

System Development Life Cycle (SDLC)

LECTURE 03

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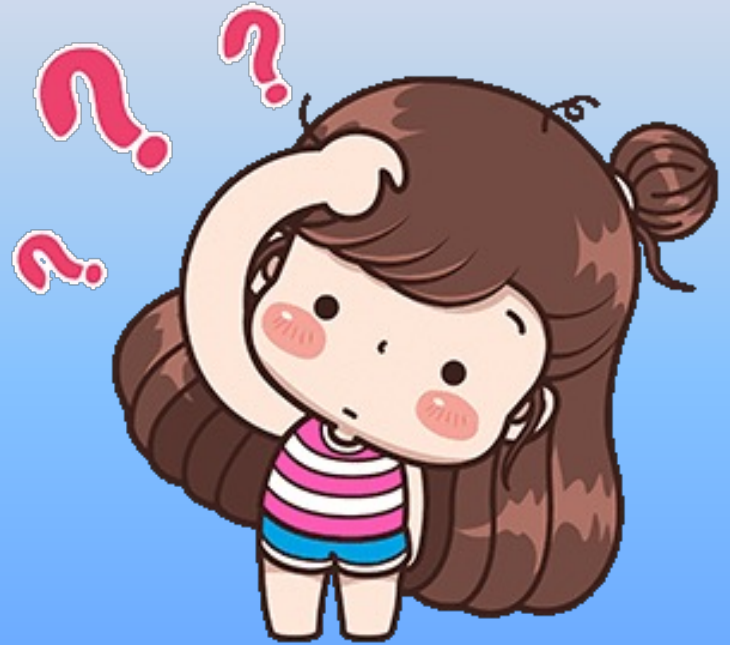


Learning Outcomes

End of this lecture you will be able to learn ,

- **LO1: Understand the process of system development lifecycle**
- **LO2: Understand the different stages engaged with SDLC.**

What is SDLC?



What is SDLC?

System Development Life Cycle is an **organizational process** of **developing** and **maintaining** systems.

