COMPUTERS FOR BEGINNERS

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GETTING TO KNOW YOUR PERSONAL COMPUTER (PC)

**Hardware**

Hardware refers to the physical equipment (components) of your computer including the system unit, mouse, keyboard, monitor, speakers, etc.

**Software**

Software applications are the instructions that make your computer work. For example, Microsoft Windows and Microsoft Word are software that reside inside your computer. Your computer usually comes with some software installed, and you can purchase additional software.

**COMPONENTS & PERIPHERALS**

**System Unit**

The “system unit” is the name given to the “box” that houses everything your computer (PC) needs in order to run. It is where the computer does its work.

**Monitor**

The monitor is the “tv-like” screen that you view the work you are doing on the computer. They come in various sizes. Common sizes range from 15” to 21” screens, measured diagonally.

If you are upgrading, ask for the “visible viewing area” of the screen.

**Keyboard**

They keyboard allows you to input (type) information into the computer.

**Mouse**

The mouse is a device that is used to select and move items on the monitor. You will be able to point and click on items, select, and drag and drop items from one place to another.
INSIDE YOUR COMPUTER

Motherboard
A motherboard provides the electrical connections by which the other components of the system communicate (talk with each other).

- Computer’s basic circuitry
- Microprocessor (CPU)
- Memory
- Basic input/output system
- Expansion slots (for additional components).

CPU / Microprocessor
Central Processing Unit (CPU) is the device that accepts digital data as input, processes it according to instructions stored in its memory, and provides results as output.

The CPU is responsible for the smooth running of your software applications such as the Operating System, Word Processor, Spreadsheets and Databases.

*It also helps determine how fast your PC will run.*

Speed is measured in GHz (gigahertz) or MHz (megahertz).

**2.5 GHz is a common speed for computers today.**
MEMORY

RAM (Random Access Memory)
Memory is where the computer does its work. More memory equals better PC performance.

RAM is the temporary storage and working space for your software applications.

ROM (Read Only Memory)
Memory that has been prerecorded.

ROM memory is retained even when the computer is turned off.

MEASURING MEMORY

Bit (Binary digit)
0 and 1

Byte
8 bits

Kilobyte
One thousand bytes

Megabyte (MB)
One million bytes

Gigabyte (GB)
One billion bytes

Terabyte (TB)
One trillion bytes
STORAGE

The physical place that the computer keeps the information (files) it needs to work.

HARD DRIVE

**Hard Disk or Hard Drive**
The main storage area inside your PC for applications (e.g. Microsoft Word) and data (your

- **Speed**: Very fast!
- **Capacity**: Gigabytes

FLASH DRIVE

Easy to use, portable.
USB or Firewire port.

- **Speed**: Fast!
- **Capacity**: 250MB – Terrabytes

EXTERNAL (Backup) DRIVE

3 main purposes: to expand your PC's storage capacity, to back up your data, and to share data between computers.

CLOUD STORAGE

A model of data storage where the digital data is stored in remote locations on servers.

- The physical environment is typically owned and managed by a hosting company.

- **Pros**: protected, reliable, cheap.
- **Cons**: remote, tech failures, security, “out of your hands”
## SOFTWARE

### OPERATING SYSTEM

The operating system is the software “brains” of your PC.

It loads automatically when you start your computer.

Microsoft Windows and Mac OS X are examples of operating systems.

### APPLICATIONS

Software programs that you use once the operating system has been loaded.

Examples: word processing programs, spreadsheets, databases and email programs.

