Chapter 4: Plugs and Ports for some computer ports

Take a look at the front and back of your computer case and count the number of buttons, ports, and slots you see. Now look at your monitor and count any you find there. You probably counted at least 10, and maybe a lot more. Each computer is different, so the buttons, ports, and sockets will vary from computer to computer.
However, there are certain ones you can expect to find on most desktop computers. Learning how these ports are used will help whenever you need to connect something to your computer, like a new printer, keyboard, or mouse.

ألق نظرة على الجزء الأمامي والخلفي من الكمبيوتر الخاص بك وقم بإحصاء عدد الأزرار والمنافذ والفتحات التي تراها. ربما أحصيت ما لا يقل عن 10، وربما أكثر من ذلك بكثير. يختلف كل كمبيوتر عن الآخر، لذا تختلف الأزرار والمنافذ والمقابس من كمبيوتر إلى آخر.
ومع ذلك، هناك بعض العناصر التي يمكنك توقع العثور عليها على معظم أجهزة الكمبيوتر المكتبية. إن تعلم كيفية استخدام هذه المنافذ سيساعدك عندما تحتاج إلى توصيل شيء ما بجهاز الكمبيوتر الخاص بك، مثل طابعة جديدة أو لوحة مفاتيح أو ماوس.

Front of a computer case (الجزء الامامي من الكمبيوتر)

Optical Disc Drive (محرك الأقراص الضوئية)

Often called a CD-ROM or DVD-ROM drive, this lets your computer read CDs and DVDs.

يُطلق عليه عادةً محرك الأقراص المضغوطة أو محرك أقراص DVD-ROM، وهو يتيح لجهاز الكمبيوتر الخاص بك قراءة الأقراص المضغوطة وأقراص DVD.

Power Button (زر الطاقة)

The power button is used to power the computer on and off.

Audio In/Audio Out. (مدخل الصوت/مخرج الصوت.)

Many computers include audio ports on the front of the computer case that allow you to easily connect speakers, microphones, and headsets without fumbling with the back of the computer.

تشتمل العديد من أجهزة الكمبيوتر على منافذ صوت في الجزء الأمامي من علبة الكمبيوتر والتي تتيح لك توصيل مكبرات الصوت والميكروفونات وسماعات الرأس بسهولة دون التحسس بالجزء الخلفي من الكمبيوتر.

USB (Universal Serial Bus) Port

Most desktop computers have several USB ports. These can be used to connect almost any type of device, including mice, keyboards, printers, and digital cameras. They will often appear on the front and back of the computer.

تحتوي معظم أجهزة الكمبيوتر المكتبية على عدة منافذ USB. ويمكن استخدامها لتوصيل أي نوع من الأجهزة تقريبًا، بما في ذلك أجهزة الماوس ولوحات المفاتيح والطابعات والكاميرات الرقمية. ستظهر غالبًا على الجزء الأمامي والخلفي من جهاز الكمبيوتر.

Back of a computer case (الجزء الخلفي من الكمبيوتر)

The back of a computer case has connection ports that are made to fit specific devices. The placement will vary from computer to computer, and many companies have their own special connectors for specific devices. Some of the ports may be color coded to help you determine which port is used with a particular device.

يحتوي الجزء الخلفي من الكمبيوتر على منافذ اتصال مصممة لتناسب أجهزة معينة. سيختلف الموضع من كمبيوتر إلى آخر، ولدى العديد من الشركات موصلات خاصة بها لأجهزة معينة. قد تكون بعض المنافذ مرمزة بالألوان لمساعدتك في تحديد المنفذ الذي سيتم استخدامه مع جهاز معين.

Power Socket (مقبس طاقة)

This is where you'll connect the power cord to the computer.

There are many other ports and entrances, which we will explain in the following table,

Port or interface name	Data width	Data transfer rate	Typical use	Comments	Connector appearance or port icon
Video Graphics Adapter (VGA) or Super-VGA (SVGA)	analog signals including separate red, green,blue, horizontal sync, and vertical sync	real time at resolutions of320x200 to about 1600x1200 pixels (or even higher resolution for some vendors) at about 50 to 85 frames/second	cathode ray tube (CRT) monitor	VGA was first marketed by IBM in 1987; SVGA was originally 800x600 pixels, but many manufacturers upgraded SVGA many times	
Digital Visual Interface (DVI)	A single DVI link transmits 4 bits (onebit each for red, blue, green, andthe clock) per pixel, sent serially for24 bits perpixel, pluscontrol signals	real time at resolutions up to 1920□1200 (WUXGA) at 60 frames persecond for a single link, and up to 2560□1600 (WQXGA) at 60 frames per second for dual link	liquid crystal display (LCD) monitor	DVI connectors have up to 24 pins for digital signals and may include legacy VGA analog (red, green, blue, sync) signals using an additional 5 pins.	

