Information Systems (තොරතුරු පද්ධති)
Lesson 03

SSADM & SDLC
(Structured system Analysis & Design Methodology)

Objectives – Learning Outcomes

➢ The objectives of this section are to introduce structured system analysis & design methods.

When you have followed this section you will:
- Understand and Explain what SSADM is
- Understand and will able to describe the Phases of the System Development Life Cycle

Outline

- What is a methodology?

- SSADM

- Phases of the System Development Life Cycle

Methodologies

A methodology,

Provides **guidelines** to follow for completing every activity of the systems development life cycle

Why follow a methodology?

- Clarity of records
- Consistency of approach
- Standardisation of recording but flexibility within rules

Methodologies - examples

- Structured Approach

  - SSADM

- Object Orientated Approach

  - Object Orientated Analysis and Design Methodology

  - Views a system as a collection of interacting objects

Methodologies – examples Cont.

- RAD (Rapid Application Development)

  - A system development strategy that emphasizes **speed** of development through extensive user involvement

SSADM – What is it?

SSADM

- **S**tructured **S**ystems **A**nalysis and **D**esign **M**ethodology

Purpose

- Formalize the requirements process
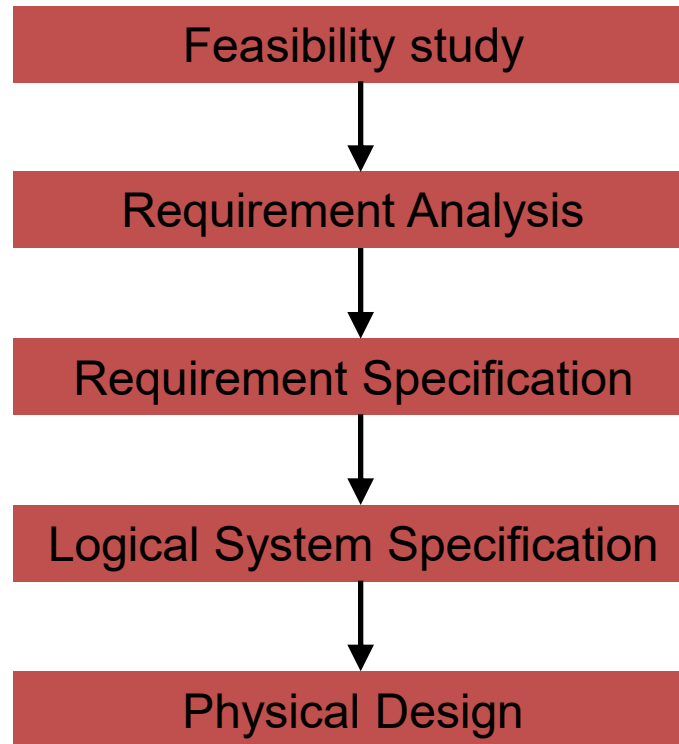- Introduce best practice techniques

Why Use SSADM?

- Open Industry Standard

- Developed by the UK government in 1982; mandatory use for some Civil Service applications; now mature and widely used

- Use supported by many CASE tools (Computer-Aided Software Engineering)

- Builds on the traditional Systems Development Life Cycle and has clearly defined stages

- Disciplined approach will improve the quality of systems

SSADM Structure

Feasibility study

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Requirement Analysis

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Requirement Specification

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Logical System Specification

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Physical Design

Feasibility Study

One stage module

Stage 0 >>   Feasibility Report Produced

- Analysis of a business area to determine whether a system can cost effectively support the business requirements

Requirements Analysis

Two stage module

Stage 1 >>   Investigation

- Investigating the current environment
- Identifying problems or areas that need improvement

Stage 2 >>   Business System Options

- Develops a range of options that meet the defined requirements
- Select one option as the basis for the desired system

Requirements Specification

One stage module

Stage 3 >>   System Requirement Specification

- Having selected a specific 'Business System Option' a detailed specification of requirements now begins.

