs.320.000, Ushs.200,000, Ushs.280,000. Ushs.125,000, Ushs.360,000, Ushs.4 15,000 and Ushs.4 16.000 respectively. You are approached by RAPID ENTERPRISES to compute Housing Allowances. Medical allowances, Transport Allowances, Gross pay, Taxable Amount. PAVE, NSSF and Net pay for each of her employees as below:

i) Housing for all employees is 12% of Basic pay.
ii) Medical allowances are 5% of housing.
iii) All employees are paid a constant transport fare of Ushs.20.00U plus 1% of Basic pay
iv) Taxable amount is gross pay in excess of Ushs.80,000.
v) PAYE is 5% of taxable amount less than Ushs. I 50.000 and I 0% for taxable amount !rca1er or equal to Ushs. 150.000.
vi) NSSF is 1/8 basic pay.
vii)Net pay is obtained by subtracting all deductions From gross pay.
Required:
(a) Enter the title: RAPID EN'1l:RPRlSIS EMPLOY ILS Financial. RECORDS in row 1 of worksheet 1. merged and centered across columns A *to J.* ***(2 marks)***

(b) Adjust all columns to width 10. and enter the headings in row 2 as follows: Employees' Name.
Housing Allowances, Medical *Allowances.* Transport Allowances. Gross pay. 'Taxable Amount, PAYE, NSSF and Net pay. Use wrap-text control so that text is not truncated. ***(4 marks)***

(c) Enter the employees' names and respective basic pay in columns A and B. ***(2 marks)***

(d) Use appropriate formulae and functions to compute the respective values as specified above. ***(2 marks)***

(d) Use functions in **rows** 13, 14. 15 and 16 to obtain the Total. Average. Highest, and Lowest, of the values in columns B to J. ***(4 marks)***

(e) Create a clustered bar graph with a three dimensional visual effect. with blue labels to represent the Pay as you earn tax payable and Net amount receivable by each employee. Place it on sheet3. ***(2 marks)***

(i) Insert your Name in the right section of the footer of the graph in (e) above. ***(2 marks)***

(g) Save your work as *records for RAPID.xls* in the folder renamed S3BOT1, XXX, where XXX is your full name, in logical drive D on your computer. ***(2 marks)***

Question four

From the payroll of KAMPALA COMPUTER ENTERPRISES, for the month, of February, enter the following data in a worksheet and save as 'KLACOMPUTERENT. **(5 marks)**

EMPLOYEE NAME	AGE	POSITION	AUG WAGES	SEP - WAGES	SEP PAYE	SEP NSSF	SEP NET PAY
Amuges Patrick	30	General Manager	416,0001=				
Pamela_Phindi -	33	Chief Accountant	380,000/				
Mukalele Wycliffe	25	Training Manager	400,000/::				
Recknock Catherine	27	Marketing Manager	300,000/::				
Irene Ayebare	25	Production Manager	250,000/::				
Asiimwe Joan	24	Advertising Manager	200,000/				
Nsiita Jacquiline	26	Public Relations Officer	188500/=				
TOTALS							

(b) Due to inflation, the management increased the wages of employees who earn 300,000 and below by 10% and for those who earn above 300.000 by 5% for the month of September. Using an appropriate function, compute the new wage for each employee in the month of September. **(4 *marks)***

(c) Calculate the Pay As You Earn (PAYE) tax given that its rate is 15% of the Gross wage. ***(4marks)***

(d) NSSF is calculated at 2% of the Gross wage. Calculate the NSSF savings for September per employee. ***(2 marks)***

(e) Use a suitable formula to generate the NET PAY that will be available for each employee. ***(4 marks)***

(f) In the TOTALS row, compute the Totals for all the columns having currencies. ***(2 marks)***

(g) Add your name and index number as a right aligned footer. ***(2 marks)***

(h) Print your work. ***(2 mark)***

Question five

Enter the data in the table below in a spreadsheet application starting from cell Al and save as PLEResults1' **(5 *marks)***

