

الجامعة التكنولوجية
قسم هندسة الحاسبات وتكنولوجيا المعلومات
المرحلة الأولى

أساسيات صيانة الحاسوب

مختبر صيانة الحاسوب

(الملزمة الثانية)

-: _____

Integrated Circuits (IC)

:

-: _____

Software (S/W) ()

Hardware (H/W)

-: **Hardware (H/W)**

-:

. . .

1 – Input / Output Unit

– 1

2 – Memory and Storage Unit

– 2

3 – Central Processing and control Unit

– 3

" Busses "

-: **(Input Unit)**

, Microphone

, Mouse

, Keyboard

Web Cam

Digital Camera

, Scanner

-: **(Output Unit)**

Speaker

, Printer

, Monitor

-: **(Memory and Storage Unit)**

(H/W)

(programs)

(Data)

.(ROM)

, (RAM)

(Floppy Disk Drive)

(Hard Disk Drive)

(Compact Disk Drive)

-: Software (S/W)

(Commands/Instructions)

(Data)

(H/W)

(1)		(Binary System)		(S/W)
. (Zero Volt)	(0)	(5 Volt)	(1)	(0)

-: (Data)

(One and Zero)

.	(8 bit)	byte	Zero	One	(bit)
Byte	= 8 bit	(B)	= 8 bit		
Kilobyte (KB)	= 1024 byte	(B)			
Kilobit (Kb)	= 1024 bit	(b)			
Megabyte (MB)	= 1024 Kilobyte	(KB)			
Gigabyte (GB)	= 1024 Megabyte	(MB)			
Terabyte (TB)	= 1024 Gigabyte	(GB)			

: (Random Access Memory - RAM)

(RAM)

(Operating System)

(RAM)

) (RAM)


. Megabyte (MB)


()

(MHz) Mega Hertz

-: (RAM)

1 - (Single In Line Memory Module – SIMM)

A) 30 Pin () 

B) 72 Pin () 

(SIMM)

33 MHz

2 – DIMM (Dual In Line Memory Module)

-: Pentium (DIMM)

A) SDRAM (Single Date Rate) () 

168 Pin , 66 MHz , (64 MB → 1 GB) Pin

B) DDRAM (Double Date Rate) DDR1 () 


184 Pin , (128 MB → 1 GB)

400 MHz , 333 MHz , 266 MHz DDRAM

C) DDR2 () 

256 MB 720 MHz

3 – RIMM (Ram bus In Line Memory Module) :-

 () 128 MB 800 MHz
-4 , -3 , -2 , -1

(IC)

(Connectors)

(Slot)

(Busses)

-: Read Only Memory (ROM)

(BIOS)

(Mother Board)

(IC)

(ROM)

(RAM)

-:

1 - (PROM) Programmable Rom

(BIOS)

2 - (EPROM) Erasable Programmable Rom

(ROM)

(Ultra Violet)

3 - (EEPROM) Electronic Erasable Programmable Rom

(Flash ROM)

(BIOS)

(Flashing)

(Complementary Metal Oxide Semiconductor) (CMOS)

(Mother Board)

(IC)

(BIOS)

(BIOS)

(CMOS)

(3 Volt DC)

-(Cash Memory) ()

(Static RAM)

(Refresh)

(Dynamic)

(RAM)

(Cash)

(RAM)

(CPU)

(Level One L1)

(CPU)

(Level Tow L2)

(Level Three L3)

(Mother Board)

(Servers)

-: Cache

128 K B (¼ Cache) / A
256 K B (½ Cache) / D
512 K B (Full Cache) / E
1 M B (Double Full Cache) / Centerino
2 M B (In Laptops) / Core 2 Duo

-: (Central Processing Unit-CPU)

-:

-: (Arithmetic logic unit-AU)

(Logic Classic)

-: (Control Unit-CU)

(Subroutine)

-: (Pentium)

(Intel)

-:

P 1 (90 - 233) MHz
P 2 (233 - 566) MHz
P 3 (500 - 1 GHz)
P 4 (1 GHz -)

(Socket)

(Slot)

(P3)

(Pin Grid Array / PGA)

478 Pin

P4

(378 Pin)

(Fan)

(Heat Sink)

-: (Mother Board)

(PCI) (RAM) (CPU)
 (AGP) , (ISA) ,
 (CD) (Hard) (IDE)
 ...
 . (busses)
 . (Power Supply)
 (North Bridge) (Chipset)
 (RAM) (CPU)
 (Hard) (CPU) (South Bridge)
 (IDE) , (CMOS) , (ROM) (Slots)
 (Floppy)
 (Capacitors) (Resistors)

