

SWEN90016

Software Processes & Project Management

Harry Drakos

Department of Computing and Information Systems

The University of Melbourne

harry.drakos@unimelb.edu.au

2020 – Semester 1

Lecture 2

Lecture 2 – Intended Learning Objectives

~~Module 4 – Project Management Plans:~~

- ~~1. What are they and When should they be used.~~

Module 5 - SDLCs:

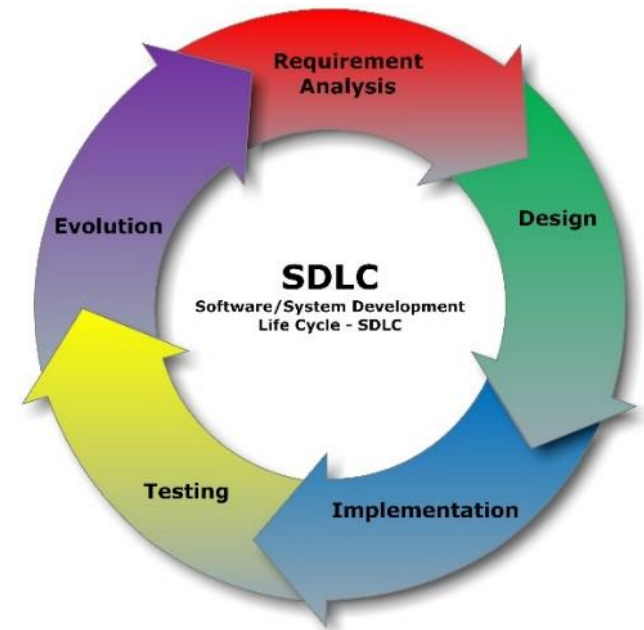
1. Review two key Software Development Lifecycles (SDLCs).

Module 5.1 – Software 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.

Activities in SDLC:

- Requirements gathering
- Systems / Architectural Design
- Implementation / coding / Integration
- Testing
- Evolution:
 - Delivery and Release - Deployment
 - Maintenance



Module 5.1 – SDLCs

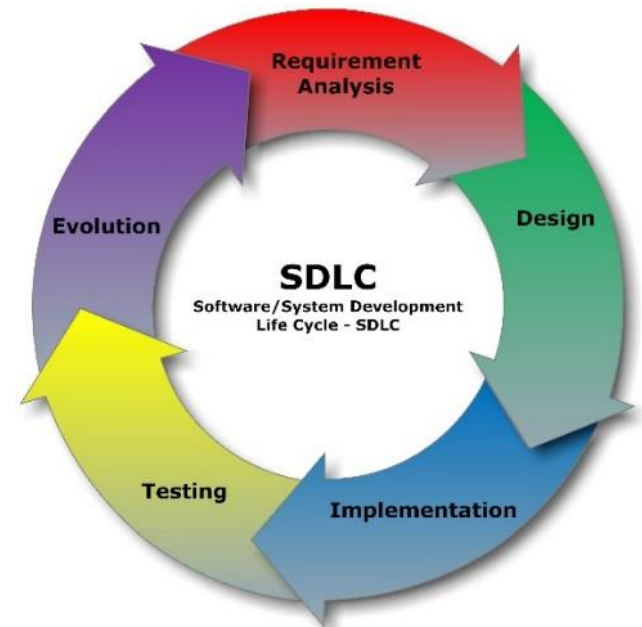
There are many SDLCs around with organisations typically favouring a blend of Formal and Agile approaches.