INDEX NUMBER	SURNAME	FIRSTNAME	DOB	ENG	SST	MTC	SCI
JC00I	Musoke	Alfred	03/02/2000	46	78	73	76
JC002	Oto	James	04/06/2000	85	75	64	73
JC003	Magoola	Michael	17/05/2000	48	68	75	75
JC004	Busingye	Anne	23/0412000	57	46	76	72
JC005	Lokeris	Ali	10/12/2000	84	85	73	76
JC006	Kafifi	Sarah	16/09/2000	76	94	72	49
JC007	Nine	Sabiti	05/08/2000	49	58	73	76
JC008	Tenywa	Alex	09/01/2000	44	28	76	72
JC009	Mirundi	Joel	18/01/2001	78	68	76	72
JC010	Muhindo	Rodgers	25/11/2000	46	76	73	76
JC011	Nakakinda	Alice	18/05/2000	48	58	50	64
JC012	Lubaale	Musa	17/08/2001	48	38	48	66
JC013	Were	Denis	12/05/2000	54	40	66	36
JC014	pysa	Gerald	19/03/2001	36	50	38	44
JC015	Atukwatse	Bill	15/04/2000	46	66	50	44
JC016	julenzi	Samuel	19/07/2000	38	54	44	46
JC017	Kiromi	Oliva	23/07/2000	50	44	48	62
JC018	Kanku	Ahmed	19/1 2/2000	54	50	44	76
JC019	Dembe	Kevin	16/07/2000	60	48	58	50
JC020	Yimula	Saul	19/08/2000	48	56	76	68

(b) Rename the worksheet to P72011 and change its sheet tab color to red. **(2 *marks)***

(C) Add the TOTAL, AVERAGE, and POSITION columns and use suitable functions to calculate the total mark, average mark and position in class: for each student. ***(7 marks)***

(d) Add a Comment Column to and use the IF function to automatically generate the comment

"PASS" for the students with average 55 and above and 'FAIL" for students with average below 55. **(2 *marks)***

(e) Apply 'all borders' outline to all cells with data. **(1 *mark)***

(f) Setup your page to landscape orientation and add a footer of your name and index number. **(2 *marks)***

(f) Print your work. **(1 *mark)***

QUESTION SIX

Enter the table below in a spreadsheet application. ***(02 marks)***

INCOME AND EXPENDITURE ESTIMATE FOR THE YEAR 2010/2011

CODE	**ITEM**	**JAN**	**FEB**	**MAR**	**TOTAL**
INCOME					
INC 01	Sales	125,000	……..	……..	
INC 02	services	50,000	……..	……..	
INC 03	Others	70,000	……..	……..	
TOTAL INC.					
EXP 01	Salaries	50,000	……..	……..	
EXP 02	Wages	30,000			
EXP 03	Travel	10,000	10,000	10,000	
EXP 04	Purchases	60,000	……..	……..	
TOTAL EXP					

(ii) Using the information below, complete the table above by the help of a spreadsheet formula.

- Revenue from sales is expected to increase by 10% every month. ***(01 mark)***
- Revenue from Services and others is supposed to increase by 2% every month ***(02 marks)***
- Salaries and wages should increase by 50% only in Feb and remain constant in Mar
- Purchases should decrease by 3% per month ***(01 mark)***
- Create a new row Average Income and calculate the average income in every month. ***(03 marks)***
- Calculate the Total Revenue and Expenditure for each month ***(02marks)***

(c) Calculate

(i) Overall Revenue and Overall expenditure for each month ***(02 marks)***

i) the profit earned for each month **(02 marks)**

(ii) The overall profit earned by the company **(02 marks)**

(iii) Save your work as "My accounts" **(01 mark)**

CHAPTER THREE:

DATABASES (MICROSOFT ACCESS)

QUESTION ONE

The table below shows records of a District Health Centre in terms of: Registration Number of the Patients, name of the patient, Sex. Date Admitted, Ward allocated and Diagnosis results of the Patient.

Reo. No	Name	SEX	DATE IN	DIAGNOSIS	WARD
1000	NansimbeJoanita	F	14 May 02	Malaria	2A
1001	Kikomeko Juliet	F	14 May O2	Pregnant	5B
1002	Wandera Noah	M	15 June 02	Pneumonia	4C
1003	SuunaAbdu	M	17 June02	TB	4C
1004	Kiwoola Sheila	F	20 Jun 02	Malaria	2A
1005	Lubega Fuma	F	14May02	Pregnant	5B
1006	Acheng Florence	F	14Apr02	Malaria	2A
1007	Mugisha John	M	22May02	Cholera	2B
1008	Lubega Boaz	M	17 Jun 02	Bronchitis	2C
1009	Nyacheng Jovana	M	13 Aug 02	Malaria	2A

(a) Using any Data base management program create a table called "In patients" with the following fields: Reg. No, Name, Sex Date In, Diagnosis and Ward. Use appropriate data type ***(10 marks)***

(b) Using a data sheet, enter the data above in the table you have created ***(3 marks)***

(c) Create a *Query* for FEMALE patients who were allocated WARD 5B, **(5 *masks)***

(d) Create a *report* showing MALE patients who were diagnosed with MALARIA and allocated WARD 2A. ***(5 marks)***

(e) Create a *Query* for the patients whose first names begin with F and J, then name it "FJ' together with their Diagnosis and Wards ***(5 marks)***

Save your work as *"In Patient*s" and make a print out ***(2 marks)***

question two

A database manager of Talinamugongo Primary School provides your records for 20 students in primary seven for the year ended 2007.

