

System Development Life Cycle

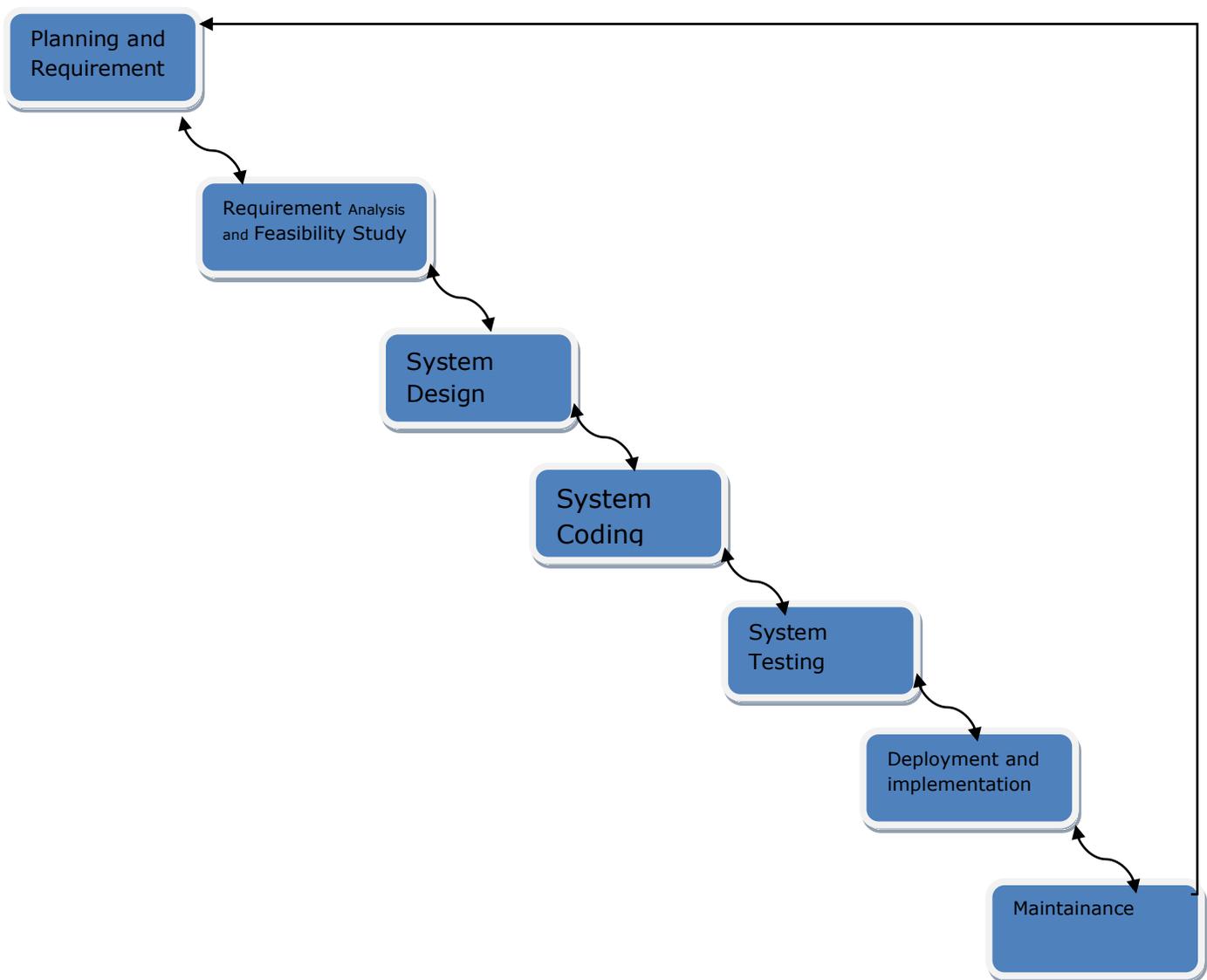
An effective System Development Life Cycle (SDLC) should result in a high quality system that meets customer expectations, reaches completion within time and cost evaluations, and works effectively and efficiently in the current and planned Information Technology infrastructure.

