SDLC

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Definition

The Software Development Life Cycle (SDLC) model is

- An approach to have a linear sequence of steps to develop a system or software product
- To execute the process from start to finish without revisiting any previous step
- One of the oldest systems development models and is still the most commonly used

SDLC

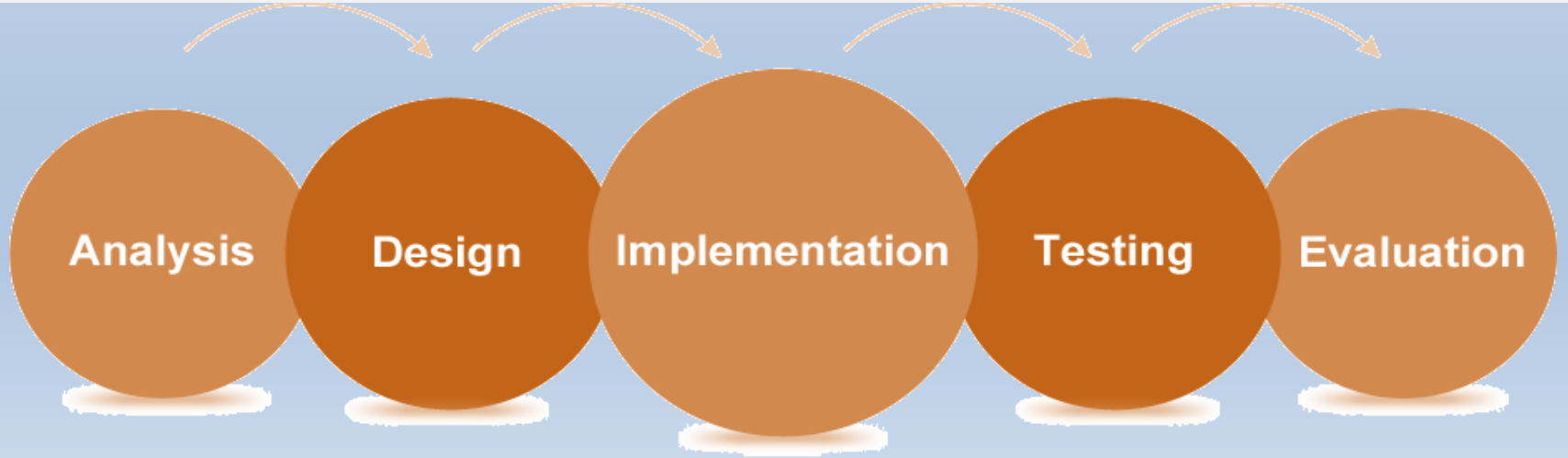
The systems development life cycle (**SDLC**) is a term used in:

Systems Engineering

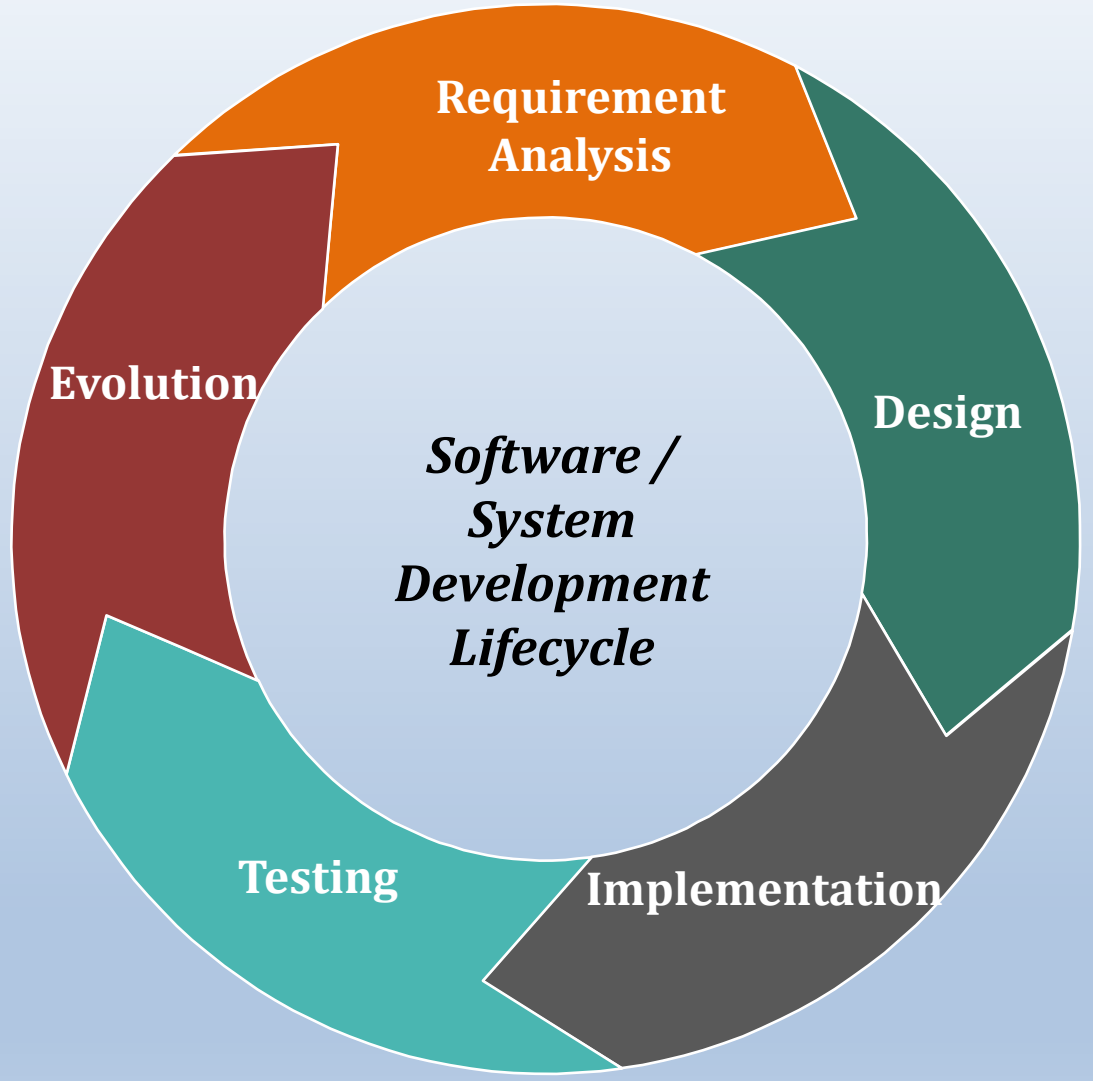
Information Systems

Software Engineering

Also called application development life-cycle.