Table one: Basic Information

StudentNumber	FirstName	Otername	Sex	Fees paid
TPSIOO1	David	Katumba	M	100,000
TPSIOO2	Robert	Mayuna	M	150,000
TPSIOO3	Susan	Nampiima	F	300,000
TPS/004	Ivan	Kasada	M	78,000
TPSIOO5	Samuel	Muawe	M	100,000
TPSIOO6	Grace	Kasoa	F	65,000
TPS/007	Martha	Walusa	F	34,000
TPSIOO8	Sophia	Namuyomba	F	100,000
TPS/OO9	Gorret	Namatovu	F	120,0000
TPS/O1O	Annette	Kampi	F	400,000
TPS/O1 1	Chri	Rubaa	M	30,000
TPS/O12	Charles	Mwaka	M	234,000
TPSIO13	Jana Francis	Adeka	F	400,000
TPSIOI4	Francis able	Obbo	M	340,000
TPS/O1 5	Harriet	Asio	F	270,000
TPS/016	jydia	Nalubwama	F	200,000
TPS/017	Doroty	Kaoay	F	182,0000
TPS/018	Anes	Misera	F	173,450
TPS/019	Michael	Mawalo	M	200,000
TPS/020	±bieiIe	Naibwoila	F	400,000

Table two: Other Information

StudentN umber	House information	Discipline
TPSIOO1	Yes	Good
TPS/002	Yes	Good
TPS/003	No	Average
TPS/004	Good	Not Good
TPS/005	Yes	Average
TPS/006	No	Good
TPS/007	No	Not Good
TPS/008	No	Average
TPS/009	Yes	Not ood

TPS/010	No	Good
TPS/011	No	Good
TPS/012	Yes	Good
TPS/013	No	Good
TPS/014	No	Good
TPS/015	No	Good
TPS/016	Yes	Not Good
TPS/017	No	Average
TPS/018	No	Not Good
TPS/019	Yes	Good
TPS/020	No	Good

Tasks:

a) Create a database with a file name "Talinamugongo" using a database application program of your choice. ***(4 marks)***

b) Create two tables using table headings and their file names. **(2 marks)**

C) Create primary keys for the tables using field name of "StudentNumber'. ***(4 marks)***

d) Create a one — to - one table relationship linking the "StudentNumber" ***(2 marks)***

e) Create a form to enter the above data into the two tables simultaneously. (The form should have a lookup button for sex M and F respectively). ***(2 marks)***

f) Using all field names, create two dynasets that satisfy the following queries:

- Students that have paid fees that is above 70,000 and are disciplined and save as "disciplined" ***(2 marks)***
- Student that have no house information and save as "no information" ***(2 marks)***

g) Using field names of StudentNumber, OtherName, FirstName and Sex, generate a report that contains all this information. ***(2 marks)***

QUESTION THREE

The table below shows books in a library.

DATABASE OF BOOKS IN THE LIBRARY

Code number	**Title**	**Name of Author**	**Paper cover (P), or Hard cover (H)**	**Borrower Number**	**Date of Back**
2043	The Grate Gatsby	F.Scott	P	15234	01 June 08
5284	Jane Austen-A life	C .Tomalin	H	11356	02 June 08
4033	Harry Porter and the Philosopher's stone	J . K. Rowling	H	16582	26 May 08
0549	'Northern Lights	P.Pullman	P	12982	28 May 08

DATABASE OF BOWWOWERS

Borrower Number	**Name Of borrower**	**Address of borrower**	**Borrowers' Phone Number**
113	Tobias Anendra	658 Uhuru High way P.O Box 2809	0772344567
16582	Carlos Moyes	12 Avenue De Lupin P. O.Box 65432	0712417398

Computers are now widely used in libraries. Using a database management systems program:

(a) Create a table of books and enter the data. ***(04 marks)***

(b) Create another table, of borrowers and enter the data. ***(02 marks)***

(c) Sort the records in part (a) in descending order of code numbers. ***(02 marks)***

(d) using fields: code number, title, name of author, paper back or hard back, date due back, create a query showing borrowers number that is a above 12506 using table in 2 (a). ***(04 marks)***

(e) Create a query, showing only books with hard back and the names of the author. The names of the authors should be in ascending order. ***(02 marks)***

(f) Create a relationship between the books' and borrowers' tables. ***(02 marks)***

(g) Put your name and index in the header and the current date and time in the footer of both tables. ***(02 marks)***

(h) Create a report using both tables and name the report as "borrowers" ***(02 marks)***

(i) Save the database as "library database"

