Q-1 What is software? What is software engineering?
A-1

Software is a set of instructions, data or programs used to operate computers and execute specific tasks.
Software Engineering is a systematic, disciplined, quantifiable study and approach to the design,development, operation, and maintenance of a software system.

Q-2 Explain types of software.
A-2

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. Examples of modern applications include office suites, graphics software, databases and database management programs, web browsers, word processors, software development tools, image editors and communication platforms.

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. In addition, it controls the operations of the computer hardware and provides an environment or platform for all the other types of software to work in. The OS is the best example of system software; it manages all the other computer programs. Other examples of system software include the firmware, computer language translators and system utilities.

Q-3 What is SDLC? Explain each phase of SDLC
A-3

One of the fundamental procedures of developing software in a step by step manner is by following the Software Development Life Cycle (SDLC). SDLC is a popular practice that is followed by different organisations for designing and developing high-quality software applications. It acts as a framework that holds some specific tasks to be achieved at every phase during the software development progression.

The various phases of SDLC are explained below:

First Phase: Requirement Collection or Planning Phase

The prime focus of this phase is to gather the essential requirements from the customer. This information gets collected by the business analyst from their target customer(s) and plans the BRS (Business requirement Specification) for the development of the product. The team of all the designers and BA will do brainstorming to extract all the requirements and plan accordingly for the new system to be developed? Some popular questions that this meeting picks up are - Who will use the product? What must be the output data by the product?

Second Phase: Defining or Feasibility Study Phase

When the BRS documentation is done, there are another set of employees like Human Resource (HR), Finance Analyst, Architect, a Business analyst as well as Project manager will sit jointly discuss as well as analyse how to proceed and whether it is feasible and possible in the allotted budget. Such decisions are taken depending on the cost, resources, time, etc. Documentation is made, which is the SRS (Software Requirement Specification) document, which contains a detailed explanation of product requirements, right from design to development.

Third Phase: Designing Phase

This phase is when the design specification is organised from the prerequisite document when the project is approved to go further. This phase contributes to the next phase for development. This phase portrays a blueprint of the product, which helps to specify the hardware and requirements of your system as well as assist in crafting a significant architecture of your system.

Fourth Phase: Building or Coding Phase

As you are preparing with the design document, this phase deals with the developers to start writing the code or prepare for the engineering so that a prototype of the product can be created using some specific tools and techniques. This is considered the longest phase of SDLC.

Fifth Phase: Testing Phase

As your product is prepared for deployment, it needs a prior testing environment by the test engineers to check for bugs and run-time errors, and they check in this phase whether the functionality of the product is working as per the requirement or not. The bugs or defects which are encountered in the test phase are reported to the developers, who fix the bug and revert to the test engineers for further testing. This is an iterative process that continues until your application is free from bugs and defects and works stably.

Sixth Phase: Deployment Phase

Once your prototype or product is developed, tested, and completely in working form as per the requirement, and then it is installed or deployed in the customer's workplace or system for their use.

Seventh Phase: Maintenance Phase

This is an additional phase, and in many cases, this phase does not come under the count of SDLC, when your customer(s) begin using your product and encounter some issues which they want us (as developers) to fix from time to time. The developer fixes the issue, and software testers test the product and hand it over to the customer.

Q-4 What is DFD? Create a DFD diagram on Flipkart

A-4

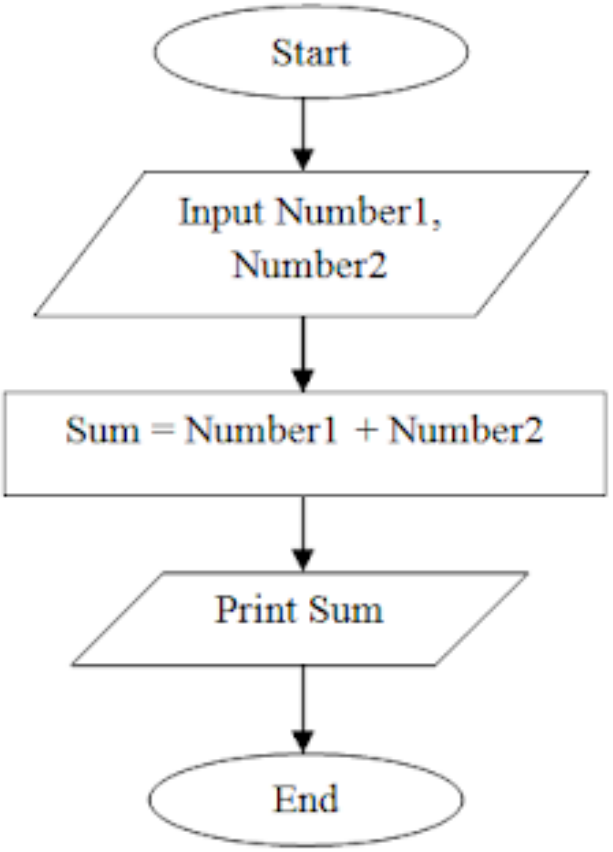
A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

Q-5 What is Flow chart? Create a flowchart to make addition of two numbers

A-5

Flow chart - A flowchart is a type of diagram that represents a workflow or process. A flowchart can also be defined as a diagrammatic representation of an algorithm, a step-by-step approach to solving a task.

Flowchart to Add two numbers.



Flowchart to Add two numbers

Q-6 What is Use case Diagram? Create a use-case on bill payment on paytm

A-6 A use case diagram can summarize the details of your system's users (also known as actors) and their interactions with the system.