Software EngineeringAssignment

SE – Overview of IT Industry

MODULE: 1

Q1. What is software? What is software engineering?

Ans.

Software

Software is a set of programs that allows the users to perform a well-defined function or some specified task.

Software Engineering

Software engineers are computer science professionals who use engineering principles and programming languages to build software products, develop web and mobile applications, and run network control systems.

Q2. Explain types of software

Ans.

The Two main categories of software are **Application software** and **System Software.**

Among the various categories of software

1. Application Software
2. System Software
3. Driver Software
4. Middleware Software
5. Programming Software

Application Software

The most common type of software, application software, is a computer software package that performs a specific function for a user, or in some cases, for another application.

An application can be self-contained, or it can be a group of programs that run the application for the user.

System Software

These software programs are designed to run a computer's application programs and hardware. System software coordinates the activities and functions of the hardware and software.

Driver Software

This software is often considered a type of system software. Device drivers control the devices and peripherals connected to a computer, enabling them to perform their specific tasks.

Every device that is connected to a computer needs at least one device driver to function.

MiddleWare

The term middleware describes software that mediates between application and system software or between two different kinds of application software.

Ex. middleware enables microsoft windows to talk to Excel and Word.

Programming Software

Computer programmers use programming software to write code.Programming software and programming tools enable developers to develop, write,test and debug other software programs.

Q3. What is SDLC? Explain each phase of SDLC

Ans.

SDLC stands for **Software development lifecycle**.

The software development life cycle is the cost effective and time efficient process that development teams use to design and build high quality software.

The development team must determine a suitable life cycle model for a particular plan and then observe it.

When a team is developing a software product, there must be a clear understanding among team representative about when and what to do. Otherwise, it would point to chaos and project failure.

Phase of SDLC

1. **Requirement gathering and analysis**
2. **Design**
3. **Implementation or coding**
4. **Testing**
5. **Software deployment**
6. **Maintenance**

Requirement gathering and analysis

During this phase, all the relevant information is collected from the customer to develop a product as per their expectation. Any ambiguities must be resolved in this phase only.

Design

In this phase, the requirement gathered in the SRS document is used as an input and software architecture that is used for implementing system development is derived.

Implementation or Coding

Implementation or coding starts once the developer gets the design document. The software design is translated into source code. All the components of the software are implemented in this phase.

Software Testing

Testing starts once the coding is complete and the modules are released for testing.
In this phase, the developed software is tested thoroughly and any defects found are assigned to developers to get them fixed.

Deployment

Once the product is tested, it is deployed in the production environment or first UAT(User Acceptance testing)is done depending on the customer expectation.

Maintenance

After the deployment of a product in the production environment, maintenance of the product i.e. if any issue comes up and needs to be fixed or any enhancement is to be done is taken care by the developers.

Q4. What is DFD?

Ans.

DFD stands for **Data Flow Diagram**

A data flow diagram maps out the flow of information for any process or system. It uses defined symbols like rectangles, circled and arrows, plus short text labels, to show data inputs, outputs, storage points and the routers between each destination.

Q5. What is Flow chart? Create a flowchart to make addition of two numbers

Ans.

A flow chart is a graphical or symbolic representation of a process. Each step in the process is represented by a different symbol and contains a short description of the process step.

The flowchart symbols are linked together with arrows showing the process flow direction.

Flowchart to add two numbers