- Emphasis is on determining the desired system data, functions and events

- Prototyping techniques are also suggests for the development of the HCI

- **DFD's** and **ERD's** are developed

Logical System Specification

Two stage module

Stage 4 >>   Technical System Options

- This assesses the different options for implementing the specification

- Describes the costs, benefits and constraints

Stage 5 >>   Logical Design

- Design of program logic, what the programs have to do

Physical Design

One stage module

Stage 6 >>   Physical Design (DB)

- The Physical Environment the system will operate in is considered

  - Physical database design

  - Performance

  - Processing characteristics

  - Physical screen designs are developed

Benefits of SSADM

- More focus on analysis and design
- Better quality system specifications
- System documentation as a byproduct
- Effective communication & user involvement
- Flexible continuity when staff changes
- Improved management control
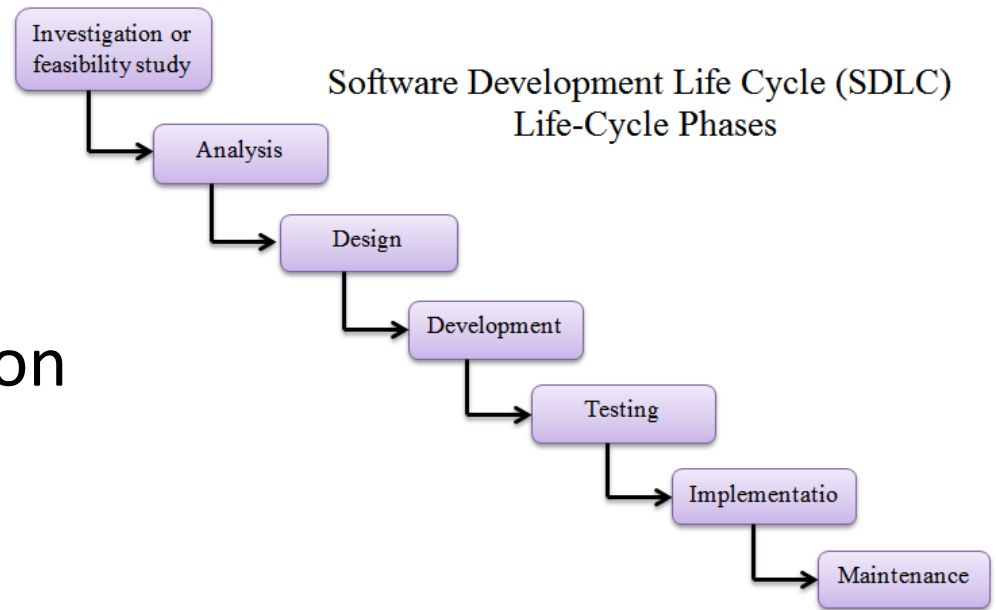- Computer based support

System Development Life Cycle - SDLC

- The systems development life cycle (SDLC), also referred to as the application development life-cycle, is a term used in systems engineering information systems and software engineering to describe a process for planning, creating, testing, and deploying an information system.

SDLC Phases

- Systems Investigation
- Systems Analysis
- Systems Design
- Systems Development
- Systems Testing
- Systems Implementation
- Systems Maintenance

Software Development Life Cycle (SDLC) Life-Cycle Phases

Investigation or feasibility study → Analysis → Design → Development → Testing → Implementatio → Maintenance

SDLC Phases   Cont.

- *Systems Investigation*
  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's strategic objectives.

- *Systems Analysis*
  In here, analyzing the needs of the end users to ensure the new system can meet their expectations. Systems analysis is vital in determining what a business's needs are, as well as how they can be met, who will be responsible for individual pieces of the project, and what sort of timeline should be expected.

SDLC Phases   Cont.

- *Systems Design*
  The third phase describes, in detail, the necessary specifications, features and operations that will satisfy the functional requirements of the proposed system which will be in place.

- *Systems Development*
  The fourth phase is when the real work begins—in particular, when a programmer, network engineer and/or database developer are brought on to do the major work on the project.

SDLC Phases   Cont.

- *Systems Testing*
  To determine if the proposed design meets the initial set of business goals. Testing may be repeated, specifically to check for errors, bugs and interoperability. This testing will be performed until the end user finds it acceptable.