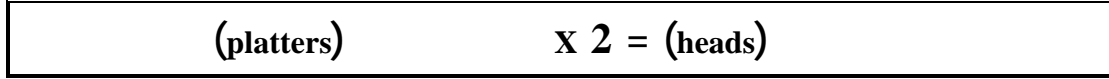
-:(Hard Disk Drive / HDD)

(RAM)
 .
 (Zero) (One)
 . (Heads)
 -: _____
 : (Platters) - 1
 (Motor)

: (Heads)

- 2

(Platter)



: (Tow Motors)

- 3

(Heads)

(Platters)

: (Control Card)

- 4

(IC)

-(Platters)

(Disk)

(Disk)

(Platters)

()

(Track)

(Tracks)

(Disk)

(512 byte)

(100-300)

(Sector)

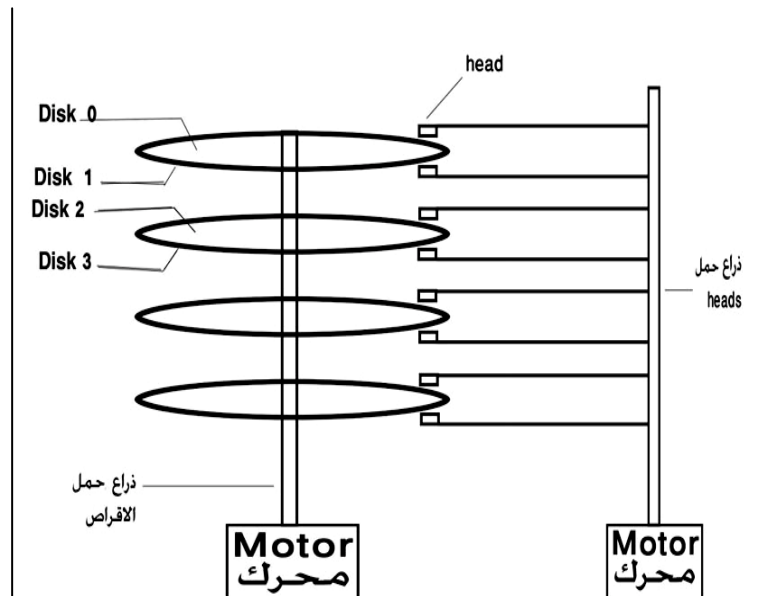
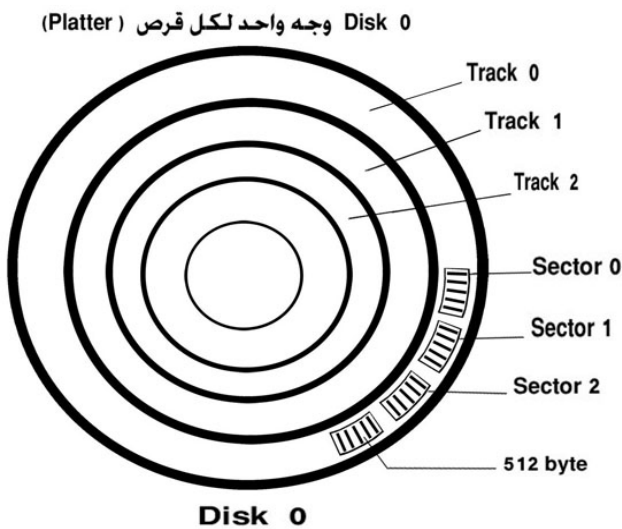
(Disk 0 , Track 5 , Sector 10)

(Disk)

(Heads)

(Track 5 , Sector 10)

(Disk 0)



(CPU)

(Cache)

(RAM)

(Revolution Per Minute) (RPM)

-:_____

, (Molex)

(Power Cable)

(IDE Cable)

(Data Cable)

(Data)

.(38 pin)

-:(Master and Slave)

(CD)

(Hard)

(IDE)

(DVD)

(CD)

(Slave)

(Master)

(2pin)

(Jumper)

.(CD)

(Master and Slave)

-:(Floppy Disk Drive)

(Hard)

(Data)

(berg)

(Power)

(5.25 inch)

(34 pin)

(IDE)

.(3.5 inch)

.(1.44 MB)

(720 KB)

-:(Compact Disk Drive) (CD)

(Hard)

(Zero)

(One)

-: _____

(One)

(Zero)

-:

(Kilo byte per second) (KBPS)

(CD)

(150 KBPS)

(CD)

= (60 X)

(X)

(700 MB) =

(Writer)

(CD)

(CD)

(IDE)

(Molex)

(Power)

(CD)

(Slave)

(Master)

(Jumper)

(Data)

*

-:(Power Supply)

(DC)

(220 VOH AC)

