

MPCUG Computer Basics

The Computer

- What does PC stand for?

Personal Computer. PCs were developed in the early 70s and came into full bloom in the early 80s. These computers were called Personal to distinguish them from the "Mainframe" type big computers, like the IBM computers of the 50s and 60s that had "Terminals" connected to them. Most PCs today have more processing power than a big IBM computer of that era.

- What is a "Terminal"?

A combination of a Keyboard and Monitor that connected to a "Mainframe" – just like the present Keyboards and Monitors connect to the Towers of PCs.

- What is a PC (Personal Computer)?

It's an electronic device that takes the information you put into it and performs billions of high speed electronic switching functions to provide an output.

- What does a PC consist of?

There are two basic types of PCs, Desktop and Laptop. Desktop PCs have separate components: Tower, Monitor and Keyboard/Mouse.

Laptops have all these components built into one package: The Monitor is the Lid, the Tower components are under the keyboard and the Keyboard contains a Trackpad that serves the purpose of the Mouse. Laptops can be operated from a battery or plugged into an AC outlet.

- What is a Netbook?

A computer that is like a Laptop, only much smaller. It was meant to be used for travelers for access to the Internet. They have lost their popularity since the iPad and other similar devices have been released. The Netbook did not have a CD/DVD player/burner making it inconvenient to install new programs etc.

- What is a Tower?

The part of the Desktop computer that sits on the floor, desk or table. The Tower is the box that looks like a double sized Breadbox. PC Towers have always been about the same size but used to lie on its side with the Monitor on top of it. The Tower contains the Hard Drive, Power Supply, Mother PCB with Daughter PCBs and usually a CD/DVD Reader/Burner.

- What is a Mother PCB?

It's the Main Printed Circuit Board with electric circuitry on it connecting the ICs (Integrated Circuits), including the RAM (Random Access Memory), CPU (Central Processing Unit) and BIOS ROM (Read Only Memory). All the components in the Tower connect to the Mother PCB, including the Daughter PCBs.

- What is a Daughter PCB?

A smaller PCB that also has electric circuitry on it for the ICs that serve as Drivers for the Peripheral devices.

- What is a Peripheral device?

Anything, other than the Keyboard and Mouse, that connects to the PC. Devices like Printers, Scanners, Modems, External Hard Drives etc.

- What is a BIOS ROM?

It's the IC (Integrated Circuit) that contains the information the PC needs to start operating. It's called a ROM (Read Only Memory) because its main function is to be Read, not be written to like RAM.

BIOS stands for Basic Input/Output System. The BIOS gives the computer a little built-in starter kit to start up the computer from the hard disk. The BIOS is responsible for booting the computer by providing a basic set of instructions.

- What is RAM?

Random Access Memory. The ICs (Integrated Circuits) in the computer where all the work being done is temporarily stored. When you turn the computer ON the RAM is empty. When you turn the computer OFF, anything in the RAM will be lost. That's why you must Save when working on files. You Save the data from the RAM to the Hard Drive.

- What is a CPU?

The CPU (Central Processing Unit) is the "Brain" of the computer. It's an Integrated Circuit (IC) that has 32 or 64 connections on its input. Each connection can be switched On or Off in a binary system to give millions of combinations. Each one of the combinations or codes tells the CPU to perform a particular function. If the computer has a CPU with 32 connections it's called a 32 bit computer and if 64 connections a 64 bit computer.

- Why does it matter if a computer is 32 bit or 64 bit?

A 64 bit computer's CPU is faster, but since there are so many other functions taking place in a computer, the faster speed of the CPU would probably not be noticeable unless you were a business professional.

- How do I determine if my computer has a 32 or 64 Bit System?

Click Start

Click Control Panel

Double Click System

Click the General tab. The operating system is displayed as follows:

* For a 64-bit version operating system: Windows XXX x64 Edition appears under System.

* For a 32-bit version operating system: Windows XXX Edition appears under System.

If your computer Does Not show 64 in the name you have a 32 Bit Operating System.

- How do you put information into a PC?

You can use a Keyboard, a Mouse/Trackpad, a CD/DVD, a Scanner, an External Device or a combination of these input devices. Some new computers have "Touch Screen" Monitors that allow you to enter data. Some restaurants and bars use Touch Screen Monitors to enter orders.

- What is a Keyboard?