System Development Life Cycle (SDLC) is a conceptual model which includes policies and procedures for developing or altering systems throughout their life cycles.

System development life cycle is the systematic approach to develop a system which explicitly break down the work into phases that are required to implement either new or modified information system. An effective system development life cycle should result in a high quality system that meets customer expectations, completion within time allotted and cost evaluation along with work effectively and efficiently in the current and planned information technology infrastructure. It is a conceptual model which includes policies and procedures for developing or changing system through their life cycle.

Actually, system development is not the easy task, to make it easy the overall development process is divided in multiple phases where particular activity is performed. Generally, in SDLC overall development is divided in seven steps or phases which can be written as :-

1. Planning and Requirement Gathering
2. Requirement Analysis and Feasibility Study.
3. System Design
4. System Coding
5. System Testing
6. Deployment or Implementation
7. Maintenance



1. Requirement Gathering :-

It is the first phase of system development where we define the problem by successive requirement gathering process such as interview of stakeholder, user, and other participant of the organization, questionnaire design, existing system observations and observation of the analyst. It is the important phase where objectives and planning data is generally prepared and submitted to the next phase as documentation.

2. Analysis and feasibility study :-

It is the second phase of development where series of analysis is performed to understand the business need and processing needs. Requirement is categorized by removing redundancy from the gathered data and system specification is prepared. Again feasibility analysis is done on different parameter such as cost benefit analysis operational feasibility, technical feasibility, financial feasibility, legal feasibility, political feasibility, scheduling feasibility and other type of feasibility study(tangible and intangible). At the end of analysis, an analysis report is submitted in form of system specification and feasibility reports. Finally submitted to the next phase of development. Generally, a group of analyst having knowledge of business, development of system, political expertise etc.. has perform the analysis.

3. System Design :-

It is the important phase of development where architectural engineer prepare detailed components of the system with sub-system with their internal arrangement and data flow to built a proposed system that meet all the requirement submitted from the previous phase. Total input component (Input design), Output component (, process component and interface component are designed here. Data flow diagram, structure diagram, decision tree, algorithm, flowchart and pseudo code are utilized as a tool for design of the system. A well

designed system provide an assurance of success of development where as poorer design reflect to unsuccessful.

4. Coding :-

This is important phase of development where programmer or coder play important role. They write the code in particular programming language as per the system specification. Here, set of programmer work for coding the system under the monitor and control of a Group Leader . After , coding all the components (input, output, processing and interfaces), all components are organized together to build a new proposed system. Each component is tested as primary testing in the development Site.

5. System Testing –

The testing phase of the SDLC is arguably one of the most important. It is impossible to deliver quality system without testing. There is a wide variety of testing necessary to measure quality:

- Code quality
- Unit testing (functional tests)
- Integration testing
- Performance testing
- Security testing

6. Deployment

The deployment phase is, ideally, a highly automated phase. In high-maturity enterprises, this phase is almost invisible; software is deployed the instant it is ready. Enterprises with lower maturity, or in some highly regulated industries, the process involves some manual approvals. However, even in those cases it is best for the deployment itself to be fully automated in a [continuous deployment](#) model. [Application Release Automation \(ARA\)](#) tools are used in medium and large-size enterprises to automate the deployment of applications to Production environments. ARA systems are usually integrated with Continuous

Integration tools. The output of this phase is the release to Production of working software

7. Maintenance/Support

Include all the activities such as phone support or physical on-site support for users that is required once the system is installing.

Implement the changes that software might undergo over a period of time, or implement any new requirements after the software is deployed at the customer location. It also includes handling the residual errors and resolve any issues that may exist in the system even after the testing phase. Maintenance and support may be needed for a longer time for large systems and for a short time for smaller systems.

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