MODULE : 1 (SDLC)

1) What is software? What is software engineering?

➔ Software is a communication medium (language) for a computer, as it is a collection of data and programs, guiding and providing instructions to computers, as to What To Do? and How To Do?
Engineering is Process of designing and building something that ensure particular purpose. And so, Software Engineering is a systematic approach to the design, development, operation, and maintenance of a software system.

2) Explain types of software.

➔ Following are the three types of software;
1) System software / operating system.
2) Application software
3) Programming language

1) System software or Operating System : - provides the basic functions for computer usage and helps to run the computer hardware and system. - is the s/w used by the computer to translate inputs from various sources into a language which a machine can understand. - Basically OS coordinates the different hardware components of a computer. - Ex. Linux, window, macOS, Android, iOS

2) Application software : - is the general designation of computer programs for performing user tasks. - Types of application software;
1) Mobile application : - Application that run on mobile - Ex. Instagram, facebook, etc
2) Desktop application : - That run stand-alone in a desktop or laptop computer. - Ex. Microsoft office suite which includes Word, Excel and PowerPoint. - Ex. Outlook for email, and firefox, Google Chrome, Mozilla are the web browser. - Anti-virus is an application and so is the media player.
3) Web application : - That run on a web browser - ex. google.com, facebook.com, etc

3) Programming software : - is the process of designing, writing, testing, debugging, and maintaining the source code of computer programs. - This software is written in a programming language. - The purpose of programming is to create a program that exhibits a certain desired behaviour.

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

➔ Software Development Life Cycle (SDLC) is a structured process used to design, develop, and test high-quality software. It encompasses several stages, each

contributing to the overall software development process. Let's explore the key aspects of SDLC:

1) Planning and Requirement Analysis :

- In this initial stage, developers gather requirements from customers, market surveys, and other sources.
- The project's basic structure is designed based on this information.
- Proper planning is essential for project quality.

2) Defining Requirements :

- Detailed requirement analysis takes place.
- The project's scope, features, and functionality are defined.
- Budget constraints and customer expectations are considered.

3) Designing Architecture :

- The software architecture is planned.
- High-level design decisions are made, including system components, data flow, and interfaces.
- This stage lays the foundation for development.

4) Developing Product :

- Actual coding and implementation occur.
- Developers write code based on the design specifications.
- Frequent testing ensures code quality.

5) Product Testing and Integration :

- Comprehensive testing is performed to identify defects.
- Integration testing ensures that different components work together seamlessly.
- Bugs are fixed during this phase.

6) Deployment and Maintenance of Products :