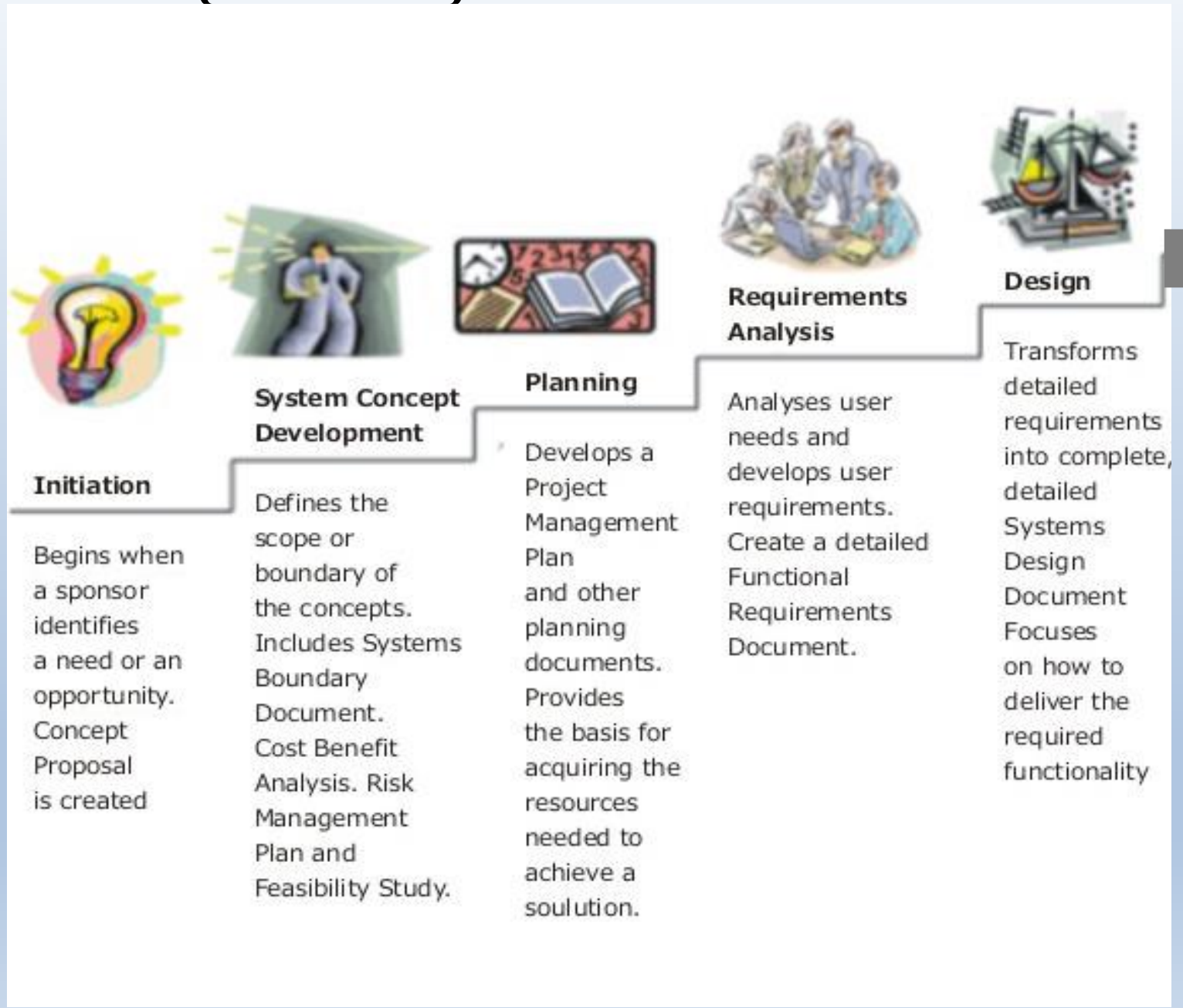


SDLC

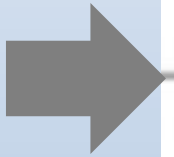


SDLC is the motherboard for all kinds of project developments!

SDLC Phases (Part 1 of 2)



SDLC Phases (Part 2 of 2)



Development

Converts a design into a complete information system Includes acquiring and installing systems environment; creating and testing databases preparing test case procedures; preparing test files, coding, compiling, refining programs; performing test readiness review and procurement activities.

Integration and Test

Demonstrates that developed system conforms to requirements as specified in the Functional Requirements Document. Conducted by Quality Assurance staff and users. Produces Test Analysis Reports.

Implementation

Includes implementation preparation, implementation of the system into a production environment, and resolution of problems identified in the Integration and Test Phases

Operations & Maintenance

Describes tasks to operate and maintain information systems in a production environment. includes Post-Implementation and In-Process Reviews.

Disposition

Describes end-of-system activities, emphasis is given to proper preparation of data.

Project Initiation Phase

This is the 1st phase in the Project Life Cycle, as it involves starting up a new project.