(- 5 , - 12 , 3.3 , + 12 , + 5)

- :

	_____	_____	_____
PCI	+ CPU + RAM	+ 3.3	volt
	Mother Board	+ 5	volt
	Motors + Fans	+ 12	volt
		Zero	volt
PROM + ISA + Serial Port		- 12	volt
		- 5	volt
		+ 5	volt (Power ON)

Power good line

*

. (Mother Board)

- : (Software S/W)

(Basic Input/Output System) (BIOS)

(ROM)

(Booting)

(Mother Board)

(hardware)

(Code)

(Beep)

(BIOS)

(hardware)

(CMOS)

(BIOS)

()

(Jumper)

(CMOS)

(Short)

(Clear CMOS)

(BIOS)
(BIOS) (F12) (F2) (delete)
(IBM , Phoenix , AMI , Award) (BIOS)

-: **(BIOS)**

1 - (Booting)

2 – Post (Power on self test)

3 – Input & Output

(OS) (BIOS)

-: **(Operating System)**

(OS)

(User Interface)

(Mouse)

(DOS)

(Microsoft)

(Windows)

(Win XP , Win Me , Win 2000 , Win 98 , Win 95)

(Win XP)

(Windows Vista)

(Linux , Unix)

(Hard)

(format)

(Platters)

(format)

(Sectors)

(Tracks)

(Disks)

	(format)		
	(CD)		
	(Bootable CD)		
(Installing)	(format)		*
		(Windows XP)	
(F2) (delete)			- 1
	(BIOS)	(F12)	
(xxxx)	(Press xxxx to Enter Setup) -:		
		.(BIOS)	
	(Boot) (Startup)	(BIOS)	- 2
	(keyboard)	(BIOS)	
	(Enter)	(Escape)	
		(Page down , Page up , - , +)	
(Boot sequence)	(Boot) (Startup)		- 3
	(BIOS)	(Boot priority)	
(CD)		(Bootable)	
	... (USB)	(Floppy) (Hard)	
(F10)	(CD)		- 4
	(BIOS)	(Save and exit)	
Press)		(BIOS)	- 5
	.(CD)	(any key to Boot from CD)	
	(CD)	(Win XP)	
	(format)		- 6
	.(F8)		- 7
.(Enter)	(Windows)		- 8

(Escape)	(Windows)		- 9
	(R)	(Windows)	(Repair)
(Escape)	(Windows)		(F3)
	(Hard)		- 10
(Enter)		(Win)	
	(C)	(Hard)	(Create)
(Hard Disk)		(D)	(Partition)
		(Megabyte)	
	(quick)	(format)	- 11
		(format)	(Hard)
	(System File)	(NTFS)	(FAT32)
	(NTFS)	(Hard)	
			(Security)
		(File Allocation Table) FAT	
		(New Technology File System) NTFS	
		(Enter)	
			(format) - 12
(Customize)			- 13
(Advanced)			
	(Next)		
			(Mouse)
(CD)		(25)	- 14
			(Next)
		(Next)	- 15
		(desktop)	- 16

Properties → desktop → Customize desktop →
(Internet Explorer , My Documents , My Computer) (✓)

My Computer → Properties → hardware → device manager

(CD) (update driver) ()

(format) - 19

(modem) (LAN) (audio) (VGA)

(format) - 20

(CD) (hard) (RAM) (CPU)

(floppy)

-: _____ *

-:

(windows media player) - 1

(paint) - 2

(word pad) - 3

(notepad) - 4

(Internet Explorer) - 5

(Microsoft office)

(excel) (word)

(Access) (power point)

PDF Portable Document)

(Adobe Reader)

(Nero)

(Photo Shop)

(Format

.(DVD) (CD)

... (AVG)

(A vast)

(Kasper sky)

(Norton antivirus)

(Update)

(antivirus)

-: _____ *

:

-: (System Restore) - 1

-:

Start → All programs → Accessories → System tools → System Restore

-: (Disk Defragmenter) - 2

Start → All programs → Accessories → System tools → Disk Defragmenter

-: (Disk cleanup) - 3

(temporary)

Start → All programs → Accessories → System tools → Disk cleanup

-: (Check Disk) - 4

(NTFS) (FAT32) (File System)

(bad sector)

(C , D , E , F) (My Computer)

:

Properties → tools → Check now

(F8)

(Safe Mode)

(windows)

(format)

(scan)

(antivirus)

(System Restore)

-: (Partition Magic) *

(format)

(hard)

(NTFS)

(FAT32)

(bad sectors)

(under windows)

(windows)

(Bootable program)

(Dos)

(format)

-: (Driver Genius) *

(Flash)

(CD)

(Restore)

(format)