Software Engineering

هندسة البرمجيات

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Software Life Cycle Model / System Development Life Cycle (SDLC)

Topics covered

- ✧ What is Software Life Cycle Model?
- ✧ The need for Software Life Cycle Model
- ✧ Phases of Software Life Cycle Model

What is Software Life Cycle Model?

The software goes through a series of development phases. Typically, the software is specified, designed and then implemented.

If the customer is satisfied the software installed and while it is operational, it is maintained. The series of steps through which the software progress is called ***"Software Life Cycle Model".***

The need for Software Life Cycle Model

The development team must identify a suitable life cycle model for the particular project and then ahead to do it.

Without using a particular life cycle model the development of a software would not be in a systematic manor.

When a software is being developed by a team there must be a clear understanding a mong team members about when and what to do. Otherwise it would lead to project failure.

Phases of Software Life Cycle Model

1. Requirements determination

✧ ***What is done During this Phase:***

Determine requirements to be met by software being contemplated.

✧ ***The output of this Phase:***

Set of requirements and their priorities.

Phases of Software Life Cycle Model

2. Requirements specification

✧ ***What is done During this Phase:***

Draw up understandable plan of what the software will provide as outputs.

Determine needs and propriety by consensus among end users.

✧ ***The output of this Phase:***

Detailed specifications of information to be provided. (revised user requirement).

Phases of Software Life Cycle Model

3. Feasibility analysis

✧ ***What is done During this Phase:***

Taking into account available resources such as human, computer, time and money find weather specified requirements can be met.

✧ ***The output of this Phase:***

Feasibility document specifying resource needs and availability. Expected cost vs. benefits of software.

Phases of Software Life Cycle Model

4. Software specification

✧ ***What is done During this Phase:***

Obtain functional specification based on revised user requirements and feasibility study.

✧ ***The output of this Phase:***

Functional specification. Budget, time schedule. Physical requirements such as storage and processor.

Phases of Software Life Cycle Model

5. Hardware study

✧ ***What is done During this Phase:***

Determine hardware requirements for software.

✧ ***The output of this Phase:***

Hardware configuration- disk space, CPU power, computer network design.

Phases of Software Life Cycle Model

6. Software design

✧ ***What is done During this Phase:***

Logical design of programs, design of databases, test and implementation plan.

✧ ***The output of this Phase:***

Logical design of programs, data bases and test plan.

Phases of Software Life Cycle Model

7. Software Implementation

✧ ***What is done During this Phase:***

Writing programs, creating databases, developing graphical user interfaces, documenting software. Training users.

Phases of Software Life Cycle Model

7. Software Implementation

✧ ***The output of this Phase:***

Programs, databases, graphical user interfaces, output report formats, user manual and operational manual.

Phases of Software Life Cycle Model

8. Software testing

✧ ***What is done During this Phase:***

programs are tested. Each program is called a unit. And unit testing is the verification that every unit meets its specification.

All units are combined and the whole software is tested. When the combined programs are successfully tested the software is finished.

✧ ***The output of this Phase:***

Tested programs and overall software.

Phases of Software Life Cycle Model

9. Software evaluation

✧ ***What is done During this Phase:***

Find out from users if system meets their needs. Such as E-commerce websites.

✧ ***The output of this Phase:***

Evaluation report with suggestion for environment.

Phases of Software Life Cycle Model

10. Software modification / maintenance

✧ ***What is done During this Phase:***

Change software, adding or deleting features to satisfy users (modified) needs.

✧ ***The output of this Phase:***

Improved software containing modification and improvements.

Phases of Software Life Cycle Model

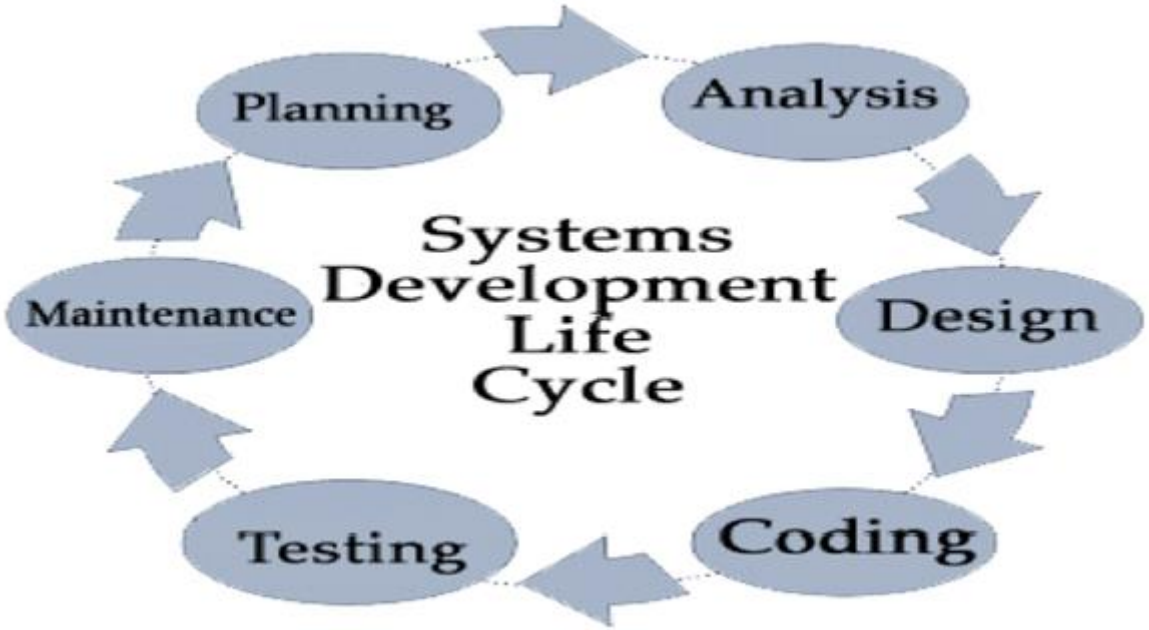

Figure 2: Software Life Cycle

Thanks