A set of pushbuttons arranged like the keys on a typewriter. Each key, or combination of keys, sends an electronic code to the computer's CPU. The other Input devices also send electronic codes, but do it in a different manner.

- What are all the KEYBOARD SYMBOLS called?

From Left to Right across the “Number” row of keys – holding down a Shift key:

- ~ = Tilde - a diacritical mark
- ! = Exclamation Mark
- @ = Commercial At Sign, just pronounced “at”
- # = In front of a Number it’s a “Number Sign”, after a Number it’s a Pound sign, standing alone it’s an Octothorpe.
- \$ = Dollar Sign
- % = Percent symbol
- ^ = Wedge, Caret, Hat, or Circumflex - a diacritical mark
- & = Ampersand or And Sign
- * = Asterisk, or Star
- (= Left or Beginning Parenthesis
-) = Right or Ending Parenthesis
- _ = Underline
- + = Plus or Add

Under the Tilde – Not holding down a Shift key:

- ` = Grave Accent – a diacritical mark

To the Right of the “Zero (0)” key – Not using a Shift key:

- = Hyphen or Minus
- = = Equals

To the Right of the “P” key – using a Shift key:

- { = Left or Beginning Brace
- } = Right or Ending Brace
- | = Bar or Vertical Divider

To the Right of the “P” key – Not using a Shift key:

- [= Left or Beginning Bracket
-] = Right or Ending Bracket
- \ = Backslash

To the Right of the “L” key – using a Shift key:

- : = Colon
- “ = Quotation Mark

To the Right of the “L” key – Not using a Shift key:

- ; = Semicolon
- ‘ = Apostrophe

To the Right of the "M" key – using a Shift key:

< = Less than

> = More than

? = Question Mark

To the Right of the "M" key – Not using a Shift key:

, = Comma

. = Period

/ = Slash or Forward Slash

- What are the "F" keys on the Keyboard used for?

A variety of Functions – not always the same for every computer. They are quick ways to perform tasks with (usually) one key versus having to root in the computer to find how to do something. The manual that came with your computer should tell you what each key will do. On laptops you usually have to press and hold an additional "Fn" key before you press the F keys.

Alt key + Three digits

128 Ç	141 ì	151 ù	Esperanto
129 ü	142 Ä	152 ŷ	Symbols:
130 é	143 Å	153 Ö	264 —
131 â	144 É	154 Ü	265 —
132 ä	145 æ	160 á	284 —
133 à	146 Æ	161 í	285 —
134 â	147 ô	162 ó	292 —
135 ç	148 ö	163 ú	293 —
136 è	149 ò	164 ñ	308 —
137 ë	150 û	165 Ñ	309 —
138 è		167 °	348 —
139 ï		168 ¿	349 —
140 î		248 °	364 —
		250 ◻ (smaller bullet)	365 —

Charts For specific languages

(Alt key + 3 digits is to left of accented letters; Alt key + 4 digits is to the right)

<u>FRENCH</u>	<u>SPANISH</u>	<u>ITALIAN</u>	<u>Polish</u>
133 à (0224)	160 á (0225)	133 à (0224)	<u>GERMAN/SCANDINAVIAN</u>
131 â (0226)	130 é (0233)	138 è (0232)	
135 ç (0231)	161 í (0237)	141 ì (0236)	132 ä (0228)
130 é (0233)	164 ñ (0241)	149 ò (0242)	134 å (0229)
138 è (0232)	162 ó (0243)	151 ù (0249)	145 æ (0230)
136 ê (0234)	163 ú (0250)	183 À (0192)	— (0240)
137 ë (0235)	129 ü (0252)	212 È (0200)	137 è (0235)
140 î (0238)	Á (0193)	ì (0204)	148 ö (0246)
139 ï (0239)	144 É (0201)	ò (0210)	155 ø (0248)
œ (0156)	Í (0205)	Û (0217)	225 ß (0223)
147 ô (0244)	165 Ñ (0209)		— (0254)
151 ù (0249)	Ó (0211)		129 ü (0252)
150 û (0251)	Ú (0218)	<u>PORTUGUESE</u>	152 ŷ (0255)
183 À (0192)	154 Ü (0220)	ã (0227)	142 Ä (0196)
182 Â (0194)	168 ¿ (0191)	Ã (0195)	143 Å (0197)
128 Ç (0199)	173 ï (0161)	135 ç (0231)	146 Æ (0198)
212 È (0200)		128 Ç (0199)	— (0208)
144 É (0201)	<u>French</u>	149 ò (0242)	Ë (0203)
210 Ê (0202)	<u>Continued</u>	ò (0210)	153 Ö (0214)
211 Ë (0203)		162 ó (0243)	157 Ø (0216)
215 Î (0206)		Ó (0211)	— (0222)
216 Ï (0207)	226 Ô (0212)	õ (0245)	154 Ü (0220)
Œ (0140)	235 Û (0217)	Ö (0213)	
	234 Û (0219)		
	174 « (0171)		
	175 » (0187)		

- Why do you need a Monitor?