QUESTION FOUR

Create a table called 'student status' to store the above data. ***(3 marks)***

(b)Create a form to enter data. Enter 10 sample records foil owing the order in the table below. The amount of money borrowed by a student should not exceed Ushs.2, 000.000 and not below Ushs.500. 000. And the minimum age of the student is not below 16. Your entries should include at least 4 female students from any of the Universities in Uganda you know. The interest rate chargeable is 15%. Repayment period should not exceed 6 years. **(14 marks)**

Reg Number	Name	University	Sex	Age	Date of entry to the University	Amount of approved loan	Amount to be returned	Repayment period.
UG001	**Kizito** John	**KIU**	M	30	15/03/2001	600000	690,000	3

(c)Create a query called LoansOver60k that will filter the students who have been given a loan of more than Ushs.600, 000. **(3 marks)**

(d)Create a report to show the above data and group the students by their respective Universities of study. **(5 marks)**

(e) Add your name and index number as footer to the report in (d) above and print it. **(3 marks)**

(e) Save your database as "USLB-LOANS DATABASE" **(2 marks)**

QUESTION FIVE

The following are details of employees in different ministries in Uganda.

Employee Table

Ep_No	Name	TelNo	Sex	Salary	Job	MinistryNo
E01	Mutebi Peter	0752789678	M	€ 300	Police Officer	M003
E02	Naku Annet	0786587689	F	€ 350	Police Officer	M007
E03 -	Kola Mary	0712634679	F	€ 400	**Teacher**	M003

E04	Kuma Sam	0754843847	M	€ 600	**Doctor**	M002
E05	Nanu Ann	0793474679	F	€ 700	**Web Master**	M005
E06	Dembe Eric	0774845749	**M**	€ 320	**Police officer**	M009
E07	Otai Said	0394754968	**M**	€ 320	**Teacher**	M004
E08	Babirye Alice	0703445645	**F**	€ 450	**Nurse**	M002

Ministry Table

Mirustry No	**Ministry_Name**	**Location**
M001	Minitry of Disaster	Bududa
M002	Ministry of Health	Mulago
M003	Ministry of Education	Wakiso
M004	Ministry of Envnonment	Jinja
M005	Ministry of Ethics	Mukono
M006	Ministry of Labour	Iganga
M007	Ministry of Security	Gulu
M008	Ministryof Gender	Mbarara
M009	Ministry of Finance	Kampala

(i) Create a **database:** UGANDA and add the two tables, choosing primary keys appropriately. **(2 marks)**

(ii) Create a relationship between the two tables. **(2 marks)**

(iii) Enter Data into the Ministry Table. **(2 marks)**

(iv) Create a DATA ENTRY FORM for the Employee Table: hence use it to populate the table. **(2 marks)**

(v) Query female employees in the Ministry of Education. Save the query as FEduc. **(2 marks)**

(vi) Query police officers and the ministries they work for. The query should have all fields available. Save it as POLICE. **(2 marks)**

(vii) Produce a report of queried work in (vi) above with salaries in descending order. Save it as POLICE REPORT **(2 marks)**

(viii) Add your name and index number as footer to the report in (vii) above and print it. **(2 marks)**

Question six

You are required to create a database, JICO COMPUTER CLASS to capture administrative information about students in your computer class with 3 tables as follows:

1. HOUSE TABLE

Fields: (i) Serial No. [Should be in the format HOOXX, where XX are digits]
(ii)House Name [set the suitable maximum field size]
(iii)Number of Students [maximum should be 2 characters]

1 . DISTRICTS TABLE

Fields: (i) Serial No. [Should be in the format DOOXX, where XX are digits]
(ii) District Name [maximum should be 10 characters]

2 . STUDENTS TABLE

Fields: (i) Student ID Number [should be in the form JCXX, where XX and digits].
(ii) Surname [maximum should be 10 characters]
(iii)First name [maximum should be 10 characters]
(iv) Sex [Male/Female]
(v) Date of Birth [Should he in the form Jan.31-2010]
(vi) House [Data base should generate dropdown list from House table]
(vii) Resident?[Yes/No]
(viii) District of Origin Data base should generate dropdown list from [District Table]

(ix) Nationality [maximum should be 10 characters]

FURTHER REQUIRED

a) Design the above tables in view. **(2 marks)**
b) Enter 15 district names in District Table **(2 marks)**
c) Enter all the available house names in your school. In HOUSE TABLE] **(2 marks)**
d) Design a form displaying all the fields in the COMPUTER STUDENTS table **(2 marks)**
e) Use the form to enter records of about 20 students. **(2 marks)**
f) Add the words, "database designed by xxx' where xxx is your first name as the footer of your form. **(2 marks)**
g) Print the form. **(2 marks)**
h) Create a query having the first six fields of the COMPUTER STUDENTS TABLE. and add a calculated field in the table to calculate the ages of the students in terms of years. Call it the AGE query. **(2 marks)**
i) Create a query for each house and save it as [House Name) QUERY. **(2 marks)**
j) Filter out all students with letter A in any of their names and save query as "STUDENTS WITH LETTER A IN NAME". **(2 marks)**

CHAPTER FOUR:
PR ESANTA TIONS (MICROSOFT P0WER POINT)

QUESTION ONE

Mr. Wagoina Alex, the Si teacher has requested you to design for him a presentation that Will au to instruct the class about Computer Generations.