A project is started by defining its :

- Objectives
- Scope
- Purpose
- Deliverables

Also in this phase we hire the project team, setup the Project Office and review the project, to gain approval to begin the next phase.

The purpose of the Initiation Phase is to start the project.

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Concepts Development Phase

The Concept Development Phase may begin after the approval of the completion of the Initiation project status review, and the approval to proceed to the Concept Development Phase.

The focus of the phase is two-fold:
1) Evaluate feasibility of alternatives and
2) Clearly define and approve project scope, including the system, all deliverables, and all required activities.

Planning

Project Planning – Determines the project's goals and results in a high-level view of the potential project.

Proper comprehensive project planning is essential to a successful IT project, and incomplete project planning and analysis are frequently root causes of project failure.

The purpose of the Planning Phase is to plan all project processes and activities required to ensure project success and to create a comprehensive set of plans, known as the Project Management Plan (PMP), to manage the project from this phase until project termination.

Requirement Analysis

The Requirements Analysis Phase begins when the previous phase objectives have been achieved.

Documentation related to user requirements from the Concept Development Phase and the Planning Phase shall be used as the basis for further user needs analysis and the development of detailed requirements.

The purpose of the Requirements Analysis Phase is to transform the needs and high-level requirements specified in earlier phases into unambiguous (measurable and testable), traceable, complete, consistent, and stakeholder-approved requirements.

Design

During the Design Phase, the system is designed to satisfy the requirements identified in the previous phases.

The requirements identified in the Requirements Analysis Phase are transformed into a System Design Document that accurately describes the design of the system and that can be used as an input to system development in the next phase.

The purpose of the Design Phase is to transform the requirements into complete and detailed system design specifications. Once the design is approved, the Development Team begins the Development Phase.

Development

The Development Phase features a key step in the project: system construction.

The previous phases lay the foundation for system development; the following phases ensure that the product functions as required.

To complete the Development Phase successfully, two elements are required:

1) 1) A complete set of design specifications
2) 2) Proper processes, standards, and tools.

The purpose of the Development Phase is to convert the system design prototyped in the Design Phase into a working information system that addresses all documented system requirements. At the end of this phase, the working system will enter the Test Phase.

Testing

The Test Phase focuses on an empirical investigation in which the results describe the quality of the system: testing cannot confirm a system functions properly under all conditions but can establish that it fails under specific conditions.

In the Test Phase, testing of the system proves that the system meets all requirements, including those for performance and security.

The purpose of the Test Phase is to guarantee that the system successfully built and tested in the Development Phase meets all requirements and design parameters. After being tested and accepted, the system moves to the Implementation Phase.

Implementation

The Implementation Phase has one key activity:
Deploying the new system in its target environment. Supporting actions include training end-users and preparing to turn the system over to maintenance personnel.

The purpose of the Implementation Phase is to deploy and enable operations of the new information system in the production environment.

Operation and Maintenance

During the Operations and Maintenance Phase, the information system's availability and performance in executing the work for which it was designed is maintained.

System operations continue until the system's termination date, when the next phase, Disposition, begins.

The purpose of the Operations and Maintenance Phase is to ensure the information system is fully functional and performs optimally until the system reaches its end of life.

Disposition

The Disposition Phase is the end of an information system's life cycle. The information system is formally retired according to organizational needs, laws and regulations, and the Disposition Plan.

The disposition activities ensure that the information system is terminated in an orderly manner and that vital information about the system is preserved according to applicable records management regulations and policies for future access.

The decision to proceed with the Disposition Phase is based on recommendations and approvals from an In-Process Review during the Operations and Maintenance Phase.

The purpose of the Disposition Phase is to shut down the operational information system in a controlled manner.

Why SDLC ?

We need to follow SDLC

- To execute projects with proven frame work
- To define and focus roles and responsibilities
- To enforce planning and control
- To have consistency among deliverables
- To increase productivity by executing the project in systematic manner
- To reduce the rework effort during project execution