**Software Engineering Assignment-II**

**Test-I correction.**

**Question No.1**:

State the following statements True or False.

1.1: Generally software can be developed by a single programmer.

**False**. Generally developed by a group of programmers.

1.2: A software product does get wear out like hardware.

**False**. Software product does not get wear out.

1.3: Software development effort starts from requirements analysis and specification.

**False**. Software development effort starts from feasibility study stage.

1.4: The software process concept is not applied to the small software project.

**False**. The software process concept applies to all software projects, whether

large or small.

1.5: One or more software process models can be used for developing the particular

software.

**False**. Only one model is used to develop the particular software.

1.6: Requirement conflicts between customers and analyst are resolved through

negotiation.

**True.**

1.7 :User Requirements are documented in a system Requirement Specification

document.

**True**

1.8: Requirements must be clearly understood for using the Incremental Process Model.

**False**. Requirements need not be clearly understood initially.

1.9: Prototype Process Model is suitable for developing the real-time software system.

**False:**Since it is too slow process and has many disadvantages.

1.10 :An analyst can be from any engineering background.

**False**. An analyst should be from IT (software) engineering background.

Question No.2

2.1: What do you understand by software crisis and software product?

Answer:

**Software Crisis:** refers to set of problems characterized by an inability to develop

software on time within budget and within requirements.

Following are the main reasons for the software crisis:-

* Lack of communication between software developers and users.
* Increase in size of software
* Increase in cost of developing software
* Increase in complexity of the problem
* Project Management Problem
* Lack of understanding of the problem and its environment
* Efforts Duplication due to absence of automation in most of the development activities
* High optimistic estimates regarding the software development time & cost

**Software Product:** is the software systems delivered to the customers with

documentation the describes how to install and use the system.

2.2 What are the advantages of using software engineering for developing software product?

Answer:

The advantages of using the software engineering are:

* Improve requirement specification
* Improved cost and scheduled estimates
* Improved Quality
* Better use of automated tools & techniques
* Less defects in final Product
* Better maintenance of software product
* Improved reliability & Productivity.

2.3 Define software process model. Explain briefly the water fall model with a suitable diagram.

Answer:

**Software Process Model:**

* Is the framework for defining the repeatable process that software engineering applies to the development of software.
* A Software Process Model is a simplified representation of a software process that is presented from a specific perspective.
* It describes the creation of software development process.
* It is an abstract representation of a process, it represents a description of a process from a particular perspective.
* The goal of a software process model is to provide guidance for systematically coordinating and controlling the tasks that must be performed in order to achieve the end product and the project objectives.

• A process model defines the following:

■ A set of tasks that need to be performed.

■ The input to and output from each task.

■ The preconditions and postconditions for each task.

■ The sequence and flow of these tasks.

**Waterfall model:**

Sometimes called the classic life cycle or the waterfall model.

* Waterfall model is the most well known software lifecycle development model.
* It is very simple to understand and use. Each next phase in this model must begin only after the previous phase is over.
* Waterfall software development model may be applicable to projects where:

1. Software requirements clearly defined and known

2. Software development technologies and tools is well known

3. New version of the existing software system is created.

* The linear sequential model suggests a systematic, sequential approaches to

software development that begins at the system level and progresses through

analysis, design, coding, testing, and support.

* A product is delivered after the linear sequence is complete.
* *Requirements analysis and definition*. The system services, constraints and goals are established by consultation with system users. They are then defined in detail and serve as a system specification.
* *System and software design*. The system design process partitions the requirements to

either hardware or software systems. It establishes an overall system architecture.

Software design involves identifying and describing the fundamental software system

abstractions and their relationships.

* *Implementation and unit testing*. During this stage, the software design is realized as a

set of programs or program unit. Unit testing involves verifying that each unit meets its

specification.

* *Integration and system testing*. The individual program units or programs are

integrated and tested as a complete system to ensure that the software requirements

have been met. After testing, the software system is delivered to the customer.

* *Operation and maintenance*. Normally this is the longest life-cycle phase. The system

is installed and put into practical use. Maintenance involves correcting errors which

were not discovered in earlier stages of the life cycle, improving the implementation of

system units and enhancing the system’s services as new requirements are discovered.

Question No.3

3.1: What is requirement engineering? List the activities involve in requirements engineering

process.

Answer:

* Requirement Engineering is the process of finding & analyzing the customer’s requirements from the system and producing System Requirement Specification document(SRS).
* It tells more about what needs to be designed rather than how it can be designed.
* Activities involved in requirements engineering process are:
  + - Requirement Elicitation:
    - Requirement Analysis & Negotiation
    - Requirement Specification
    - System Modeling
    - Requirement Validation
    - Requirement Management

3.2 State whether requirement elicitation activity is difficult or not. Justify your answer.

Answer:

Requirement elicitation activity is difficult because Users:-

* Are not completely sure of what is needed,
* Have a poor understanding of the capabilities & limitations of their computing environments.
* Do not have a full understanding of the problem domain.
* Have a trouble communicating the needs to the system engineers / Analyst.
* Change requirements over a time.

3.3 Why is the requirement analysis activity needed to be performed?

Answer:

The requirement analysis activities are performed for:

* Examining and eliminating conflict ambiguity & inconsistency if any
* Identifying any missing requirements or extra requirements
* Identifying and analyzing the risk associated with each requirement.