(a) Use your skills to design the six slides as follows: **(3 marks)**

(i) SLIDE ONE: Should include the definition of computer generations, the teacher's name and - automatic current time.

(ii) SLIDE TWO: Characteristics of 1st Generation Computers:

- Very large in size taking up space of several floors.
- They used punched cards and paper tape for input.
- They used magnetic drums for memory.
- Used machine language, the lowest-level programming language.
- Needed very may people to operate due to their huge size.
- They produced a lot of heat and burned out.

(iii) SLIDE THREE: Characteristics of **2nd** Generation computers.
Computers used Transistors for processing.
They reduced in size; could now fit in one room.
Second generation computers used assembly and other high level programming Language such as FORTRAN
They produced less noise but their cost was still very expensive.
The computers could still run only one application program a a time (Multi-tasking was n possible)

(iv) SLIDE FOUR: Characteristics of 3 Generation Computers:

- Computers used Integrated Circuits for processing
- The computers extremely reduced in size — could now fit on desk
- The keyboards and monitors replaced punched cards for input and output.
- Simple programming languages like BASIC were introduced
- Multi-tasking was now possible.

(v) SLIDE FIVE: Characteristics of 4th Generation computers.

> Computers used Microprocessors for processing

> The computer can now fit in your palm and pocket.
> There was development of the mouse and handheld input devices.
> Merging of Telecommunication and Computing Technology.
> Operating systems based on the Graphical User Interface (GUI)

(vi) SLIDE SIX: Characteristics of **5th** Generation computers.

> Computers to have Artificial Intelligence such as Voice recognition.
> Widespread Robotics and expert systems
> More networking containing millions of interconnected 4th Generation computers.
>Molecular computers expected, Composed of millions of DNA strands in plastic tubes.
>Fifth-generation programming languages (5GLs) eg Visual BASIC

(b) Include clip arts where possible. **(4 marks)**
(c) Apply uniform slide transitions and text animations. **(4 marks)**
(d) Add the words, "Designed for Si Class" in the notes area for all slides. **(4 marks)**
(e) Add your name and index number in the header section of the handouts view. **(4 marks)**
(f) Save your work as Computer Generations". **(4 marks)**
(g) Print out a handout with three slides. **(2 marks)**

QUESTION TWO

Your science teacher has asked you to design for him a presentation which is going to aid a lesson on Soil Erosion. Design 4 slides as follows:

Slide 1: This slide should have an automatic date above the title, and the definition of soil erosion: [Soil erosion is the wearing away of the land surface by physical forces such as rainfall, flowing water, wind, ice, t or other natural agents. **(05 marks)**

Slide 2: This slide should have the various types of soil erosion: (i) Rain drop or splash erosion: Caused by to the impact of falling raindrop on the surface of soil (ii) Sheet erosion: It is the fairly uniform removal of soil in thin layers from the land surface, caused by wind. (iii) RiB erosion: A form of water erosion in which very small straight channels are produced. (iv) Gully erosion: A form of water erosion in which gullies are produced by combination of unattended rills. J **(05 marks)**

Slide 3: This slide should have ways of preventing soil erosion: (i) We can prevent soil erosion by planting vegetation, trees, ground cover, shrubs and other plants. (ii) We can prevent soil erosion by Creating windbreaks, which are barrier rows planted along the windward exposure of a plot of land.(iii) We can prevent soil erosion by Growing cover crops on farm land when land is not being used. (iv) We can prevent soil erosion by Applying mulching. (v) We can prevent soil erosion by using contour farming when farming on sloped areas.

Slide 4: Should have a suitable brief summary and conclusion for the lesson.

(i) Add your name as footer on each slide in font Tahoma 26**.** ***(04marks)***

(ii) Apply a suitable slide design and uniform animations. ***(06 marks)***
(iii) Add graphics from the clip art section where possible. ***(04 marks)***

(iv) Save your work as SOIL EROSION. ***(01 mark)***
Print all the four slides scaled to one page.

