

Assignment Module 1

Q-1.) What is software? What is software engineering?

Ans. * SOFTWARE

Software is a set of instructions, data or programs used to operate computers and execute specific tasks.

It is the opposite of hardware, which describes the physical aspects of a computer.

Software is a generic term used to refer to applications, scripts and programs that run on a device.

It can be thought of as the variable part of a computer, while hardware is the invariable part.

* SOFTWARE ENGINEERING

~The term software engineering is the product of two words, software, and engineering.

~The software is a collection of integrated programs.

Software subsists of carefully-organized instructions and code written by developers on any of various particular computer languages.

Computer programs and related documentation such as requirements, design models and user manuals.

~Engineering is the application of scientific and practical knowledge to invent, design, build, maintain, and improve frameworks, processes, etc.

Software Engineering is an engineering branch related to the evolution of software product using well-defined scientific principles, techniques, and procedures.

The result of software engineering is an effective and reliable software product.

Q-2) Explain types of software.

Ans. * Types of Software :

1. Application Software.
2. System Software.
3. Programming Software.
4. Programming Software.
5. Utility 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. 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.
- **Driver software.** Also known as device drivers, 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. Examples include software that comes with any nonstandard hardware, including special game controllers, as well as the software that enables standard hardware, such as USB storage devices, keyboards, headphones and printers.
- **Middleware.** The term *middleware* describes software that mediates between application and system software or between two different kinds of application software. For example, middleware enables Microsoft Windows to talk to Excel and Word. It is also used to send a remote work request from an application in a computer that has one kind of OS, to an application in a computer with a different OS. It also enables newer applications to work with legacy ones.
- **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. Examples of programming software include assemblers, compilers, debuggers and interpreters.

Q-3) What is SDLC? Explain each phase of SDLC.

Ans. *SDLC (Software Development Life Cycle)

The software development lifecycle (SDLC) is the cost-effective and time-efficient process that development teams use to design and build high-quality software.

The goal of SDLC is to minimize project risks through forward planning so that software meets customer expectations during production and beyond.

This methodology outlines a series of steps that divide the software development process into tasks you can assign, complete, and measure.

*Each Phase of SDLC :

1. 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.

2. 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.

3. Implementation or Coding : Implementation/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.

4. 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.

5. 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.

6. Maintenance : After the deployment of a product on 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.

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

Ans. * DFD(Data Flow Diagram) :

DFD is the abbreviation for Data Flow Diagram.

The flow of data of a system or a process is represented by DFD.

It also gives insight into the inputs and outputs of each entity and the process itself.

DFD does not have control flow and no loops or decision rules are present.

Specific operations depending on the type of data can be explained by a flowchart.

* Create a DFD diagram on Flipkart :



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

Ans. * FLOW CHART

A flowchart is a diagram that depicts a process, system or computer algorithm.

They are widely used in multiple fields to document, study, plan, improve and communicate often complex processes in clear, easy-to-understand diagrams.

Flowcharts, sometimes spelled as flow charts, use rectangles, ovals, diamonds and potentially numerous other shapes to define the type of step, along with connecting arrows to define flow and sequence.

They can range from simple, hand-drawn charts to comprehensive computer-drawn diagrams depicting multiple steps and routes.

If we consider all the various forms of flowcharts, they are one of the most common diagrams on the planet,

used by both technical and non-technical people in numerous fields. Flowcharts are sometimes called by more specialized names such as Process Flowchart,

Process Map, Functional Flowchart, Business Process Mapping, Business Process Modeling and Notation (BPMN), or Process Flow Diagram (PFD).

They are related to other popular diagrams, such as Data Flow Diagrams (DFDs) and Unified Modeling Language (UML) Activity Diagrams.

* Create a flowchart to make addition of two numbers :

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

Ans. * Use case Diagram :

An Use case Diagram is the primary form of system/software requirements for a new software program underdeveloped.

Use cases specify the expected behavior (what), and not the exact method of making it happen (how).

Use cases once specified can be denoted both textual and visual representation (i.e. use case diagram).

