Systems Analysis and Design

2 Systems Life Cycle

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We look at the stages in the development of a system.

2.1 Players

There are three players:

- the managers - make decisions
- the software development team - systems analysts, programmers, testers - create the system
- the users - use the system

The best systems are developed when all three players agree on what is required and are equaly happy with the end result.

2.2 Purpose

The purpose of the systems development life cycle is to enable

- the right system
- to be built right
- right on time and
- to budget

If a system for making buns was required but a system for making guns was delivered - failure.

If the system was not built right and crashed frequently - failure.

If the system was not ready on time - failure.

If the system cost more than was budgeted for - failure.

2.3 Systems Life Cycle

The stages of a systems life cycle include:

- **Feasibility Study** - management decides it wants a new system or an improvement to an existing system. The systems analyst determines whether what management wants is possible, and if so, at what cost. Management then decide either to go ahead, abandon the idea or change the idea.

- **Analysis** - the systems analyst examines how current systems work and determines WHAT is required of the new system. The requirements are written in a specification. Get the specification wrong and there is no chance of the rest being right.

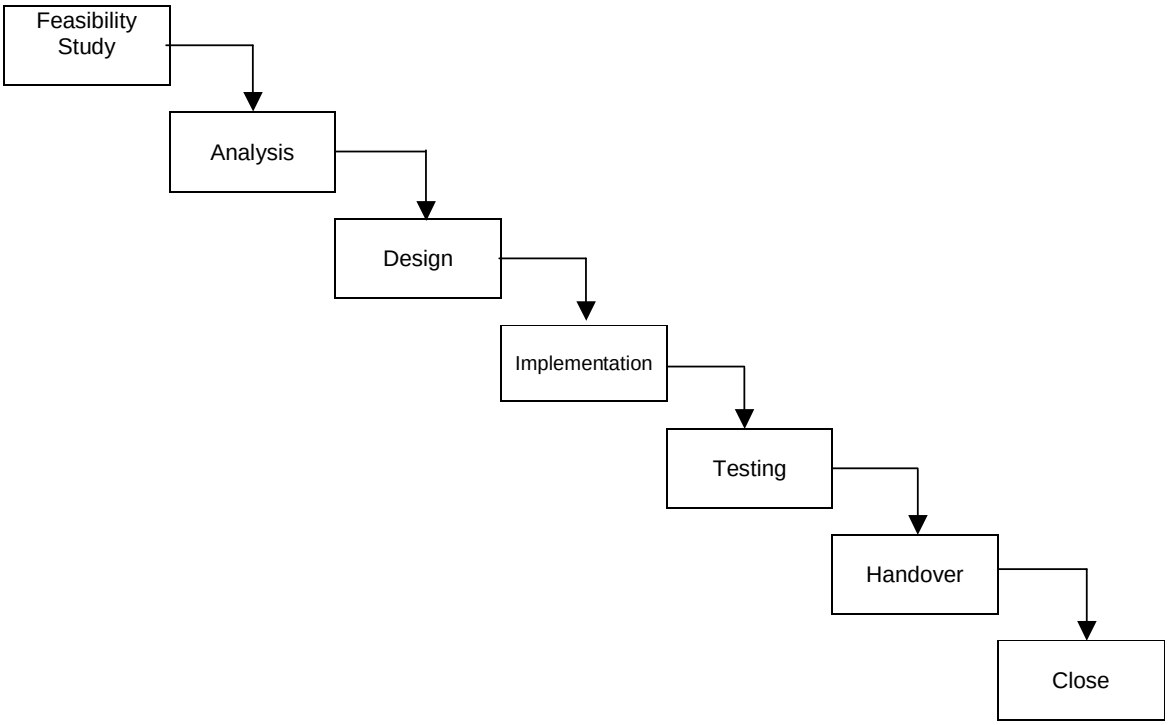
- **Design** - the systems analyst specifies HOW the new system is to work. The design document is then given to the software development team. Mistakes made in the design document can be costly to put right, especially if they are not discovered until after the implementation stage.

- **Implementation** - the development team creates the software according to the given design. Communication between team members is essential. Mistakes made here cost time and money to put right. Good project management ensures the right software is built right and delivered right on time.

- **Testing** - the testers look for errors in the implementation. A successful test is one that finds an error. Testing also shows that the software works according to requirements; this is known as quality assurance. Errors found here are either fixed or documented as known problems to be fixed at a later date.

- **Handover** - the users are trained and the new system goes live, either as a big bang (old system switched off, new system switched on), or as a pilot (trialed by a chosen few), or phased in (switched on a little at a time), or run in parallel with the existing system until the new system becomes proven.

- **Close** - eventually the system becomes obsolete and is abandoned



Exercise 2.1

1. By copying and completing the table shown below, and refering to one particular example you are familiar with, evaluate the stages of the systems life cycle that you actually use when given a program, spreadsheet or database to implement.

Stage	**What should be done**	**What you actually do**
Feasibility study	Decide on an assignment	
Analysis	Determine what is required	
Design	Determine how to proceed	
Implementation	Actually write the required program/database/spreadhseet correctly and on time	
Testing	Find and document errors.	
Handover	Hand over the finished assignment	
Close	Assignment closed	

Bibliography

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