QUESTION THREE
Cholera is one of the major killer epidemics in Africa. As an informed person. you are required to design a slide show on *Cholera, the cause of demise:*
(a) Create 4 content slides: **(2 marks)**
(i) Content Slide One should elaborate on the causes and spread. **(2 marks)**
(ii) Content Slide Two should focus on the signs and symptoms. **(2 marks)**
(iii) Content Slide Three should the prevention and treatment methods. **(2 marks)**
(iv) Content Slide Four should show an illustration using a suitable clip art picture related to Cholera on the right hand side with related text on the left hand side. **(2 marks)**
(v) Insert a title slide for the presentation, with links to all the above four slides. (vi) Add back, next and home action buttons to link one slide to another. **(2 marks)**
(v) Include your name and index number on each slide as a copyright. **(2 marks)**
(vii) Apply limited animations and slide transitions. **(2 marks)**
(vii) Print the title slide, slide 1, slide three and slide four together as a handout scaled to paper size A4 landscape. **(2 marks)**
(vii) Save your presentation in slide-show format as Cholera show. **(2 marks)**

QUESTION FOUR
As a games prefect, you have been asked to prepare a presentation about *the importance of sports in schools.* In the presentation, you will also show the results of the previous inter-house completions in your school.
(a) Create five slides as follows:
Title slide: Should have suitable title for your presentation. your name and your role in the school.
This slide should also have related graphics (from the clip art section) ***(2 marks)***
Slide two: How can students benefit from participating in sports? ***(2 marks)***
Slide three: Should have a bulleted list of at least ten sporting activities you know. ***(2 marks)***
Slide four: Previous House Competition Results: Should have a column chart showing the number of points that each of the five houses got. ***(2 marks)***
Slide five: Should have a good summary and conclusion for your presentation. ***(2 marks)***
(b) Set the following Master styles: Titles: Dark Blue, right aligned, font: Tahoma bold.
Text styles: Black, Anal Narrow bold. ***(2 marks)***
(c) Apply a suitable slide background, animations and transitions. ***(2 marks)***

(d) Include your name and index number in the header section of the handouts print preview. ***(2mark)***

(e) Print a handout of all slides scaled to one page. ***(2 marks)***

(f) Save your work as 'Sports results'. ***(2 mark)***

QUESTION FIVE

The Electoral Commission is planning a sensitization of the mass upon the forth coming general elections for 2011 The Commission is to hold a competition soon this year and you intend to participate. The following details are provided.

Slide one: Introduction to the general election.

Slide two: Persons eligible to vote.

Slide three: How to validate election registers.

Slide four: How to avoid vote rigging.

Slide five: Conclusion.

Instructions

a) Design a presentation that runs after a single click. ***(05 mark)***

b) Remember to use a uniform background color for the presentation. ***(05 mark)***

c) Apply relevant fonts, graphics and animations. ***(03 mark)***

d) Add your name as a header. ***(05 mark)***

e) Save your presentation as 'electoral commission 2011". ***(02 mark)***

QUESTION SIX

You are going to participate in a computer studies seminar and you have been told to prepare a presentation about the three categories of computers: Analog, digital and hybrid.

In your research session, you get the following notes:

Introduction

Computers can be categorized according to the process they used to represent data.

People communicate through speech by combining words into sentences.

Human speech is analog because it uses continuous (wave form) signals that vary in strength and quality.

Most computers are digital.

Analog computers

Analog Computer is a computing device that uses continuously changing values to represent information

It generally deals with physical variables such as temperature, weight, voltage, pressure, speed. etc.

Examples of Analog computers include: Thermometers, Weighing scale, Voltmeters barometers, Speedometers. etc.

Digital Computers

These are computers that use discrete (discontinuous) values, specially binary digits (0, 1)10

represent data.
The state of being on is represented by 1 and off is represented by 0.
Digital computers are more accurate and work at a very fast rate.
Examples of Digital Computers Include: All Personal computers (PCs) Laptops, Digital Watches, e.t.c

Hybrid Computers

A hybrid computer combines the desirable features of analog and digital computers
A digital computer that accepts analog signals converts them to digital for processing.

Hybrid computers are mainly used for specialized tasks.

Examples of Hybrid computers include: Digital petrol pumps, Digital Speedometers devices used to measure the patients temperature blood pressure In Hospitals' Intensive care units.