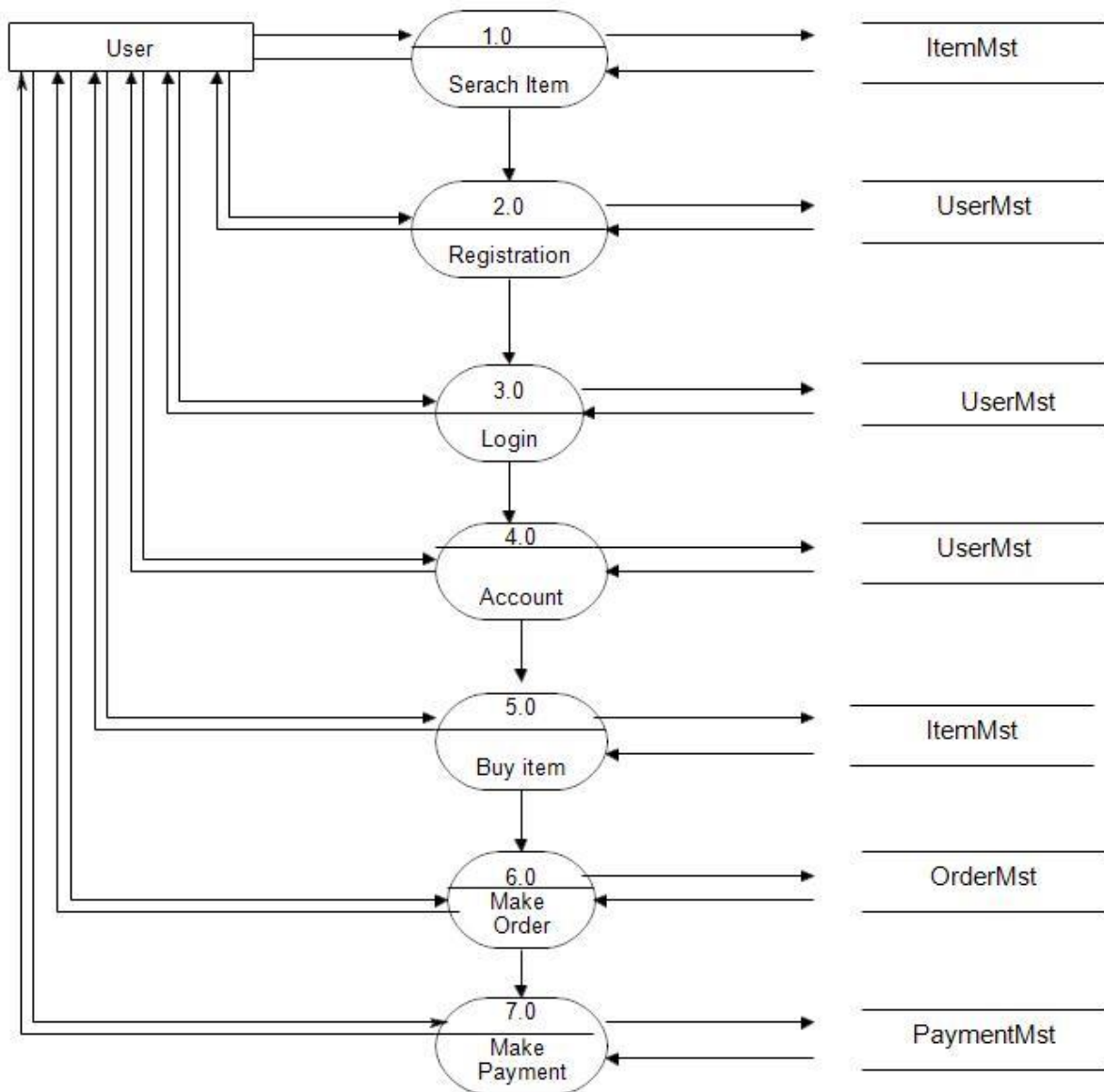
A key concept of use case modeling is that it helps us design a system from the end user's perspective.

It is an effective technique for communicating system behavior in the user's terms by specifying all externally visible system behavior.

* Create a use-case on bill payment on paytm :

DFD Flow Diagram :

1st Level User side DFD



flowchart to make addition of two numbers :