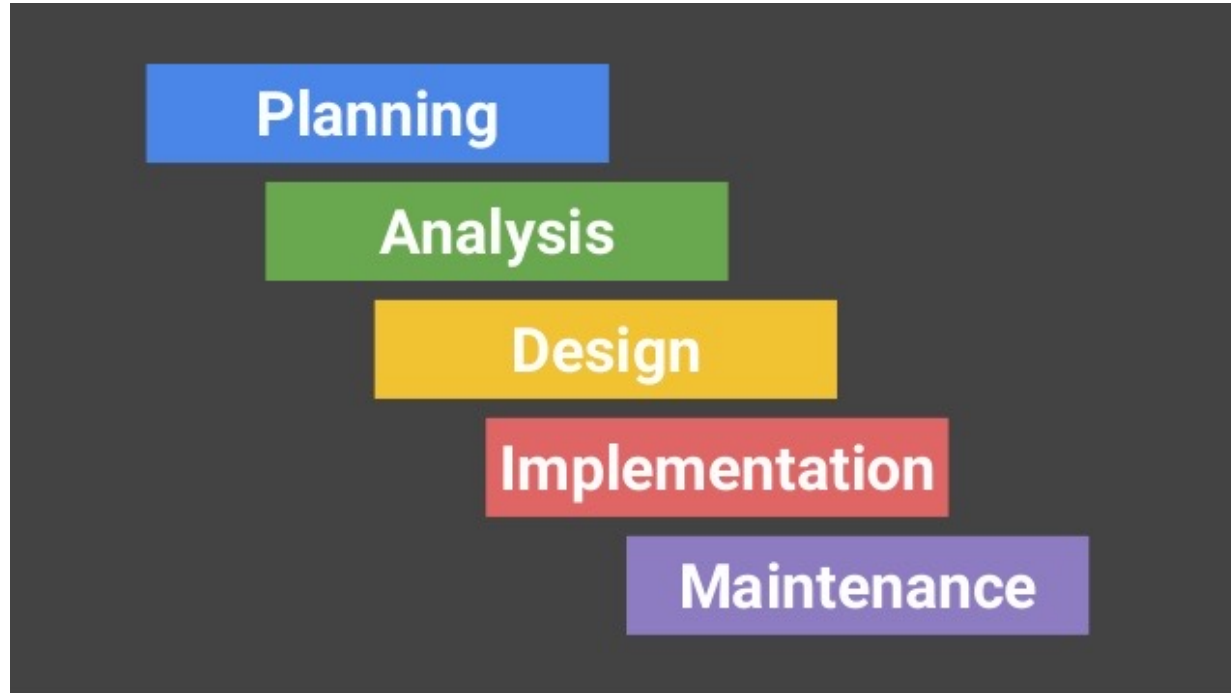


Systems development life cycle

The SDLC aims to produce

- a **high-quality system**
- that meets or exceeds **customer expectations**
- reaches completion **within time and cost** estimates
- works **effectively and efficiently** in the current and planned infrastructure
- inexpensive to maintain and **cost-effective** to enhance.

SDLC Phases – 5 Main Phases



Planning

Why should the system be built?

Analysis

Who, what, when and where will the system be?

Design

How to build the system?

Implementation

Build the system

Maintenance

Support & Maintain the System

Planning

There are 2 main steps in Planning.

Step 1 : Project Initiation

Step 2 : Project Management

A cartoon illustration of Arthur, a yellow aardvark with a large snout and small ears, wearing an orange shirt. He is standing in a snowy, winter landscape with bare trees and a red and white striped pole in the background. He has a serious expression.

GUYS, WE NEED A PLAN!

Arthur



Project Initiation in Planning

1. Identifying business value

- The system analyst investigate the existing system.
- Find the limitations present.
- Evaluate whether automating the system would help the organization.

2. Develop a system request

- Once the initial investigation is done and the need for new or improved system is established.
- All possible alternate solutions are chalked out.
- All these systems are known as "**candidate systems**"
- The selected solution is called as the "**proposed system**"

Project Initiation in Planning

3. Conduct a feasibility analysis

- The detailed business analysis of the proposed system.
- Feasibility ?
- Feasibility Study can be performed in means of
 - Technical feasibility
 - Economical feasibility
 - Operational feasibility
- At the end prepares the **Feasibility report**.
- The project is approved or disapproved according to the results of the study

Feasibility Study



Technical Feasibility

- Study all Technical risks associated with the proposed system.
- Technical Feasibility would answer:
 1. Can We Built It?
 2. Can the development of the proposed system be done with
 - **Current equipment**
 - **Existing software technology**
 - **Available personnel?**
 3. Does it require new technology?

Economic feasibility

- Identifies costs and benefits
- Assign values to costs and benefits
- Determine cash flow
- Assess financial viability
- An important outcome is the cost benefit analysis.

Should We Built It?

Operational feasibility

- Will the system be used if it is developed and implemented?
- Will there be resistance from users that will undermine the possible application benefits?

Project Management in Planning

- Develop work plan
- Staff the project
- Control and direct the project



Analysis

- Analysis is a detailed study of the
 - Various operations performed by the system,
 - The relationships among the various sub-systems or functional units,
 - The relationships outside the system.
- Study is conducted to
 - find user's requirements.
 - understand business needs and processing requirements
 - Proper functioning of the current system.
- Requirements gathering techniques
 - Interviews, questionnaires, observation, prototype etc.
- Process modeling
- Data modeling

Design

- Develop a design strategy based on requirements and analysis decisions.
- Design architecture and interfaces
 - **Architectural design**
 - **Hardware**
 - **Software**
 - **Network infrastructure**
- Develop databases and file specifications
- Develop the program design
- Clearly document all in a document called System Design Specification

Implementation

1. Construction

- Design representations are translated into actual programs.
- System is developed by writing coding.

2. Testing

- To fix all the software bugs.
- Check if the system created fulfills the customer requirements.
- Ensure the quality of the system.