Required:

(I) Create a Five slide presentation in which slide one is the title slide, which will have a suitable title, your name and an automatic date. **(5 marks)**

(ii) Use suitable background, slide transitions and text animations. **(5 marks)**

(iii) Include clip arts where possible. **(5 marks)**

(iv) Include your name and index number on all pages except the title slide. **(3 marks)**

(v) Save as *Computer Categones.ppt* and print your work. **(2 marks)**

CHAPTER FIVE:
WEB PUBLISHING (DESIGNING THE WEB)

QUESTION ONE

You have been awarded the contract of designing a website made up of four pages for GULU F.M.. a radio station based in GULU District. The station manager gives you the following information to be included on the website:

Page One: Index Page ***(5 marks)***

a) Should be a homepage with a shared banner with title, RADIO GULU 91.2 F.M" and the station motto *"Your life. Your music. Your Info"*
b) A marquee with words "Welcome to RADIO GULU Online" slightly after the page banner. (Hint: this should not be shared).
C) Provision for a search engine for the website.
d) A good navigation structure with active links to other pages of the website.
e) Message about the radio of about three sentences including
- When the radio station was started (The date it first went on air)
Mission statement of the radio (to develop significant radio signals that will enhance development and social mobilization in Northern District).
- Why the station was established (suggest your own reason but ideal for this station)

Page two: Program Lineup ***(05 marks)***

f) Add a table and think of your own program wit the times at which they are on air. E.g. News, sports, Music countdown, etc.

Page three Photo Gallery ***(05 marks)***

g) Add about 8 well organized photos from the clip art collection to represent how this page will be used.

Page four: Contact us ***(05 marks)***

h) Add on this page in a bulleted format the following contacts: The Telephone Contact (Office), Telephone contact (Studio Line), Physical Location of the radio station,
Postal Address of the station, and a Feedback link which a visitor to the website can follow to send an email.

NB: Assign imaginary corresponding numbers and addresses to the above.

i) Insert your name in the right bottom corner of the print preview. ***(02 marks)***

Print your work. **(04 marks)**

QUESTION TWO

You have been awarded the contract of designing a website made up of four pages for KLA FM radio station. The station manager gives you the following information to be included on the website.

Page One: Index Page **(4 *marks)***

j) Should be a homepage with a page title, "KLA FM'

k) A shared banner with the station logo and motto: *"Your life. Your music. Your Info"*

I) A marquee with words "Welcome to KLA F.M Online" slightly after the page banner. (this should not be shared),

m) Active links to other pages of the site.

n) A Message about the radio including:

- When the radio station was started (The date it first went on air)
- Mission statement of the radio (to develop significant radio signals that will enhance development and social mobilization in Kampala).

Page two: Program Linep ***(05 marks)***

o) Add a table and think of your own programs with the times at which they are on air. E.g. News, sports, Music countdown, e.t.c

Page three: Photo Gallery **(05 *marks)***

p) Add about 8 well organized photos from the clip art collection to represent how this page will be used.

Page four: Contact us **(05 *marks)***

q) Add on this page in a bulleted format:

- Telephone Contact (Office)
- Telephone contact (Studio Line)

f) Add a table and think of your own programs with the times at which they are on air. E.g. News, sports, Music countdown, etc.

Page three: Photo Gallery

• Location of the radio station.

• Postal Address of the station.

• Feedback link (mailto) which a visitor to the website can follow to send an email.

NB: Assign imaginary corresponding numbers and addresses to the above.

r) Insert your name in the right bottom corner (as footer) on each webpage. ***(02 marks)***

s) Print each of the four web pages. ***(03 marks)***

t) Save and Rename your web fo1er as KLA WEBSITE, ***(01 marks)***

QUESTION THREE

Create a home page for your personal information with navigation links to all other pages, personal email address with email hyperlink, and a moving marquee heading: WELCOME TO XXX'S WEBSITE, where *XXX* is your name. [5]

(b) The other four pages should be as follows:

Page I: Bio-Data i.e. Your Name, Photo, Date of Birth, Nationality, District of Origin, Religion, Languages spoken and Marital status. (Don't tabulate) [5]

Page II: Educational Background i.e. A table of schools attended, period of attendance and qualifications acquired since nursery school. [5]

Page III: Responsibilities Held i.e. responsibilities held [5]

Page IV: Hobbies and Special skills pictorial i.e. A photo gallery from the clip art section showing different sporting, leisure, e.t.c. activities that you enjoy [3]

NB: (E) Use appropriate graphics

(ii) Use a uniform theme or [2]

(iii) Save your web folder as XXXEOTWEBSITE in the XXX EXAM folder on the desktop

QUESTION FOUR

A new radio station Mayuge F.M intends to construct a website to include details about the project. You have been awarded the contract of designing a site made up of three pages. The station manager gives you the following information to be included on the project's site.

a) Should be a homepage with a shared banner with the page title, "Mayuge F.M and the station

motto “sustainable development”.

b) A marquee with words “Welcome to Mayuge F.M” slight after the page banner. (Hint: this should not be shared).

c) Message from the station manager of about 150 words.

d) Provision for searches and active links to other pages of the site.

e) A background picture of a house (Add this from the clip art gallery).

f) Light blue background.

Page two: About Us

a) Include information to the audience that recognises the following facts:

- Location of the radio station (Mayuge Town Council, opposite district headquarters).
- Mission statement of the radio (to develop significant radio signals that will enhance development and social mobilisation).

