# Software Engineering

# Assignment

## MODULE : 1

### 1. What is Software? What is software engineering?

**Software :-**

Software is like the brain of computer, giving instruction to perform specific tasks such as a running application like word processors, web browser and games.

**Software Engineering :-**

Software engineering is the process of designing, Developing, testing and maintaining software. It's like the Backbone of creating reliable and efficient software that meets user needs. Software engineers use various methodologies, tools ,and techniques to ensure high – quality software products.

So, software is the programs that power our devices, while software engineering is the structured that ensure these programs work seamlessly.

### 2. Explain types of software?

**Ans :-**

1. System software :- system software is like the superhero behind the scenes that manage the computer hardware and provide a platform for running application software. Example :- include operating systems like windows, macOS, and Linux.
2. Application software :- Application software is the every day hero that we interact with directly to perform specific tasks it includes programs like web browsers, word processors, games, and design software.

3. **Utility software: utility software is like the handy sidekick that helps in managing, maintaining, and optimizing computer resources.**
   **Example:- include antivirus programs, disk cleaners, and backup software.**

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

**Ans:- SDLC = Software development life cycle**

1. **Planning :- in the planning phase the project scope, requirement, and objectives and defined. This involves understanding what needs to be built, estimating resources and creating project plan.**
2. **Analysis :- during the analysis phase, the team gather requirement from stakeholders, analyses them, and creates a detailed requirement specification document. This phase focuses on understanding the project's goals and user need.**
3. **Design:- the design phase involves creating a blueprint for the software system based on the requirement gathered. It includes both high- level architectural design and detailed design of individual components**
4. **Implementation/coding :- in the implementation phase, the actual coding and programming of the software take place. Developer write code according to the design specification and best coding practices.**
5. **Testing :- the testing phase is whare the software is tasted for defects, bugs, and quality assurance. Difference types of testing and system testing are performed to ensure the software works as intended.**
6. **Deployment :- once the software passes all tests successfully, it is deployed to the production environment. This phase involves installing the software on users machines or servers and making it operational.**
7. **Maintenance:- the final phase is maintenance, whare the software is maintenance, where the software is monitored, update, and improved to address any issues that arise post-deployment. This phase ensures the software remains relevant and efficient over its life cycle.**

These phase of the SDLC provide a structured approach to software development, ensuring quality, efficiency, and alignment with user requirements.

## 4. What is DFD? Create a DFD diagram Flipkart

Ans:- a DFD is data flow diagram. It's like a picture that shows how information moves around in a system. It can help you understand how data goes from one place to another in a process or system.

## DFD :- FLIPKART DFD

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| | | |
|---|---|---|
| CUSTOMER | → | REGISTRATION |
| PRODUCT SEARCH | → | ORDER PLACEMENT |
| PAYMENT PROCESS | → | PAYMENT GATEWAY |