3. Installation

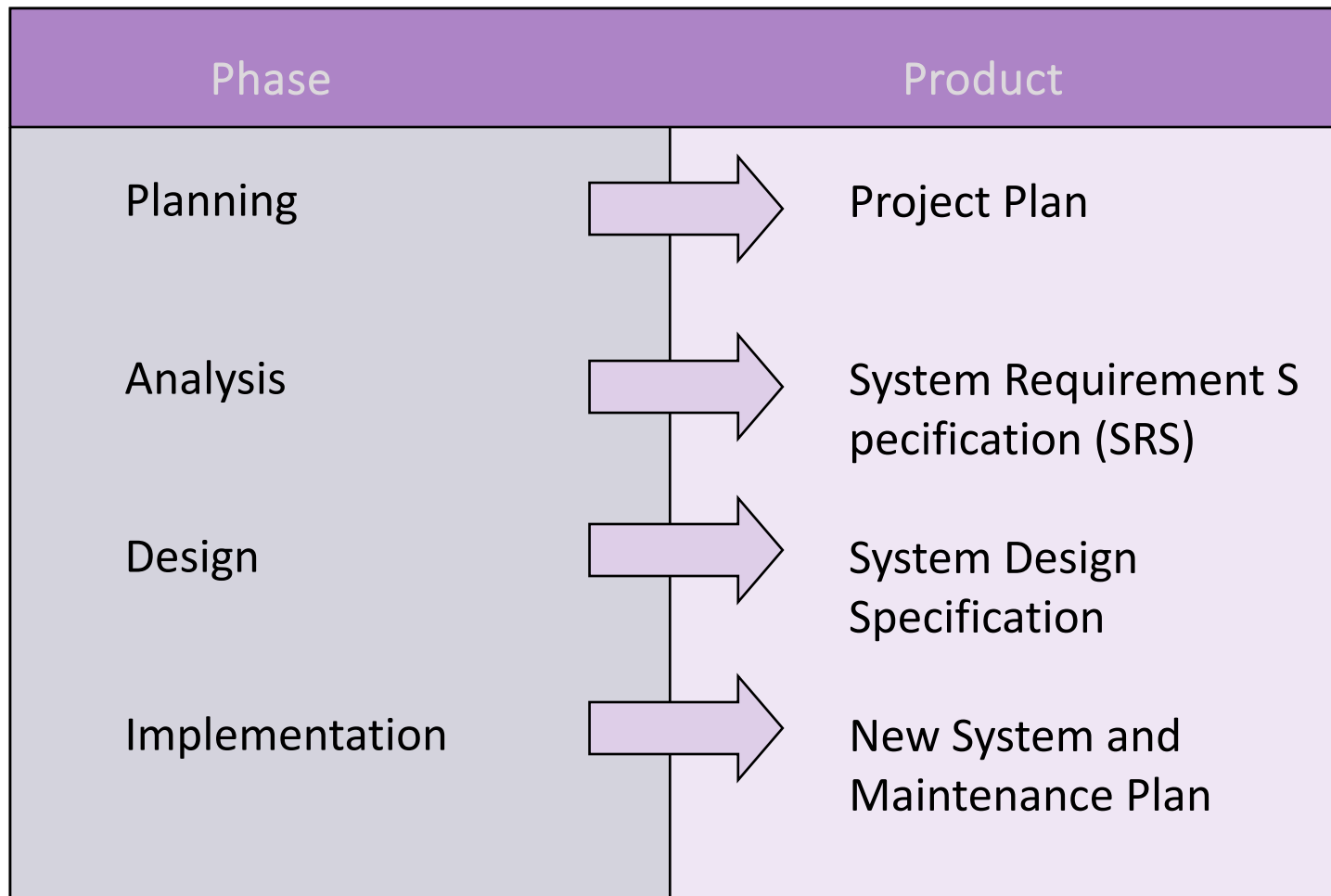
- The completed system is installed at the client's working environment
- Training users on how to work with the new system
- Establish a support plan.

Support & Maintenance

- Conduct post-implementation system review
- Identify errors and enhancements
- Monitor system performance
- Monitor future changes and maintain the system
 - **Changes can be software as well as hardware**
 - **Can be fixing of errors/ software bugs**
 - **Handling complaints received from system users**
 - **Providing help**

Project Deliverables

- The project moves systematically through phases where each phase has a **standard set of outputs**
- Produces **Project Deliverables**
- Uses deliverables in implementation
- Results in actual information system



Any Questions?