Why the station was established (suggest your own but ideal for this station — list about seven reasons).

- E-mail contact of (admin@mayuge.fm)

Page three: Photo Gallery

- Leave space for a photo gallery.
- Add about 14 photos from the clip art collection to represent how this page will be used.

QUESTION FIVE

A new company that is to commence production of beverages located in Jinja, has contacted you to design a website containing the following pages:

Page one: Home

Should contain, page banner that is shared, background of the company, and a search engine.

Page two: About us

Should contain products produced, benefits to the community and a link for FAQ

Page three: Contact

Company contact is:

Talina Beverages Ltd,

P.O. Box 20, Jinja

Tel: 0772 350408

Add a list of seven contacts of your own for the following posts: (Hint: provide hypothetical telephone numbers).

Manager
Chief accountant.
Security officer.
Senior driver.
Productions manager
Sales manager.
Marketing and strategic Planning unit.

Task:

a) Using a web authoring software program of your choice, prepare a fast loading website for the company and save the index page as "Talina". **(5 marks)**

b) Create active hyperlinks to lead site visitors to different pages of the site. **(5 marks)**

C) Create a shared boarder for the hyperlinks and company banner. **(5 marks)**

d) For each of the above pages one and two respectively compose text of about 50 words for each sub section of item to consider for the examination. **(3 marks)**

e) Use relevant graphics and simple background for the site. **(2 marks)**

QUESTION *SIX*

i) You are the publicity secretary for your School's wild life club and your club members ask you to create a website for the club. **(10 marks)**

In your planning session, **YOU** decide to include the following pages to the website:

1. Home page:

• Should have brief welcome message

• Objectives of the club

2. Club Executive:

• Should have a table with at least four club executive members and their posts (Including you)

3. Photo Gallery:

• Should have an organized collection of photos related to the club.

NB: Add a suitable logo to your website to make it professional. Make your club's motto to appear at the bottom right corner of every page on the website.

ii) Save your web folder as 'wild web'. **(5 marks)**

iii) Print your web pages. **(5 marks)**

APPENDIX II: LIST OF ACRONYMES

ALU - Arithmetic Logic Unit

ASCII - American Standard Code for Information Interchange

BIOS - Basic Input Output System

BPS - Bits Per Second

CAD/M - Computer Aided Design/ Manufacturing

CAL – Computer Aided Learning

CAT 5 - 'Category 5' cable

CD - Compact Disc

CD-R - Compact Disc Recordable

CD-ROM - Compact Disc Read Only Memory

CD-RW - Compact Disc Re-Writable

CPU – Central Processing Unit

CRT - Cathode Ray Tube

DBMS - Data Base Management System

DDR - Double Data Rate

DFD – Data Flow Diagrams

DOS – Disc Operating System

DSL - Digital Subscriber Line

DTP - Desktop publishing

DVD - Digital Versatile Disc

EFT - Electronic Funds Transfer

EULA - End User Licence Agreement

FAQ - Frequently Asked Questions

FIFO - First in First Out

FNF - First Normal Form

FTP – File Transfer Protocol

Gb – Gigabyte

GIF – Graphic Interchange Format

GIGO- Garbage In Garbage Out

GPS – Global Positioning System

GUI – Graphical User Interface

GUI – Graphical User Interface

GW – Gateway

HCI – Human Computer Interaction

HTML – Hyper Text Mark-up Language

HTTP – Hyper Text Transfer Protocol

IC – Integrated Circuit

ICT – Information and Communication Technology

IP – Internet Protocol

IRC – Internet Relay Chat

ISDN – Integrated Services Digital Network

ISP – Internet Service Provider

JPEG – Joint Photographic Experts Group

Kb – Kilobyte

KH – KiloHertz

LAN - Local area network

LCD – Liquid Crystal Display

LED – Light Emitting Diode

LIFO - Last in First Out

MAN – Metropolitan Area Network

MICR – Magnetic Ink Character Recognition

MP3 – MPEG Layer 3

NIC – Network Interface Card

NOS- Network Operating System

OCR – Optical Character Recognition

OMR - Optical Mark Recognition

OMR- Optical Mark Reader

OOPL- Object Oriented Programming Language

OSI – Open Systems Interconnection

PCI – Peripheral Component Interconnect

PDA- Personal Data Assistant

POS - Point of Sale

PPM – Pages per Minute

RAM - Random Accesses Memory

ROM - Read Only Memory.

WAN – Wide Area Network

SCSI – Small Computer Systems Interface

SQL – Structured Query Language

TCP – Transmission Control Protocol

TFTP – Trivial File Transfer Protocol

TNF – Third Normal Form

UPS – Uninterruptible Power Supply

URL – Uniform Resource Locator