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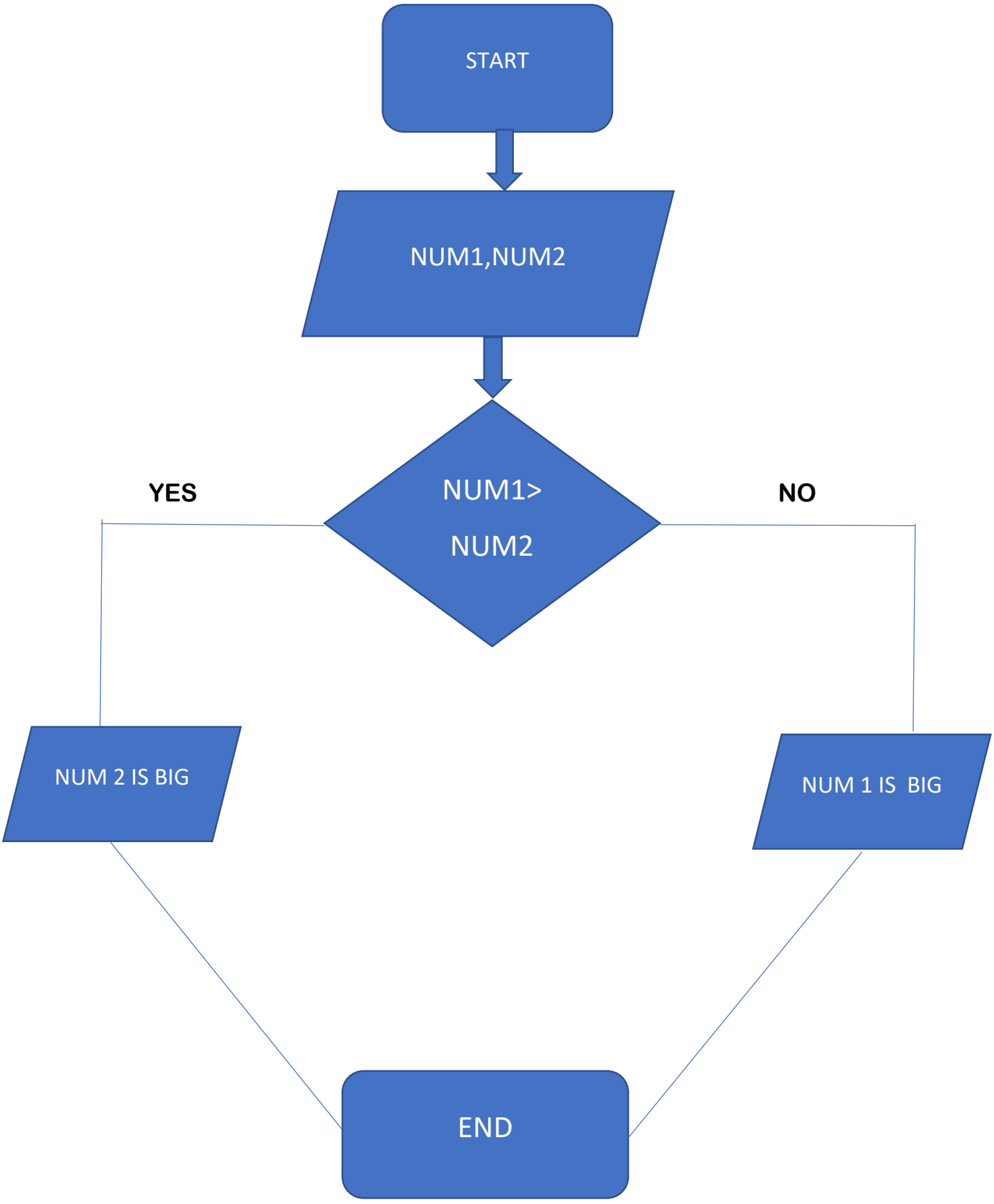
## 5. What is Flow chart? Create a flowchart to make addition of two numbers

Ans :- a flow chart is like a pictures that shows the steps or action in a process. It uses different shapes and arrows to illustrate the sequence of steps in a workflow or procedure . flow chart are handy for mapping out processes, decision- making paths, and workflows in a clear and easy -to -understand way.


START
NUM1,NUM2
NUM1>
NUM2
YES
NO
NUM 2 IS BIG
NUM 1 IS BIG
END

## 6. What is Use case Diagram? Create a use-case on bill payment on PAYTM.

**Ans:-** a use case is diagram is like a pictures that shows the interaction between users and a system. It's a visual representation that helps you understand how users will interact with the system to achieve specific goals or tasks use case diagram typically display actors and use cases connected by lines to shows the relationship and interaction.

**USE CASE DIAGRAM :-**

**USER :-**

- REGISTRATION
- SELECT BILL TYPE
- BILL DETAILS
- PAYMENT METHOD
- PAYMENT GATEWAY
- PAYMENT PROCESS
- PAYMENT CONFIRMATION