1. Formal Processes

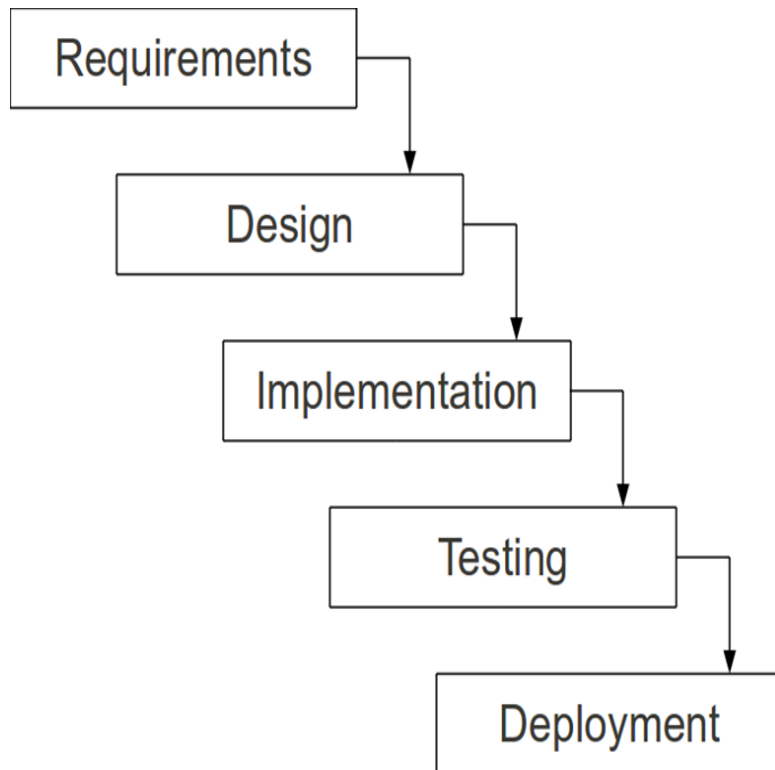
- Waterfall
- Incremental
- V-Model

2. Agile Processes

- Scrum
- Kanban
- Extreme Programming



Module 5.1 – Waterfall

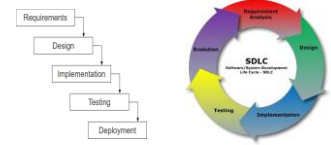


Advantages

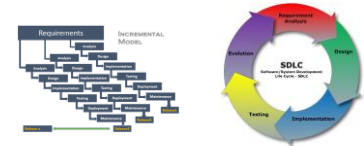
- Simple and easy to understand and use
- Easy to manage due to the rigidity of the model
- Phases are processed and completed one at a time
- Documentation available at the end of each phase
- Works well for projects where requirements are very well understood and remain stable

Disadvantages

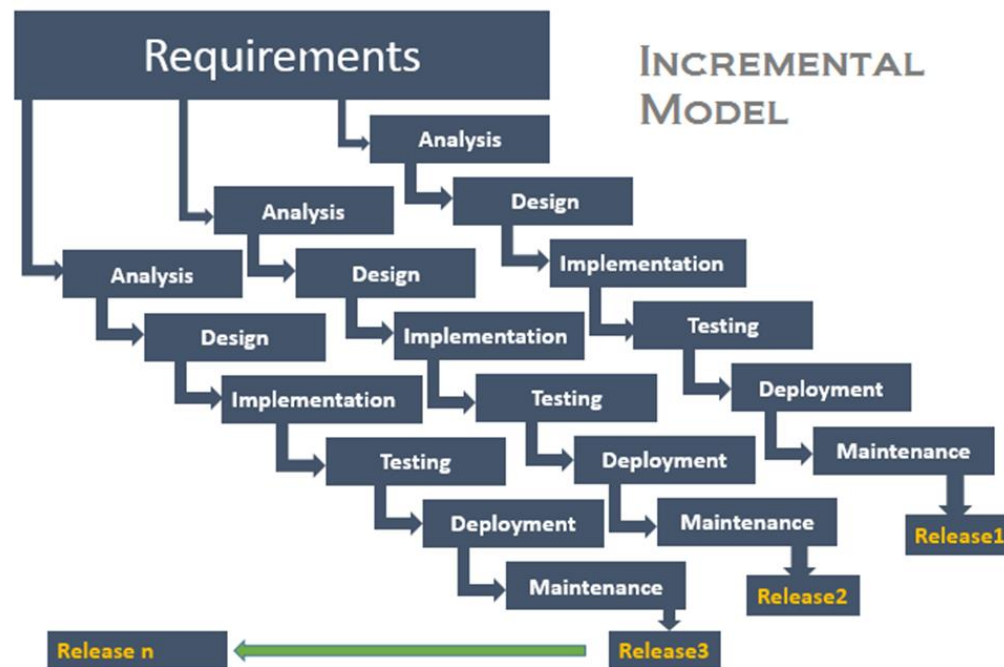
- Difficult to accommodate change after the process is underway
- One phase must be completed before moving on to the next
- Unclear requirements lead to confusion
- Clients approval is in the final stage
- Difficult to integrate risk management due to uncertainty



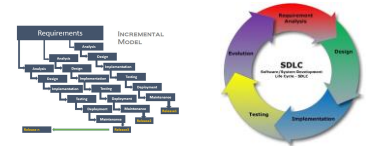
Module 5.1 – Incremental Model



In incremental model the **whole requirement** is divided into various releases. Multiple cycles take place, making the life cycle a **multi-waterfall** cycle. Cycles are divided up into smaller, more easily managed modules.



Module 5.1 – Incremental Model



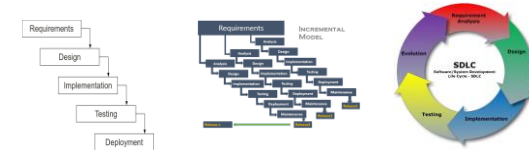
Advantages

- Each release delivers an operational product
- Less costly to change the scope/requirements
- Customers can respond to each build
- Initial product delivery is faster
- Customers get important functionality early
- Easier to test and debug during smaller iterations

Disadvantages

- More resources may be required
- More management attention is required
- Defining / partitioning the increments is difficult and often not clear
- Each phase of an iteration is rigid with no overlaps
- Problems may occur at the time of final integration

Module 5.1 – Formal Models



Characteristics where “Formal” Models make sense:

- Projects where the customer has a very clear view of what they want
- Projects that will require little or no change to requirements
- Software requirements are clearly defined and documented
- Software development technologies and tools are well-known
- Large scale applications and systems developments

Which of the following information is typically captured in a Project Management Plan?

Executive Summary

Project costs and
benefits / value

Project milestones

Project team /
resources

All of the above

Which of the following is a formal SDLC?

Waterfall

Rainforest

Journey
cycle

All of the
above

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