<table>
<thead>
<tr>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Word Processing</strong></td>
<td>Microsoft Word is an example of a Word Processing application to create documents, write letters.</td>
</tr>
<tr>
<td><strong>Spreadsheet</strong></td>
<td>Microsoft Excel is an example of a Spreadsheets application used to perform calculations, create financial models and organize information.</td>
</tr>
<tr>
<td><strong>Database</strong></td>
<td>Microsoft Access is an example of a Database application used to organize data, generate reports and perform queries.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>Microsoft PowerPoint is an example of a Presentation application to create presentations and reports.</td>
</tr>
<tr>
<td><strong>Desktop Publishing</strong></td>
<td>Adobe InDesign is an example of a desktop publishing application to create graphic design layouts, brochures, and artwork.</td>
</tr>
</tbody>
</table>
**SOFTWARE, cont’d**

<table>
<thead>
<tr>
<th>APPLICATIONS, cont’d</th>
<th>Software programs that you use once the operating system has been loaded.</th>
</tr>
</thead>
</table>

**Web browsing**  
Microsoft Word is an example of a Word Processing application to create documents, write letters.

**Smartphone Apps**  
Facebook on your smartphone is an example of an application developed specifically to work on your smartphone.

**Web authoring**  
Dreamweaver is an example of a web authoring application used to create webpages and websites.

**Music**  
iTunes is an example of an application used to listen to and organize music.

iGarage is an example of an application used to create, record and produce music.
HOW YOUR COMPUTER IS ORGANIZED

FILES

Data and programs are stored on your PC as files.

- Data files are ones you have created (e.g. a letter in Microsoft Word).
- Program files contain information to run your programs and applications (e.g. Windows, Microsoft Word).

FOLDERS

Folders are used to group files, like a folder in a drawer.

- Folders can also contain sub-folders to further organize and sub-divide your files.
## USING YOUR COMPUTER

<table>
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<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POWER ON</strong></td>
<td>Press the Power button to start your PC.</td>
</tr>
<tr>
<td><strong>LOGON</strong></td>
<td>The computer checks all the components, and if all is working, the Welcome screen comes on and displays the Windows Logon screen.</td>
</tr>
<tr>
<td><strong>SLEEP</strong></td>
<td>All computers have a Sleep mode that allows the computer to temporarily suspend all nonessential operations. Sleep mode is a huge energy saver, because it uses only as much electricity as a night light and can quickly start again when you're ready to use it. The computer might seem to be shut down, but all of your work is saved and your documents are still open.</td>
</tr>
<tr>
<td><strong>LOGOFF</strong></td>
<td>Logging Offs signs you out as a user and allows someone else to login with their specific user id.</td>
</tr>
<tr>
<td><strong>SHUT DOWN</strong></td>
<td>Shutting Down turns the power off on the computer.</td>
</tr>
<tr>
<td><strong>RESTART</strong></td>
<td>Every computer usually has more than one restart method. Press Alt + F4 on your keyboard and then scroll to Restart on the menu box that opens.</td>
</tr>
</tbody>
</table>

If your computer has become frozen or unresponsive to any other commands, **press and hold your computer's power button for approximately 5 seconds**. Your computer will shut down completely, and any work that has not been saved prior to the reboot will be lost.

**Turn your computer back on by pressing the power button.** Your computer will restart, but the process may take longer since Windows will run extra diagnostics after an unconventional shutdown method has been used.

* Before taking any of these actions, make sure you save all items to ensure you preserve the most recent versions. Do not press the power button to shut down the computer unless the computer has stopped responding and you can no longer restart it.
PRACTICAL SKILLS

STARTING AND LOGGING ON TO WINDOWS

TURN ON YOUR COMPUTER USING THE POWER BUTTON.
Click the User Icon and enter a User Name and Password if required.

WINDOWS DESKTOP

The main Windows screen is known as the Desktop. Icons (pictures) appear on the desktop for ease of accomplishing specific tasks. Depending on how a person sets up their computer, each user’s desktop may appear to look different.

You can change the background image, size of icons and resolution of your desktop.

USING THE MOUSE

Pointing
Move the mouse so that the pointer is over an object. A box will appear that gives more information pertinent to the object.

Dragging and Dropping
You can move items around your screen by dragging and dropping them with the mouse. Try moving the mouse over an object, clicking and holding the LEFT mouse button, and moving the mouse to drag the object to a new location. When you let go of the mouse button, the object will move to where you dragged it.

