**1. What is software? What is software engineering?**

A software is a set of programs that are created to serve a purpose or solve a problem.

Software Engineering is the process of designing, developing, testing and maintaing this software.

**2. Explain types of software.**

There are multiple types of software:

- System Software

These are the softwares which are developed for a system to work such as Operating system, compilers, without these the computer cannot work.

- Application Software

These types of software interact directly with users to serve a generic purpose. These types of softwares can be categorized in two types: custom and generic. Generic applications such as Calculators, Word, Paint, etc they behave same for all the users.

Custom softwares are created as per the user’s requirement.

These can be further categorized into Business softwares for reservations, stocks, etc.

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

SDLC is Software Development Life Cycle.

The phases of SDLC are mentioned below:

- Requirements gathering and analysis: In this phase the requirements of the software are gathered from clients and stake holders.

- Design: In this phase the design of software is created such as software architecture, data structures. There are two types of design:

a) HLD: High Level Design => This gives the architecture of software

b) LLD: Low Level Design => This describes how each and every component of the application will work in the system.

- Implementation & Development: In this phase the design is converted into code. This is the longest phase and here the process includes:

a) Frontend Coding: This involves designing of UI for the software

b) Middleware: Code that connects frontend and backend code

c) Backend Coding: This invloves creating of database and coding backend functionalities.

- Testing: In this phase the software or application is thoroughly tested to ensure that it meets the quality and bugs of the application are fixed.

- Deployment: Once the testing is complete, the application is deployed on the production environment. This application is now available for users to test.

- Maintenance: The application is then maintained, new updates are pushed, any bugs are fixed.

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

A Data Flow Diagram is a graphical representation of different process of a software.

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

A flow chart is the diagramatical representation of step by step approach to solve a problem.

A rectangle is used to denote a process.

Slanted rectangle represent input or output.

Diamond shape is used to denote decision.

Rounded rectangle or circles to denote start or end points.

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

A use case diagram is how users will interact with the system.