- *Systems Implementation*
  The sixth phase is when the majority of the code for the program is written. Additionally, this phase involves the actual installation of the newly-developed system.
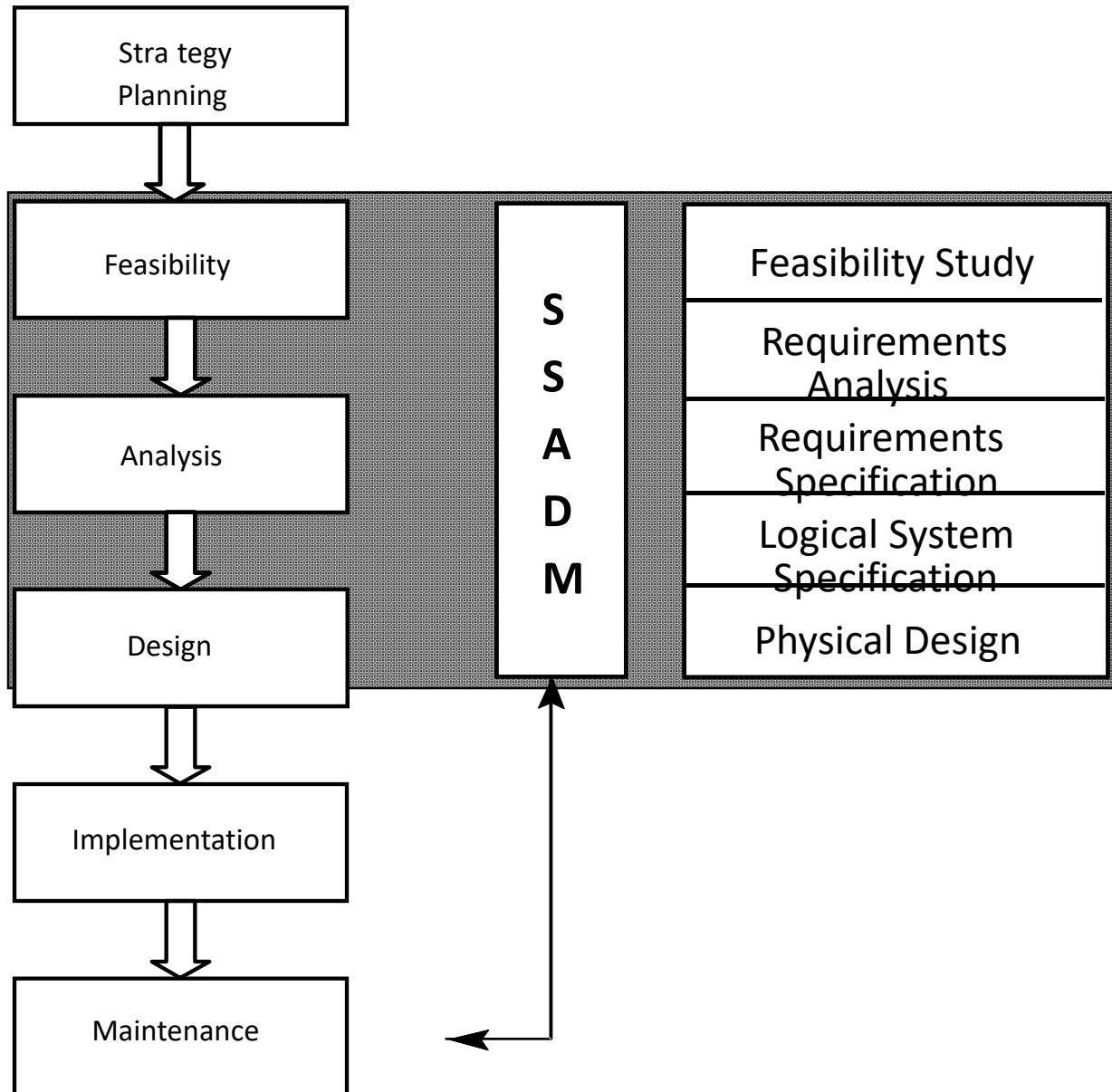
SDLC Phases   Cont.

- *Systems Maintenance*
  The seventh and final phase involves maintenance and regular required updates. This step is when end users can fine-tune the system, if they wish, to boost performance, add new capabilities or meet additional user requirements.

SDLC & SSADM

Summery

In this section you have given an idea about the SSADM & the phases of SDLC.

Also this section covered the structure of SSADM , benefits and the details of SDLC phases.

References

- SOFTWARE ENGINEERING, Ninth Edition, Ian Sommerville

Next Lesson >>>

Lesson 04 : Information system and its feasibility