Right Clicking
When you click on the RIGHT mouse button, a small window will appear with a menu relevant to whatever action you are currently engaged in.
USING THE KEYBOARD

The keyboard is an input device that you use to enter information such as alphabetic characters, numerical data, symbols, and commands.

**Functions keys**, F1 through F12, are used to perform specific tasks, depending on the operating system and software in use. For example, in many programs, F1 is used to display the Help file.

**Special keys** are used alone or in combination with other keys to perform certain actions.

Special keys include Ctrl, Alt, Esc, Windows logo key, Tab, Caps Lock, and Shift.

- Pressing the key combination **Ctrl+S** saves a file.
- Pressing Shift and a letter produces an uppercase letter.
- Caps Lock enters all letters as uppercase letters without having to press Shift.
- Press the Spacebar to insert a space.
- Press the Enter key to move the cursor to the beginning of the next line.
- Press the Backspace key to delete the character before the cursor or selected text.
ERGONOMICS

YOUR CHAIR A good, supportive chair is most important. Your chair should be fully adjustable, and be able to move up and down. It should have an adjustable back and fit your body and height.

YOUR SCREEN Your screen should be fully adjustable so that your eyes are at the same height as the top of the screen. You may wish to use a filter attached to the screen to reduce glare. If the screen is badly focused, too bright or appears to flicker, then have it examined by a qualified technician.

YOUR KEYBOARD Use a good keyboard and wrist pad to elevate pressure on your wrists.

YOUR FEET You may wish to use a footpad to rest your feet on while using a computer. Your feet should sit flat on the floor or other surface.

YOUR MOUSE Use a mouse pad to make the mouse easier to use. Ensure that you have enough space to comfortably use the mouse. If your arm or fingers become tired or painful, when using the mouse, take a break!

BREAKS It is important to take frequent breaks when using a computer! You should get up hourly for a few minutes to rest your eyes and stretch your hands, arms, and legs.

ENVIRONMENT Make sure that you are using a computer in an area that is adequately lit and well ventilated.
### HEALTH, SAFETY & PROTECTION

#### HEALTH AND SAFETY
- Make sure that cables are safely secured:
  - Use the cables that were supplied with your computer or cables of similar quality.
- Make sure the cables are safely secured at the back of the desk and that you have power outlets located near the desk.
- If you desk has a cable ducting system, make you that you use it.
- Avoid long and trailing cables as you and others can easily trip over them and be injured. Accidentally pulling out a power cable and power loss can cause possible damage to your files.

#### BACK UP DATA
**Why do I need to back up my computer?**

If the Hard Disk fails, it is VITAL that you have made regular back ups of your computer so that your data can be restored.

**Shutting Down Properly**
You MUST always use the Shutdown command (in the Start menu) to close down the operating system. Switching off the computer any other way can cause loss of data. To protect against sudden power loss, save your work regularly.

**Electrical Surge Protection**
Use a power strip to protect against power loss and surges.

#### VIRUSES
Viruses are small programs that hide themselves in files. Unless you use virus detection software, your computer is at risk to be infected from emails, Internet files and files from flash drives.

**WHAT TO KNOW ABOUT VIRUSES**
The worse thing about a virus is that it can spread from one computer to another.

Never connect to the Internet without virus detection software installed.

It is vital to keep your virus detection software up to date.

**Software:** Norton Anti-Virus, McAfee, DR Solomon.
A HAPPY COMPUTER

THINGS COMPUTERS LIKE
- Good ventilation
- Clean environment
- Avoid opening windows... watch out for RED DIRT!
- Stable, vibration free surface

THINGS TO AVOID
- Drinking and eating over the keyboard
- Dust, Heat, Cold, Moisture
- Never move a computer when it is on. It could damage the hard disk.
- Never just turn the power off on your computer! ALWAYS follow the correct shutdown method.
- Do not block the air vents on your monitor or computer when they are running. This could cause damage from overheating.
- Keep magnets away from your computer and flash drives.