It contains the screen that let's you *see what is happening* inside the computer. If the Monitor is turned Off, or even unplugged, the computer will still do whatever you told it to do. You can perform many functions on the screen of the monitor by using the Mouse or Trackpad.

- What does the Mouse do for you?

Allows you to move the cursor around on the screen to Click, Double Click, Right Click and Click and Drag. A Mouse is Much easier to use than the Trackpad on a laptop and you can plug a Mouse into a Laptop, which is highly recommended.

- What is a Trackpad?

The little area in the middle below the keyboard on a Laptop. If you move your finger around on it you will see the cursor move on the screen. The problem with having the Trackpad active is that you sometimes touch it with a thumb while typing and that moves the cursor to an incorrect position on the screen and puts what you type in the wrong place.

- Can the Trackpad be turned off?

On newer laptops you usually find a switch or a means to turn the Trackpad on and off. On older laptops you can usually install a program that will allow you to turn the Trackpad on or off.

- What is a Trackball?

An "Upside Down" ball type Mouse. You move a ball around instead of the mouse itself. They aren't very popular anymore.

- What is a Cursor?

The little Arrow that moves around the screen when you move the Mouse. It marks the place on the screen that you can perform an operation like typing, or clicking the Mouse. Sometimes the Cursor changes from an Arrow to Double Arrows or an I Beam etc. This symbol change for the Cursor is to help you know what will happen when you Click the Mouse or start typing.

- How many kinds of "Mice" are there?

An older Mouse has a ball that rolls on the table as the Mouse moves. It can be used on any surface that will cause the ball to roll. They get dirty and need cleaned frequently to work correctly. They have a wire that looks like a long mouse tail that connects it to the computer.

Another type Mouse uses a laser to reflect the surface the mouse is on to be able to know when and in what direction the Mouse is being moved. This is called an Optical Mouse and may have a wire connecting it to the computer or be wireless.

- Why can't you use an Optical Mouse on clear white paper or glass?

An Optical Mouse uses a laser light that reflects on the surface under it. The surface must have a "pattern" that is able to reflect the light at different angles as the Mouse moves.

- How does a Wireless Mouse get its signal to the computer?

A plug-in device called a Transceiver (Stands for Transmitter and Receiver) plugs into a USB port on the computer and "Talks" to the Optical Mouse.

- What is a USB port?

One of the connections on the computer to allow a variety of devices to be used with the computer. USB means "Universal Serial Bus". Universal is the magic word – almost any peripheral device is now available with a USB connector. This includes Printers, Hard Drives, Scanners, MP3 Players, Thumb Drives, Cameras, Web Cams etc.

- Is it OK to unplug a USB device with the power on?

Yes and No. If it's a USB Printer, Hard Drive, Scanner etc. it's OK. But Do Not just Unplug a Thumb/Jump/Flash Memory Drive without first:

Double click on Computer (Win 7/Vista) or My Computer (XP). Right Click on the Icon for the name of the Thumb/Jump/Flash Memory Drive. Click on Eject. Now you can safely unplug the Thumb/Jump/Flash Memory Drive. By clicking Eject, you allow the Thumb/Jump/Flash Memory Drive to clean up whatever operation it was doing, just like cleaning up the Kitchen after completing a recipe.

- What is a "Hard Drive"?

A mechanical Memory device in every computer to store the Operating System, the Programs and the Files needed for computer operation. A Hard Drive is like a miniature Record Player that allows both "Playing" of the data (It's called "Reading") and also "Writing" (Recording) of information to its disk(s).

Hard Drives come in many sizes, you hear sizes like 250 Gb and 1Tb etc. Terms like Gb (Gigabyte) and Tb (Terabyte) mean Billions and Trillions of bytes.

- What is the difference between an Internal and External Hard Drive?