Audio out	2 analogsfor stereo	real time	speakers, headphones	about 1 volt RMS	
Microphones in	1 or 2analog signals	real time	microphone	microphones generate millivolts	
Line in	2 analog signals for stereo	real time	audio CD player, radio, home audio/video system	audio amplifiers output about1 volt RMS	
S-Video / TV out (S-Video is also called Y/C video)	2 analog signals forS-Video; 1 analog additional signal for optional composite video	real time	television	S-Video has separate wires for intensity (Y; luminance & sync) and color (C; chrominance); composite video has one analog signal	
Modem	1 analog signal over2 wires (bidirectional half-duplex in phone voice band, or separate upstream and down-stream ADSL frequency channels)	300 bps to about 56 Kbps for standard modems thatuse the voiceband of a phone line; up to about 8 Mbps for broadband Asymmetric Digital Subscriber Line (ADSL) modems	digital data transfer overa telephone line	phone's RJ11 connector with 2 to 6 pins is smallerthan Ethernet's RJ45 connector with 8 pins	
Ethernet	1 bit	10, 100, or 1000 Mbps	Networked computers and printers.	peer to peer (so any node can initiate sending data) using Carrier Sense Multiple Access with Collision Detection (CSMA/CD)	

Serial RS-232-C	1 bit	typically, 75 to 128,000 bps, although theRS-232-C standard does not define bit rates for transmission nor protocolsfor character encoding, error detection, or data compression	modem, printer, mouse, keyboard	bidirectional using one transmit wire and one receive wire; asynchronous (no separate clock wire is included, but there are other control signals so either side caninitiate or pause data transfers)	
PS/2	1 bit	about 7000 to about 12,000 bps	mouse, keyboard	synchronous data transmission from device toPC with a 10 – 16.7 kHz clock; supplies thedevice with power of 5 volts at up to 275 mA	
Parallel (IEEE 1284, where “IEEE” is an abbreviation for the “Institute of Electrical and Electronic Engineers”)	8 bits	360,360 Bps for Centronics or standard mode; about 2 MBps for EPP mode; about 2.5 MBps forECP mode	printer, scanner, magnetic tape	Centronics orstandard mode has 8 bits out of and 4 bits intothe computer port; Enhanced Parallel Port(EPP) has 8 bits in/out; Extended Capability Port (ECP) has 8 bitsin/out	

Universal Serial Bus (USB 1.1 or USB 2.0)	1 bit	1.5 Mbps low speed forUSB 1.1 or 2.0; 12 Mbps full speed forUSB 1.1 or 2.0; 480 Mbps hi speed forUSB 2.0	printer, scanner, modem, mouse, keyboard, portable flash memory, portable media player, external floppy or hard or optical disk, digital still or video camera, PDA	up to 127 devices per host port using hubs; supplies 5 volts at 100 to 500 milliamperes for use by each device; 4 wires in a shielded cable up to 5 meters (16.4 feet) long; devices cannot send data until they are polled by the host; hot pluggable (that is, cable plugs can be inserted into or removed from receptacles while power is on)	 
Wireless (Wi-Fi) IEEE 802.11a, 802.11b, 802.11g, and 802.11n	1 bit	max of 25 Mbps at ~50 meters for 802.11a; 11 Mbps at ~100 meters for 802.11b; 54 Mbps at ~100 meters for 802.11g; 200 Mbps at ~250 meters	networking of multiple computers, PDAs, and other devices suchas printers or file servers, using radio "access points" instead of wires to interconnect peer-to-peer nodes	802.11a uses the 5 GHz radio frequency band in the USA; 802.11b and 802.11g use 2.4 GHz; 802.11n may use 2.4 or 5 GHz when it becomes standardized in 2007	
Bluetooth wireless (IEEE 802.15.1)	1 bit	max of 723.1 kbps for Bluetooth 1.1 and 1.2; 3 Mbps for Bluetooth 2.0; the range is up to ~100, ~10, or ~1 meters for power classes 1, 2, or 3 (at 100, 2.5,	computer, PDA, cell phone, or portable media player (such as an iPod with a Bluetooth adapter) transferring data to or	Bluetooth uses the 2.45 GHz ISM radio frequency band in the USA; a Bluetooth "master" can communicat	Bluetooth® Wi Fi CERTIFIED

		or 1 milliwatt)	from a device such as a mouse, keyboard, digital camera, printer, scanner, speakers, headphones, or microphone as appropriate.	e with up to 7 devices playing the role of the "slaves" in a "piconet"; two or more piconets can be connected together to form a "scatternet"	