ICT Module 5 Terminology

Why learn terminology?

Both to understand the course and to be able to answer an exam question properly, you will need to understand all of the terminology associated with this unit.

Knowing terminology empowers you to be able to understand the subject and to show to the examiner that you understand the questions set.

This booklet outlines the terminology that you must know for Module 4.

(Relational) Database Management System (*RDBMS*)	Is a *collection of programs* that allows *manipulation of data, definition of a data dictionary* and where the data is *stored in tables* that are *related through linked fields.* Provides a buffer between the user and the data, controlling access and providing consistent view to level of user.
Backup options	This is a long list from ICT2 – frequency, what gets backed up, media used etc The ICT5 spin is to think about what is suitable for a situation
Backup scheduling	This is the timing of the backup – daily is useless on a real-time system for the live data. Allow time in the daily run schedule for backups to take place
Backup storage	Again, suitability is the key – is a RAID system really necessary? Fire-proof safe is OK for fires, but should there be copy/ies off-site (aligned to disaster recovery in ICT4)
Client/server database	Where the data is held on the server and the client (or attached computer) requests the data from the server, which supplies it.
Configuration	Is the total platform that the organisation operates it ICT systems – the network, the bits of hardware, the systems software, including what operating system(s) are to be used.
Data consistency	Normalising data means that the same data is not normally held more than once, so a change to the single held item of data results in all functions using the changed value (so no "old" addresses hiding somewhere in the system)

Originates from Kesgrave High School with thanks to students and Billericay School.

Data distribution	Where data is held in different places – e.g. in a bank, head office has a full copy of all the data, but each branch downloads their local account information each morning and work on the local copy of the data all day, uploading the local data for updating the master copy in the evening.
Data independence	In "old days" if the structure of a file changed (a new field added, for instance) then every program that used that file had to be changed, taking up time and money. With RDBMS's each program only says what fields it will be using, therefore changes to where that field is in the structure do not affect the programs. The data is "independent" of the programs –also known as program-data independence.
Data integrity	RDBMS's are designed so that related data stay related – no "lost" data through using bad links. Having unique identifying fields/keys on each set of data (entity) is the mechanism.
Data redundancy	If data is repeated unnecessarily (i.e. not for reasons of having a link field) then space is wasted – this is called redundancy
Database Administrator	Role is **administrator**. Responsibilities include Monitoring performance of the RDBMS; Notifying users of changes made; allocating user access; providing training to the users; in charge of backup procedure; making data dictionary changes. In small businesses may also take on the role of database designer
Database Designer	Highly technical and skilled role in large organisations. Takes logical system design and applies it using the RDBMS to create a fully normalised and functional database system, with all rules and procedures in place.
De facto standards	Happen (or arise) as a result of market success (e.g. MS-Windows over Mac OS), through popular choice; Not legally bound to adhere, but common sense says if you don't you won't sell any of your product! The opposite, more formal, are "de Jure" standards, set by professional bodies and passed to the industry – things like voltage and so on in different countries.
Emulation hardware	Equipment that attached to an existing system to make it appear to be a different platform (e.g. A video card that emulates a different graphics capability)

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Emulation software	Software that makes the programs behave on a non-compatible system as they would on a compatible one e.g. allows software to read file types that would not normally be on their list
Entity relationships	Entities (stores of related data, like files in old-style file/record/data terminology) are related in an RDBMS. Relationships are one-to-one; one-to-many, many-to-one or many-to-many. E.g. Each child has one mother; Each order has many items; each item can be bought from many suppliers; many GCSE grades can be had by many students.
Evaluation criteria (also see list)	List of indicators that are important to this system. Normally added weightings to prioritise the items.
Evaluation of software	If investing in new system, two fold evaluation/decision making process. 1. How to buy (in-house etc), then if package, 2. comparisons. Pin down requirements, get list of criteria, gather data and weight and evaluate, produce report, decide.
Evaluation report	Bring together findings from the evaluation – content includes – methodology used; actual evaluation; recommendations; justification for the recommendation.
Human computer interaction	The "touchy-feely" factors – User friendliness; help for novices; shortcuts for experts; maximising efficiency by making use of human long-term memory
Human computer interface	This is the Command-driven, Menu-driven, Graphical user interface list of ICT2. Factors like consistency of screen design, use of colour, meaningful icons, layout same as data capture form, built in demos, help key, function keys do same thing throughout systems, meaningful error messages
Information management policy	An overriding statement of how the organisation is going to approach the storage and processing of its data and information; including what hardware and software platform is to be used through the company. E.g. may make a statement to always stick to Microsoft products and to upgrade every 12 months; may state that all machine must have x amount of RAM, x amount of processor power and so on.

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Maintenance releases	These are when the developer either releases corrected versions of the software or where functionality has been added to the original system or package. Sometimes, developments are phased deliberately (especially with rapid development methods) so that functionality is available a bit at a time and improvements "slipped in" with some new functionality.
Network accounting	Accounting software records the who, what, when and how long, for the express purpose of charging for (e.g.) CPU use or application use – often used in large organisations for budgetary purposes.
Network audit	Monitoring of who logs on, when and where, what applications they use, what sites they visit (on the internet) and so on – mainly for ensuring safety and following procedures
Network environments	Choice affects user interface, and what they can and can't see – security procedures, control over software, control over files and data within, access rights and so on. Network strategy differs from organisation to organisation, differing needs and where the equipment is sited – e.g. network clients in public places will be subject to stricter security than those in a single office site.
Network security	Using a secure operating system to provide login and password system, access rights, concerns about safety of software and data held on the network. Measure to prevent unlawful or illegal access as in ICT1 & 2 – physical, procedural, software-based, encryption and so on
Normalisation	The concept of *breaking down complex data structures* into simpler forms.
Protocols & standards	Reason – portability of data across a wide range of hardware and software and file types. Many exist for various types of hardware – and communications systems and networks.

Testing methods	Unit – each element, piece of software tested with typical, erroneous and extreme case;

	functional, using data end-to-end of the system, testing as many logical paths as possible with contrived data; in a software house situation, this is known as alpha (a) testing; End user testing of functionality with real data from current data pool – in a software house situation this is known as beta (β) testing; performance and volume testing – using enough data to simulate real life to check timings and coping ability (robustness) of the system. Web sites are often tested with many people simultaneously hitting the site to see if it crashes or copes. Black box and White box testing are also terms used, conceptually as alternatives to functional testing and unit testing.
Ways of developing software	In-house development projects, outsourcing (someone else does it for you, but still specially for you/bespoke), user writes (normally only simple reports off a larger system). Other way is external software house develops to one client's specification then adapts for general selling – or develops to an industry standard piece of legislation, or a seen gap in the market where similar businesses all reinventing the wheel, then markets to target area.

- **Factors influencing upgrade decisions**
  - Hardware developments
  - Task driven changes
  - Software changes (new systems introduced)
  - Software developments
  - Organisation ethos changes (management changes?)

- **Evaluation criteria, including -**
  - An agreed problem specification (i.e. what is it for)
  - Functionality requirements
  - How it performs, benchmarking – speed or volume
  - Usability and its Human Computer Interface
  - Compatibility with existing software and systems software (and hardware)
  - Transferability of data from old system to new
  - Robustness (aligned to benchmarking, volatility of product and number of users)
  - User support options available aligned to users of the system
  - Resource requirements (hardware, software and human)
  - Upgradability of product
  - Portability of product

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- Financial issues (one off costs, on-going maintenance costs)