

## Unit 6: Software Development – Design – Glossary

Term	Definition
Analysis Stage	At this stage the existing system is described and evaluated; the user requirements for the new system are determined; an analysis of the data that will be used in the system is undertaken; and the way in which the new system will solve the problem is outlined.
Attributes	A named value or relationship that exists for some or all instances of some entity and is directly associated with that instance.
Bespoke	Software that is developed for a specific, unique purpose.
Bottom-Up	This involves designing a number of small modules before designing the larger structure. It is often difficult to ensure a working system using this method.
Classical / Waterfall	A serial sequential life-cycle methodology where each step is drawn to the right of and below the preceding stage so that the development flows.
Context Diagram	A Level 0 or high-level DFD showing how the system interacts with the outside world.
COTS	Customised 'off-the-shelf' software systems that are purchased as packages and then modified to meet a particular client's needs.
Data Dictionary	Lists the entities in a system, the name and description of each attribute and the relationships between entities.
Data Flow Diagram (DFD)	A diagrammatic way of representing the flow of information in a system.
Data Store	Where data is stored or held in the system and represents real-world stores of data such as in lists, files, tables etc.
Decision Table	A table which specifies the actions to be taken when certain conditions arise.
Design Stage	At this stage all of the different elements of the solution are designed in line with the requirements set out in the analysis stage. This involves creating design specifications for hardware, software, databases, telecommunication links, personnel and procedures.
Document Analysis	Analysing documents used within the current system. They generally represent the formal information flows within the system. All documents currently used should be analysed. These may include input and output documents. By analysing documents an understanding may arise as to how data is passed around and used in the system.
Entity	In data modelling an entity is some unit of data that can be classified and have stated relationships to other entities.
Entity Relationship Diagram (ERD)	A technique for representing the structure of data in a system using entities and the relationships between those entities.

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External Entity	A person or part of an organisation, which enters or receives data from the system, but is considered to be outside the scope of the new system.
Feasibility Study	Carried out to check whether it will be cost effective and sensible to go ahead and analyse the problem more fully.
Flowchart	A graphical representation of the operations involved in a process or system.
Foreign Key	Attributes contained within a database record (or other collection of related data items) which uniquely identify another record, but not the one within which they are contained. A foreign key is a reference from one record to another.
Implementation Stage	The stage at which the system is installed and used in the real situation it was designed for. The stages involved include: acquiring hardware and software, training users, installing and user-testing the system, the actual implementation of the system and overseeing user acceptance.
Interviews	Interviews allow the analyst to gather very detailed information. Questions can be tailored to the person being interviewed or to clarify information already gathered.
Methodology	An organised, documented set of procedures and guidelines for one or more phases of the software life cycle, such as analysis or design. Many methodologies include a diagramming notation for documenting the results of the procedure; a step-by-step approach for carrying out the procedure; and an objective (ideally quantified) set of criteria for determining whether the results of the procedure are of acceptable quality.
Observations	Sometimes the best way to gather information. This may be for short specific periods of time or for long intensive sessions. Observations may be carried out by either watching or videoing.
Problem/ Requirements list (PRL)	The PRL acts as a formal document which specifies the problems currently being experienced and a definition of the requirements of the new system.
Primary Key	Used to uniquely identify a particular occurrence of an entity.
Process	A set of activity which converts a defined set of inputs into a defined set of outputs.
Process Specification	Describes in more detail exactly what each process does.
Prototyping	A life cycle methodology that involves constructing a model of the system, which implements one or more parts of the client's requirements, but does not constitute a complete system. The prototype enables requirements to be identified and refined and a new prototype to be developed. This process of iteration may be repeated.

Term	Definition
Questionnaires	A set of questions which may be prepared on paper. They are a written set of questions given to people to fill in. A popular method of gathering information when there are a large number of people involved.
RAD	Rapid Applications development. A life cycle methodology that utilises prototyping to achieve a usable software system in a very short time scale, usually less than six months.
Record	The basic unit of data stored in a database. It is a collection of items, which may be of differing data types, all relating to the individual or object the record describes and is treated as a unit for processing. Most data files contain the same type of information but about different individuals or objects.
Relationship	An association between entities in an ERD.
Structured English	A method for describing the logical processes that will be undertaken in the new system. It is similar to coding language and focuses on the key constructs of sequence, selection and iteration.
Systems Flowchart	A diagram used to describe complete data processing systems.
Top-down	This is where the overall problem is defined in simple terms and then split into a number of smaller sub-tasks. Each of these sub-tasks is successively split and refined until they are small enough to be understood and programmed.