

System Analysis and Design



Systems In An Organizations

Payroll System

Manufacturing System

Communication System

Networking System

System Analyst

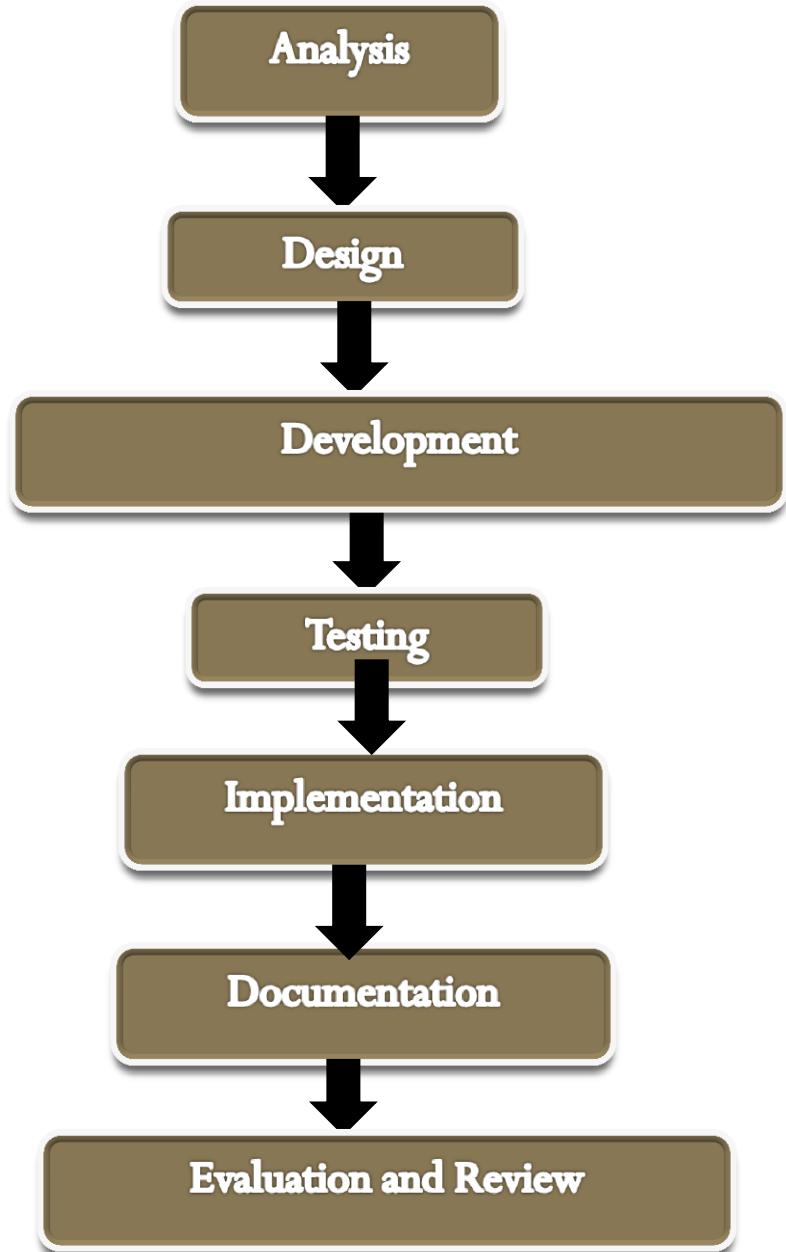


Need for System Analysis and Design

Systems analysis and design is used to analyze, design, and implement improvements in the support of users and the functioning of businesses that can be accomplished through the use of computerized information systems.

System Development Life Cycle

*A System Analyst needs
to perform the given
steps for System
Development Life
Cycle.*



Analysis



- There are a number of techniques a system analyst uses to gather information which includes observations, interviews, questionnaires, collecting documents etc
- The system analyst look to understand how the system works, and to try and identify problems that need to be fixed.
- **Identifying the input, process and output:** every system has inputs and outputs and the systems analyst needs to identify the data input to the present system, and the data output. This is because any new system that is designed will have to deal with similar inputs and outputs as the present system.
- **Identify the problem:** the system analyst tries and identify the problem in a system and then fixes the problem for smooth functioning.
- **New system requirement specification:** the system analyst can begin to plan how the new system will fix those problems.

- The system analyst specifies a list of requirement for the new system. This list is usually called the **Requirement Specification**.

- Hardware and software requirements
- Agreeing the objectives with the customer
- Identifying and agreeing the customer's requirement
- Interpreting the customer requirement
- Producing cost benefit analysis
- Producing a data flow diagram

Design

Once the analysis has taken place and the system analyst has some idea of the scale of the problem and what need to be done, the next stage is to design the key parts of the recommended system.



- The screen layout is designed
- The error messages are written
- The way that you will navigate from one page to another is defined
- The menu buttons are chosen
- The font style, size and colour are picked.
- How data will be dealt with is specified
- What documents can be printed out.
- The hardware will be needed

Development

- This phase is where the system starts to be written by the software programmers. They follow the requirement specifications from the design stage and start to create the new system.
- Before actually implementing the new system into operation, a test run of the system is done for removing the bugs, if any. It is an important phase of a successful system.



- The requirement specification is followed from the design stage and start to create the new system.
- The main things that take place during this phase are
- The programmers write and test the code for the system.
- A team ensure that the hardware and software required to run the new system are purchased and in place.
- A team of testers are assembled in readiness to test the new system. They start to write a test plan which details all of the test that they will carry out.

Testing

- Once the system has been coded, it needs to be thoroughly tested by a team of testers.
- A test plan will have been written while the system is being developed.
- The test plan will contain details of every single thing which needs to be tested
- For example:
- The system opens and closes properly
- Work can be saved
- Work can be printed
- Data is saved to the correct place
- When you do something wrong, an error message appears

Implementation

Implementation is the stage of a project during which theory is turned into practice.



- After having the user acceptance of the new system developed, the implementation phase begins.
- Implementation is the stage of a project during which theory is turned into practice.
- The major steps involved in this phase are:
 - Acquisition and installation of hardware and software
 - Conversion
 - User training
 - Documentation

Documentation

User Documentation

Technical Documentation

User Documentation

This is intended to help the user of the system. The users are normally non-technical people, who don't need to know how the system works. They just need to know how to use it.

User documentation includes:

- List of minimum hardware and software required to use the system
- How to install the system
- How to start / stop the system
- Screenshots showing the system in typical use
- Example inputs and outputs
- Explanation of any error messages that might be shown
- A troubleshooting guide

Technical Document

The technical document is intended to help the maintainers of the system (the people who need to keep the system running smoothly, fix problems etc.) .The maintainers are usually technical people, who need to know how the system works.

Technical documentation usually includes:

- Details of the hardware and software required for the system
- Details of data structure (data types, field names etc)
- Details of expected inputs
- Details of validation checks
- Details of how data is processed
- Diagram showing how data moves through the system

Evaluation and Review



Once the new system has been implemented and is in full use, the system should be evaluated (this means that we take a long, critical look at it).

The purpose of an evaluation is to assess the system to see if it does what it was supposed to do, that it is working well, and that everyone is happy with it