

Lecture 3: Back to fundamentals

analogue	A quantity that can take any value, e.g. temperature, weight. In CL context a voltage that can take any value.
Analogue computer	a particular type of computer based on analogue voltages
digital	A quantity that takes the value 0 or 1 (represented by the presence or absence of a voltage).
digital computer	Computer based on manipulating digital voltages (virtually all current computers)
bit	The ‘atom’ of information processing that can take the value 0 or 1.
byte	8 bits taken together, taking one of $2^8 = 256$ possible values
octet	synonym for byte
decimal	system of arithmetic based on 10 digits, 0-9
hexadecimal	system of arithmetic based on 16 digits, 0-9 and A-F
K	1000 (scientific) or 1024 (computer)
octal	system of arithmetic based on 8 digits, 0-7
word	the number of bits a processor can conveniently handle in one operation
processor	component of a computer that executes the instructions fed to it as it reads a program
CPU	Central Processing Unit; synonym for processor here
serial	(communications) A process of sending bits down a single wire in sequence
parallel	(communications) A process of sending bits down multiple wires in one operation.
peripheral	device attached directly to a computer, e.g. printer, scanner , camera, trackball .
USB	Universal Serial Bus – Technology supporting a serial port found on many modern computers for attaching peripherals such as scanners , monitors, cameras etc.

bus	A mini-network interconnecting various parts of a computer and/or the computer to its peripherals . May be serial (USB) for connecting peripherals or very high-speed parallel if within the computer
port	a socket on a computer which allows connection to peripherals, networks etc. The term also includes the electronics and software needed to drive the port.
CD-ROM	Compact Disk, Read-Only Memory. Data storage medium based on CD technology.
PC	Personal Computer
unsigned integer	a positive integer: 0, 1, 2, ...
Kb	<u>Kilobytes</u> . Sometimes confusingly used to mean Kilobits/second when referring to modem and line speeds. Meaning often has to be deduced from context.
Kb/s	Kilobits/second: measure of connection speed
MB/s	Megabytes/second: usually used as measure of disk data transfer rates
MHz	MegaHertz: measure of frequency, or specifically of the frequency of the principal clock signal that drives all operations in a processor. A partial indication therefore of processor speed.
ASCII	7 bit standard for encoding characters
Unicode	Standard for encoding characters that allows non-Roman character sets
parity	additional 8 th bit included in characters to allow error checking
quoting	Process of marking a character in a document, mail etc. that would otherwise become lost or corrupted in transit; An example would be ç
email	General term used to describe both the content of an e-mail message, the application which was used to transmit it and the mechanisms responsible for its delivery.
Attachment	A piece of mail content which it does not make sense to include in the body of a mail message, e.g. a Word document, image or movie file or possibly a large text file intended to be kept separately from the mail message
MIME	Multimedia Internet Mail Extension (? – check)
base64	A text format used in the transmission of binary files or attachments The file is encoded in base64, sent over mail then decoded at the far end into its original form.

Windows	Generic name given to Microsoft's operating systems, sometimes abbreviated to WinXX - Current versions include Win95, Win98, WinME, Windows CE, Windows NT and Windows 2000.
window	Rectangular (usually) frame bounding an area allocated to an application within a windowing environment such as Windows, MacOS or X.
Unix	Operating system offering a rather different look-and-feel to Windows and MacOS. Strengths include easier system management, more powerful and accessible scripting, a vast array of free software and more powerful and integrated communications. The down side is that it is less intuitive to the novice user looking to maintain their own system.
Linux	Non-proprietary version of Unix (i.e. no company owns it), freely available to anyone.

Lecture 5: Beyond the Box

System Mainframe	A large corporate central computer, usually processing a fairly fixed pattern of work, e.g. transactions (Bank), optimisation (Airline) or payroll
Server	a
Laptop	Portable computer system with all the functionality of a desktop PC
Notebook	An ultra-lightweight laptop. Might be running a cut-down system
Palmtop	A pocket computer with a calculator-style keyboard or stylus input (for small size). Will run a small set of dedicated applications and probably expects to be connected to a desktop PC from time to time to upload or download material that requires a full keyboard etc.
PDA	see Personal Digital Assistant
Personal Digital Assistant	A slightly more general description of the class of computers into which palmtops fit.
Application	A sophisticated computer program bundled with help, tutorials, manuals, add-ons, technical support and so on; a fully-fledged product (e.g. Word, Photoshop)
Handshake	An exchange between communicating devices that ensures data has been transmitted successfully and is known to have been transmitted
Scaleable	Something that continues to work even when the numbers using it get large. A cellular phone network is scalable; Trying to attach all computers in a building to a single communications wire would not be.
Trackball	An 'inverted mouse' – a ball in a cup which can be rotated in any direction. Gives greater fine control than a mouse.

