TRINITY COLLEGE FOR WOMEN NAMAKKAL

Department of Computer Science

SOFTWARE ENGINEERING

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Software Engineering Definition

- Software is defined as a collection of programs, procedures, rules, data and associated documentation.

- The s/w is developed keeping in mind certain h/w and operating system consideration commonly known as platform.

- And engineering means systematic procedure to develop software.

- Some of the software characteristics are, it can be engineer or developed and second thing is software is complex in nature.

Types of software:-

Computer Software is mainly divided into two types.

- **System software**

     System software includes the operating system & all the utilities to enable the computer to run.

 Ex-window operating system

- **Application s/w**

     Application software consists of programs to perform user oriented tasks.

Ex-word processor, database management. Application software sits about the system software because it needs help of the system software to run.

Types of Software products:

- *Generic products:* This type of software product are developed by a organization and sold on open market to any customer.
  (System software,, application software)
- *Customized (or bespoke) products:* This type of software products are developed by a software contractor and especially for a customer.
- *Embedded Product:* Combination of both hardware and software

Qualities / Skills possessed by a good software engineer:

- **General Skill** (Analytical skill, Problem solving skill, Group work skill)
- **Programming Skill** (Programming language , Data structure , Algorithm , Tools(Compiler, Debugger))
- **Communication skill** (Verbal , Written, Presentation)
- **Design Skill** (s/w engineer must be familiar with several application domain)

Generic attributes in a software process:

- Understandability

- Visibility

- Reliability

- Robustness

- Adaptability

- Rapidity

- Maintainability

- Supportability

SOFTWARE LIFE CYCLE METHOD

- A software life cycle model (also called process model) is a descriptive and diagrammatic representation of the software life cycle.
- A life cycle model represents all the activities required to make a software product transit through its life cycle phases.
- It also captures the order in which these activities are to be undertaken.
- A life cycle model maps the different activities performed to develop software product from its inception to retirement.
- Different life cycle models may map the basic development activities to phases in different ways.

Different software life cycle model:-

- Many life cycle models have been proposed so far.
- Each of them has some advantages as well as some disadvantages.
- A few important and commonly used life cycle models are as follows:

  - Classical Waterfall Model
  - Iterative Waterfall Model
  - Prototyping Model
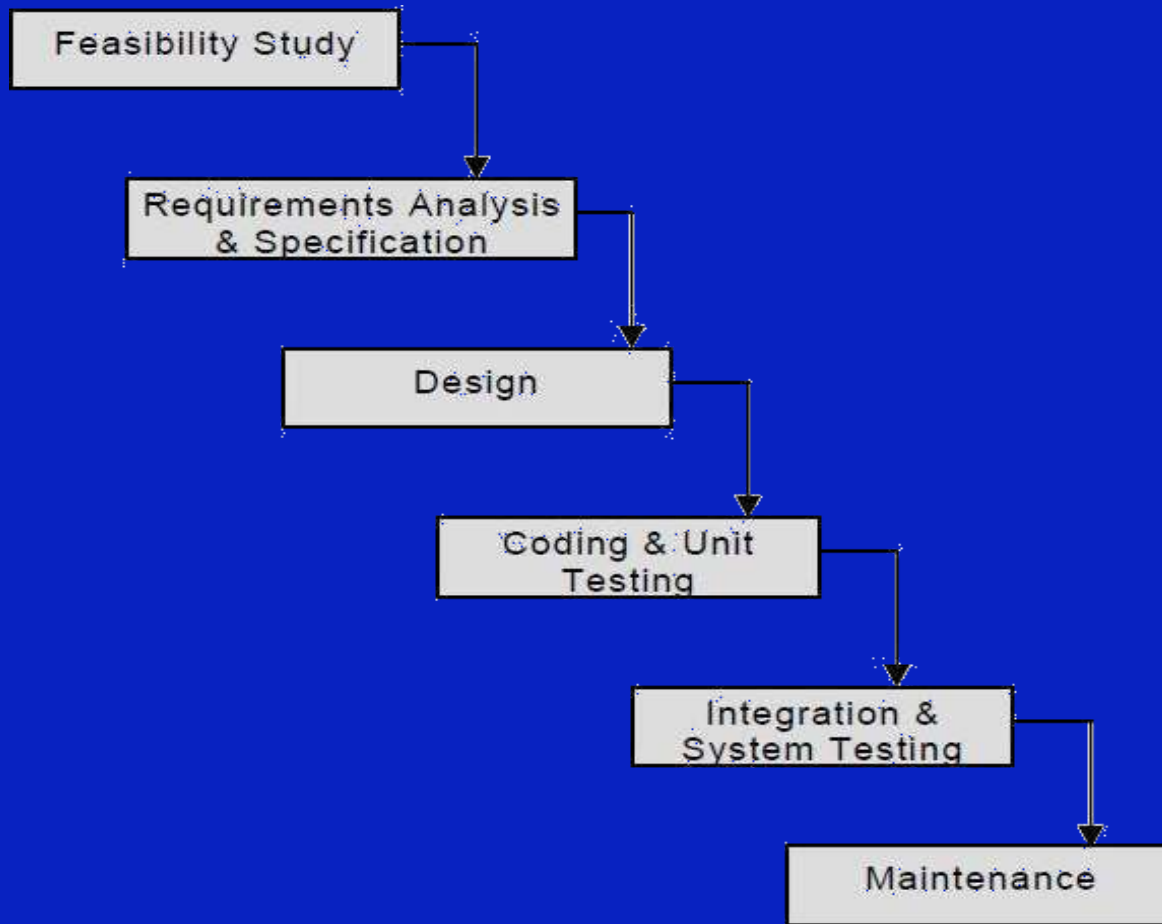 - Evolutionary Model
  - Spiral Model

Classic Waterfall model

Fig 2.1: Classical Waterfall Model

THANK YOU

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