



Daffodil
International
University

Lecture 2
System Development Life Cycles (SDLC)
Part 1

Course Code: CIS 111

Course Title: Information Systems
Engineering

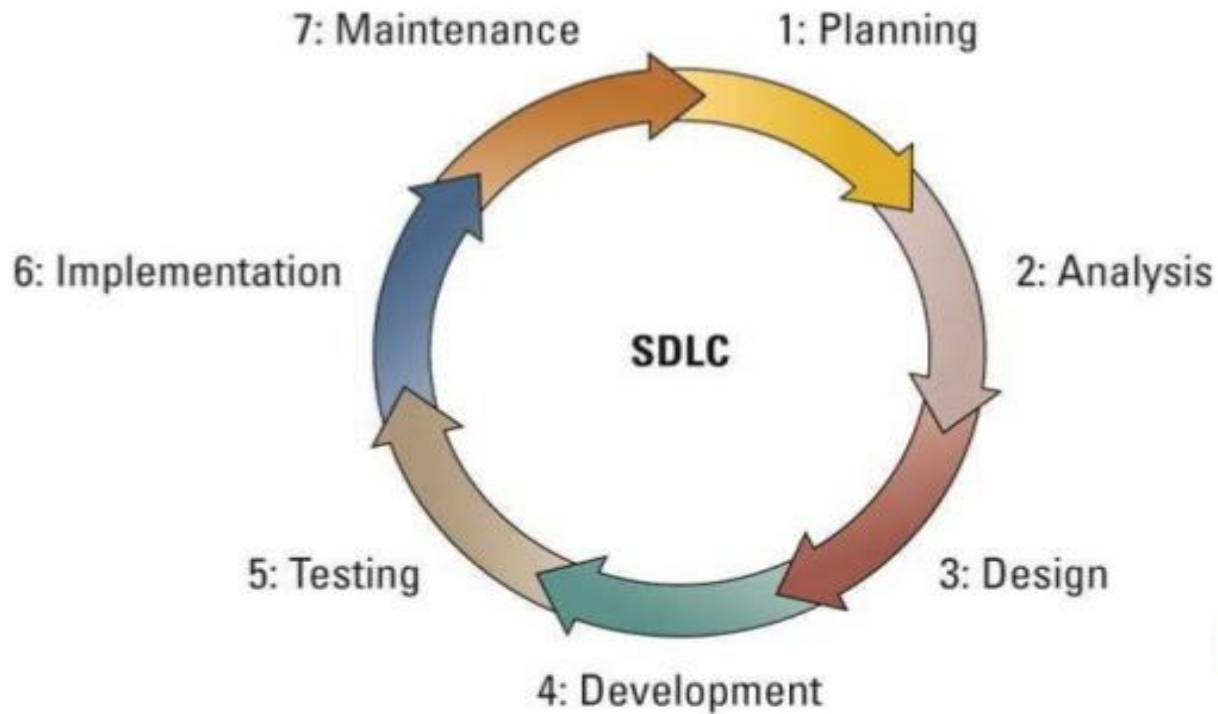
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What is SDLC?

- ▶ A system development life cycle (SDLC) is the series of identifiable stages that a software product undergoes during its lifetime
- ▶ SDLC Models emphasize on the need to follow some structured approach towards building new or improved system.

Major 7 SDLC Phases:

SDLC PHASES



Planning-1st Phase

- ▶ This is the first phase in the systems development process. It identifies whether or not there is the need for a new system to achieve a business strategic objectives.
- ▶ This is a preliminary plan (or a feasibility study) for a company's business initiative to acquire the resources to build on an infrastructure to modify or improve a service.
- ▶ The purpose of this step is to find out the scope of the problem and determine solutions. Resources, costs, time, benefits and other items should be considered at this stage.

Analysis-2nd Phase

- ▶ After preliminary investigation, analysis phase begins.
- ▶ Analysis is a detailed study of
 - ▶ the various operations performed by the system,
 - ▶ relationships among the various sub systems or functional units
 - ▶ and finally the relationships outside the system.
- ▶ Many tools are used during analysis. Data flow diagrams, on-site observations, and questionnaires are some examples.
- ▶ Detailed work of analysis is kept as a record in a Specification Document.

Design-3rd Phase

- ▶ After the system has been analyzed by the analyst, the design stage of system life cycle begins.
- ▶ In design phase, the structure or design for the proposed system is finalized.
- ▶ Structure of files, databases, input, output, processes, and screens(interfaces) are decided.
- ▶ After design is finalized, it is clearly documented in what is called Design Document.

Development-4th Phase

- ▶ In this phase, the actual development of the system takes place.
- ▶ That is, design representations are translated into actual programs.
- ▶ Software developers may install (or modify and then install) purchased software or they may write new, custom-designed programs.
- ▶ Programmers are also responsible for documenting the program, providing an explanation of how procedures are coded.

Testing-5th Phase

- ▶ After a system has been developed, it is very important to check if it fulfills the customer requirements. For this purpose, testing of the system is done.
- ▶ Testing may be repeated, specifically to check for errors, bugs and interoperability. This testing will be performed until the end user finds it acceptable.
- ▶ There are various types of tests which are used to test the system. These include unit, integration, and acceptance testing.

Implementation-6th Phase

- ▶ Implementation of system means putting up system on user's site.
- ▶ This phase involves the actual installation of the newly-developed system. It puts the project into production by moving the data and components from the old system and placing them in the new system via a direct cutover.
- ▶ While this can be a risky (and complicated) move, the cutover typically happens during off-peak hours, thus minimizing the risk.

Maintenance- 7th Phase

- ▶ Like any system, there is an aging process. Therefore, the system requires periodic maintenance.
- ▶ Maintenance can be for software or hardware. User priorities, changes in organizational requirements, or environmental factors call for system enhancements.
- ▶ This is very crucial for the system's life.

In shorter form the key points:

SDLC Phases & Major Activities

SDLC Phase	Activities
1. Planning	<ul style="list-style-type: none">• Define the system to be developed• Set the project scope• Develop the project plan including tasks, resources, and timeframes
2. Analysis	<ul style="list-style-type: none">• Gather the business requirements for the system
3. Design	<ul style="list-style-type: none">• Design the technical architecture required to support the system• Design system models
4. Development	<ul style="list-style-type: none">• Build the technical architecture• Build the database and programs
5. Testing	<ul style="list-style-type: none">• Write the test conditions• Perform the testing of the system
6. Implementation	<ul style="list-style-type: none">• Write detailed user documentation• Provide training for the system users
7. Maintenance	<ul style="list-style-type: none">• Build a help desk to support the system users• Provide an environment to support system changes