haptic glove	A glove with sensors that record the position of the fingers and joints and relay them to a computer; Allows manipulation of ‘virtual objects’ in a virtual world.
VR headset	Virtual Reality headset. A helmet containing one display screen for each eye. With suitable software the result is a full stereoscopic view of a computer simulation or game. The effect is real enough to be termed ‘virtual reality’.
UPC	Universal Product code. One of many Barcode standards
ISBN	International Standard Book Number: barcode standard for identifying books
Checksum	An additional (redundant) digit added to a number allowing verification. A simple checksum might be to add all the digits together and take the remainder after dividing by 10. If an error creeps in then the sum of the digits will no longer equal the check digit.
Ppm	Pages Per Minute; a measure of printer speed
Pixel	The unit of information in an image when displayed. An image will be represented by an array of coloured dots or pixels.
Dpi	Dots Per Inch; a measure of scanner or printer resolution
Latency	Time delay before something happens
MP3	MPEG-1 Audio Layer 3; a format which allows compression of music files
Set-top box	(Digital) Intelligent piece of hardware interfacing to satellite or cable services. Modern set-top boxes have many of the characteristics of permanently networked PCs.
STB	Set-top box
Distributed	Opposite of centralised. A function which occurs among a number of cooperating entities over a network
Client	recipient of services from a server . A browser is a client of web services
x86	Name given collectively to the Intel range of processors – 8086, 186, 286, 386, 486, Pentium. These processors form a family and are hence referred to collectively as ‘x86’
Pentium	Intel’s name for their principal range of processors
DTP	Desk-top Publishing. This term could include use of Word but is generally taken to refer to the preparation of documents to full publishing standards.
Multimedia	Presentation material other than text or collections of different types of media – Sound, movie clips etc.

SGI	Silicon Graphics Industries – manufacturer of computer workstations with a degree of specialisation in graphics. SGI machines were used in Jurassic Park etc.
Sun	Manufacturer of computer workstations. The University's main supplier of such machines for many years
IBM	International Business Machines. Major computer manufacturer
Dock	A unit supplied with connections to power, communications and possibly full keyboard and monitor. Sliding a laptop into a dock effectively converts it into a fully-configured desktop machine. It gets round the trade-off of either having to have two machines or suffer the ergonomic disadvantages of using a laptop as a desktop machine.

Lecture 6: Standalone Applications, Presentation graphics

Glitch	Bug, problem, hold-up ...
Dissemination	Distribution of information, e.g. in a lecture or videocast
GIS	Geographical Information System – a database with added facilities for handling and displaying map and associated information
CAD	Computer-Aided Design (e.g. of cars or machined components)
compiler/debugger	A program which takes as input source (a text representation of a program) and generates executable code (e.g. .EXE on a PC) ready for running.
Project planner	An application that handles the kind of information needed during a large project – time lines, resource usage, critical paths, dependencies etc.
AGP	Advanced Graphics Port – fast dedicated graphics interface within a computer into which a fast graphics card may be plugged.
Registration	Process of supplying a software vendor with information about your purchase of their software which gives you access to technical support, updates, information etc. (also allows them to bombard you with sales information)
Installation	Process of preparing software for first use, usually through putting a CD in the slot, waiting for it to auto-run or looking for a program called “setup.exe” and running it then answering the questions and doing what it says.
<u>Plugin</u>	(browser) program that can be installed with a browser that gives it added functionality. Plugins are generally run when a page is sent from the server with a matching MIME-type
Download	Process of reading a file from a server, e.g. an application, MP-3 file etc. from a server.

FAQ	First (or Frequently) Asked Questions file. A set of stock answers
beta-release	Software that is ready to be sent out to users but for which bug-testing is not complete. Beta-release users accept that they will be guinea-pigs in exchange for getting their hands on the latest software.
Wizard	A program that guides you through a complex procedure
Template	An example of a style etc. that you can take and modify
clip art	Cartoons etc. that can be dropped into a document to liven it up. Many word processing and presentation graphics packages (notably Corel) have large clip-art libraries
hyperlink	A link from one document to another, activated by clicking on text or graphics. Nowadays thought of in terms of the World Wide Web but the term can refer to links within a document or 'virtual card file'
header	Text at the top of a document containing, e.g. page number, title etc.
footer	Text at the bottom of a document containing, e.g. page number, title etc.
<u>MIME</u> <u>MP3</u> <u>MPEG</u>	
BIOS	Basic Input/Output System. On PCs, the BIOS contains all the code required to control the keyboard, basic graphics, disk drives, serial communications, and a number of miscellaneous functions. It is just enough for basic diagnostics and to start the bootstrap process.
Bus	A single data channel connecting multiple intelligent items within a computer system. On a computer mother board the bus will consist of numerous parallel 'wires' (tracks on the board) which lead to among other things the sockets into which expansion cards are plugged. Each device attached to the bus will have one pin attached to each wire and when it receives the go-ahead will transmit data at high speed in parallel (i.e. on each wire simultaneously). The term is also used to describe serial networks (such as Ethernet or USB) where all devices share one communications channel. In both cases intelligence is needed to ensure that devices access the bus in a controlled manner and do not 'all shout at once'.
cache	A temporary fast store of material that would otherwise have to be fetched from a relatively slow source. Examples include images within Web pages which are cached within a desktop PC by the browser and instructions and data cached by a processor during execution of a program. The timescale and size of the cached objects is very different in both cases but the principle is the same: the cached object is fetched on the second and subsequent times it is needed rather than having to go right back to the original source.

