

MAINTENANCE OF A COMPUTER AND ITS COMPONENTS

In this chapter we shall look at the types of maintenance, the importance of computer maintenance, software and hardware maintenance and other issues.

Importance of computer maintenance

It helps to clear the inner and outer workings of a computer. In order for a computer to work effectively without failure, maintenance has to take place.

Types of maintenance

- a) **Breakdown maintenance:** This type of maintenance is carried out only upon total failure of the machine or electronic device. It is reparative in nature. This method pays no attention to the machine until it has broken down, then it is repaired. This technique is advisable only when a breakdown of the machine doesn't affect productivity or efficiency.
- b) **Preventive maintenance:** This type of maintenance is carried out at regular intervals (daily, weekly, monthly, quarterly and annually e.t.c.) depending on the machine type. Some of the activities carried out here include: cleaning, dusting and blowing, oiling, retightening or re-screwing, e.t.c. This technique is the best when the machine /device is an essential factor of productivity and efficiency. It is sometimes referred to as periodic maintenance
- c) **Predictive maintenance:** This type of maintenance takes into consideration the service life or life span of the equipment or device as speculated by the manufacturer/producer/designer. When this method is efficiently implemented, machines are usually replaced before the expiration of their service life or life span.
- d) **Corrective maintenance:** This maintenance technique is used to ensure that various parts of the machine are working properly; this is achieved by re-designing or replacing

defective machine parts or machine parts that do most of the work. It is used to enhance the reliability of preventive maintenance when both methods are used together.

Hardware maintenance

How often you perform this aspect of maintenance is entirely dependant on your machine's environment.

- ◆ If the environment is extremely dusty, once a month is reasonable
- ◆ In a relatively dusty environment, once a year may be adequate

This can be determined by opening the case periodically and examining the case and CPU fans.

Ways of maintaining hardware

1. Keep liquids and fluids at a good distance away from your computer because they are not computer friendly especially the keyboard.
2. Keep the computer as whole and its components away from direct sunlight, heat sources, electrostatic and electro-magnetic media.
3. Dust usually contributes largely to over heating problems. Hence, a blower (usually compressed air in a can), a soft brush or an anti-static vacuum cleaner should be used to remove/blow out/extract dust from vents and holes in the computer as well as from under the key board. This should be done in intervals depending on the type of maintenance you decide to adapt to. This method is called blowing or dusting
4. During storms, your computer must be kept away from power sources to safe guard it from power spikes or surges which result from super charged lighting bolts. Unless it is connected to a reliable stabilizer.
5. It is much safer to carry computers in padded bags, as this keeps them safe from damage even when they drop un-expectedly.
6. Avoid placing heavy objects on your computer, especially if it is a laptop, as this may damage the laptop screen

7. Clean your computer screen regularly with a dry towel to remove dust. Ensure that your computer is properly and completely shut down before doing so if it is a touch screen.
8. Avoid touching your computer screen with your hands/fingers as much as possible for many different reasons. Get a pointer which is much safer and efficient.
9. Avoid removing your computer battery unnecessarily as this could damage it. It is a good idea to allow your computer battery once in a while to drain completely.
10. When the above tips are carried out and you still get hardware problems, please consult a professional PC support staff/technician.

Software maintenance

1. Keep your operating system free from viruses and worms by scanning regularly with either a third party anti-viral suite or one from your operating system vendor.
2. Avoid connecting to un-trusted and/or unknown private/public network sources.
3. Avoid installing programs/applications from vendors you neither know nor trust.
4. The following tasks should be performed regularly as in line with your chosen maintenance technique, as they keep the disk and software components of your computer functioning to their optimum: disk cleanup. Disk Check (for errors), Disk defragmentation, and Registry Cleanup e.t.c. As they keep your computer from being unnecessarily slow.
5. Connect your computer regularly to your driver or software vendors/manufacturers' website so as to receive updates and fixes that keep your drivers and software up to date.
6. Always keep backups and copies of important data stored on your computers. It is better to back up on external disks.
7. Avoid abruptly un-plugging peripheral devices such as USB disks, printers scanners e.t.c. from your computer without first powering them off and using the safely remove option. This could reduce freezes, blue screens and loss of already saved data to the disk.

8. Do software inventory. This requires you to know what software is needed or wanted on your computer. Always use caution when uninstalling software programs, in-order to re-install them; you will need original software installation files.
9. Ensure you schedule your computer for security updates because some of these updates are very crucial and important to your computer.
10. When the above tips are carried out and you still get hardware problems, please consult a professional PC support staff/technician.

Note: *The bad news is that just like every other equipment, machine or device, a computer has a life span and it usually won't last much longer after its expiry date. So, no matter how much care or maintenance you give it, you will have to replace it when its life span exceeds.*

Malware protection

Malware refers to programs that have been written by people with malicious intent e.g. viruses. Once a computer has been infected, the virus can be spread to other machines either by way of network connection or through removable media.

Ways of preventing malware

- ◆ “Microsoft security essentials” is a free software program to those who have a genuine copy of the Windows Operating System. It is by far the most effective malware protection and removal software program available for the windows operating system.
- ◆ The other defence against malware (virus infections) is an anti-virus application. Once installed, it can run in the background to make sure a virus is not infecting the computer.

Anti-virus programs can be run on command to scan the entire computer or just a specific file for viruses. You should purchase this application from a trust worthy vendor.

Remember to update the anti-virus program often, if possible put auto update.

If the virus is found, the anti-virus can perform one of the following two actions:-

- It can clean the infected file

- If it cannot clean it, it isolates the file – here the user will not be able to open it.
- ◆ If you are a member of the online community or chat room, be very careful to accept or use any links that you find or that are sent to you within the community.

Types of viruses

1. **File virus:** This is one of the most common forms of viruses; it modifies an existing program so that upon execution of a seemingly safe program, the malicious intent of the virus is carried out.
2. **Boot sector virus:** This virus targets the boot sector of every floppy or hard disk. If the boot sector of the primary hard drive is infected, every time a computer is started, the virus will run.
3. **Macro virus:** This one takes advantage of built in programming languages in word processors. Macros automate the formatting of documents and can be quite useful. However, they can also be written to do mischievous or damaging things
4. **E-mail virus:** This virus travels as an attachment to e-mail messages and usually replicates itself by automatically mailing itself to dozens of people in the victim's e-mail address book.
5. **Trojan horses:** These are simply computer programs which claim to do a particular thing, or pretend to be helpful e.g. games but instead do damage when you execute or run them. They may even erase the hard disk
6. **Worms:** This is a small piece of software that uses computer networks and security holes to replicate or multiply itself. A copy of the worm scans the network for another machine that has a specific security hole; it copies itself to the new machine through the security hole, and then starts multiplying from there.