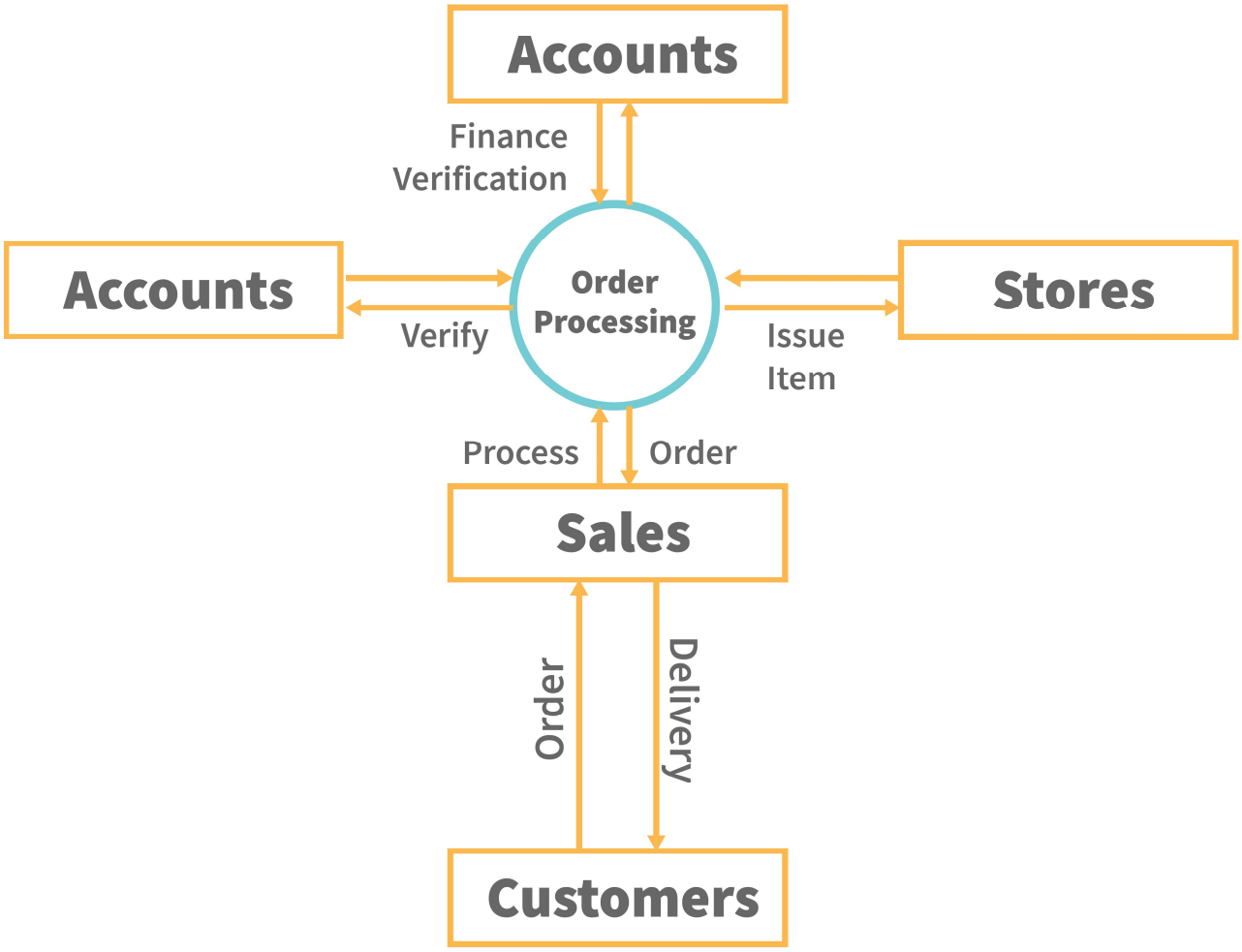
- The software is deployed for end-users.
- Ongoing maintenance and updates are carried out to address issues and enhance functionality.

SDLC models vary, but the common goal is to deliver software that meets user requirements, is maintainable, and is cost-effective within the specified time frame. 1.) Developers follow the SDLC to plan, analyze, design, test, deploy, and maintain software effectively. 2.) It's a crucial process for ensuring successful software development!

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

➔ A Data Flow Diagram (DFD) is a graphical representation of the flow of information within a system or a business process. It provides insights into how data moves from input sources to storage and report generation.

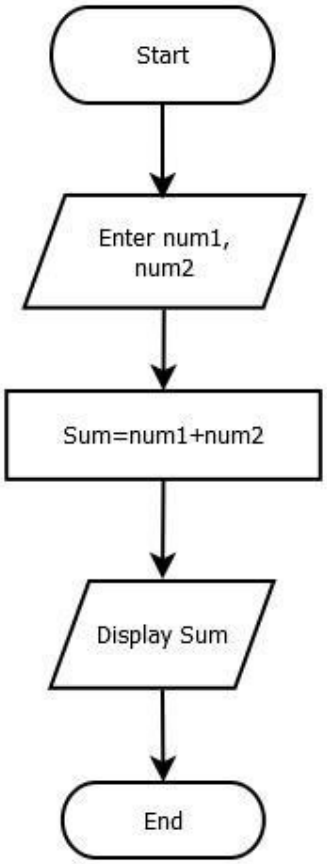
Flipkart DFD.



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

➔ A flowchart is a graphical representation of a workflow or process. It provides a visual depiction of the steps, logic, and control involved in a program or system.

Flowchart for addition of two numbers.



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

➔ A Use Case Diagram is a type of Unified Modeling Language (UML) diagram that illustrates the interaction between actors (users or external systems) and a system.

Use Case Diagram on bill payment on paytm.