CD-I	Compact Disk – Interactive
CD-ROM	Compact Disk – Read-Only Memory
CD-RW	Compact Disk – rewritable
chipset	Set of semiconductor chips found on a computer motherboard that provide support functions for the processor such as managing memory, sound etc.
DAT	Digital Audio Tape
DIMM	Dual In-Line Memory Module – a small board containing memory (RAM) chips and a connector. Plugs into a slot inside the computer to provide RAM memory
DOS	Disk Operating System. The original operating system for PCs. DOS (PC-DOS, MS-DOS) presents a command-line interface i.e. you have to type commands at it and a mouse is not required. Current Windows systems have a DOS interface which can be useful when diagnosing problems among other things.
dpi	Dots per Inch; measure of the resolution of a printer, scanner or monitor
DVD	Digital Video Disk
EBCDIC	Extended Binary Coded Decimal – a specification of how characters can be encoded within a byte inside a computer. Not nearly as prevalent as ASCII.
ECC	Type of RAM memory used on PCs
EDO	Type of RAM memory used on PCs
FST	Flatter Squarer Tube as used to describe monitors or TV sets
Gb	Gigabytes – 10^9 or 1,000,000,000 bytes approx.
GIF	[...] Image storage format particularly suited to drawings and artwork. Lossless but limited to 256 possible colours.
GUI	Graphical User Interface (e.g. Windows, X, and the user interface to Macs) as opposed to command-line interfaces such as DOS
hex, hexadecimal	A form of numerical notation based on base-16 arithmetic; Uses digits 0-9 and A-F e.g. #7fc07f
IDE	[...] Specification of a disk interface for PCs and equivalent machines. Most PC hard disks are IDE.

ISA	[...] Specification of the older of the two bus interfaces found on PCs (the other is PCI). PCs from about 1997-2000 usually had some expansion slots of each bus type on the mother board and you would see an expansion card (e.g. a sound card) described as a “PCI card” or an “ISA card”.
JPEG	[...] Image storage format particularly suited to pictures of real-world objects. Lossy, with provision for selection of image quality and allows full 24-bit colour.
Kb	Kilobytes – 10^3 or 1,000 bytes (actually 1,024 when applied to computers)
Mb	Megabytes – 10^6 or 1,000,000 bytes approx.
Octal	System of counting and number representation in base 8 as opposed to the familiar base 10. Octal uses digits 0-7 and the first few octal numbers run 0, 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13 ... 75, 76, 77, 100 ...
Path	the text string needed by a program to find some entity (e.g. file or device). Paths may be absolute or relative and will consist of host an directory names separated by some path separator , e.g. ‘\’. Examples: d:\slides\lecture22\slide1.doc; ..\foo.htm
Pb	Petabytes – 10^{15} or 1,000,000,000,000,000 bytes approx.
PC	Personal Computer
PCI	[...] Specification of the newer of the two bus interfaces found on PCs (the other is ISA). PCs from about 1997-2000 usually had some expansion slots of each bus type on the mother board and you would see an expansion card (e.g. a sound card) described as a “PCI card” or an “ISA card”. The PCI bus allows for a degree of automatic configuring of expansion cards (plug and play)
PDA	Personal Digital Assistant; hand-held computer which runs applications such as diary/organiser, text processor, spreadsheet
ppm	Pages Per Minute – measure of printer speed
RAM	Random Access Memory – semiconductor memory found in all computers
ROM	Read-only Memory
RTD	Return to Depot/Dealer
SCSI	Small Computer Systems Interface
SIMM	Single In-Line Memory Module
Tb	Terabytes – 10^{12} or 1,000,000,000,000 bytes approx
Unicode	Standard for representing characters within a computer or computer file. Unicode is designed to handle non-Roman character sets.

USB	Universal Serial Bus – fast connection for attaching devices to a modern PC
VR	Virtual Reality
Word	a collection of bits that can be processed in one operation by a processor. The word length (typically 32 bits but increasingly 64) contributes to the processor's performance and determines how much RAM can conveniently be used by the processor.
ZIP (1)	A format and associated programs for compressing, bundling and storing files.
Zip (2)	A proprietary disk and drive, slightly larger than a floppy disk capable of storing up to 250 Mb