An Internal Hard Drive is Inside either your Desktop or Laptop computer and an External Hard Drive plugs into a USB port on your computer. Both type Hard Drives can be used at the same time. Often an External Hard Drive is used for Backup so it can be unplugged and possibly placed in a different location from your computer in case of a calamity.

- How can I see how full my Hard Drive is?

If using the XP Operating System, Double Click on My Computer. Right Click on the "C" Drive and click Properties. You will see a colored "Pie". The colored Pie Slices indicate the amount of the Hard Drive that is used and available.

If using Vista or Windows 7 Operating System, Double Click on Computer. The "C" Drive icon will show a bar graph showing the amount of the Hard Drive that is used. You can also Right Click on the "C" Drive and click Properties if you want to see the colored "Pie".

- How long will my Hard Drive last?

Usually about 5-7 years, but just like People, they can die Anytime. Be sure you have your valuable information Backed Up – ALL Hard Drives WILL DIE sometime.

- What does "Back Up" mean?

To copy the critical information from your computer's Hard Drive to another device that can be disconnected from your computer. A Back Up device could be another Hard Drive, for example, or a Flash ROM. If you "Backed Up" to your Internal Hard Drive, and that Drive "Died" your Backup would also be lost. There are programs to allow you to Back Up on the Internet to a company's hard drive somewhere in the Clouds. THEY keep your data For you and you HOPE they still have it if you ever need it back. It is safer to have your own copy of your information on a Hard Drive even if you have a company backing it up for you.

- Can I backup my Programs as well as my Data?

Only if you have a Special Backup program that will essentially Clone your Hard Drive. If you only back up your Data and Pictures, for example, and you have to replace your Hard Drive, you will have to reinstall both the Operating System and all your Programs along with your backed up data.. Be sure you have a Recovery DVD of your Operating System available.

- I don't have a copy of my Operating System. Where do I get one?

Depending on the brand of computer you have, you may have to contact the manufacturer to obtain one. Some computer companies provide the Operating System on DVDs when you purchase the computer. Other companies allow you to copy the Operating System ONE TIME onto DVDs so you can Recover your system. If not one of the above, contact the computer manufacturer.

- What is a ROM?

A ROM is a Read Only Memory. It's an Integrated Circuit that Permanently stores code It is different from RAM (Random Access Memory) in that the code is Temporary in RAM.

- What is a Flash ROM?

A particular type ROM that can Repeatedly have code put into it and then erased and new code put in. Flash Drives, also called Jump Drives and Thumb Drives are typical uses of Flash ROMs.

- What does Flash mean?

A short electrical burning process in an Integrated Circuit (IC) that makes that Digit/Junction burn Open for a 0 code or Closed for a 1 code. There are millions of Digit/Junctions in a Flash ROM.

- What is an SSD?

Solid State Drive. It is a Very Large Flash Drive (like a giant Thumb Drive) that replaces the mechanical Hard Drive. There are no moving parts to make noise or wear out, it draws less power, had longer life and is smaller and lighter. It is much more expensive – at this time – and Will wear out in time, but will probably outlive the rest of the PCs usage.

- How do you get information out of a PC?

You can view the data on the Monitor's screen, Print it, Save it to internal or external Memory devices, Burn it on a CD/DVD, E-mail it or you can listen to it on Speakers.

- Is Burning a CD or DVD dangerous?

Burning is more of an expression than thinking of it as a fire. A laser changes the contour of the material in the CD/DVD and that is called "Burning".

- What is a "CD or DVD" used for?

Some programs come on a CD (Compact Disk) or DVD (Digital Video Disk) to allow you to put the program into your computer. You can buy blank CDs and DVDs and burn data and pictures onto them. They can be used for Back Up, but they aren't very efficient for that purpose – they don't hold enough information compared to other devices and can't easily be written to repeatedly.

- What's a Floppy Disk?

Floppies were 5 1/4 inch diameter flexible magnetic material covered with an envelope with a soft inside. Then they were changed to a 3 1/2 inch flexible magnetic material covered with hard plastic. They performed the same function as a Hard Drive but could only contain a Very small percentage of data compared to a Hard Drive. As Hard Drives became cheaper, because of their world wide use, Floppies went by the wayside and are no longer used. The 5 1/4 inch Floppy Disk only held 170,000 Bytes of information, the 3 1/2 inch Floppy held 1.3 Million Bytes of data while the smaller Hard Drives today hold 20 Billion Bytes and the larger ones hold Trillions of Bytes.