ASSIGNMENT 1

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

-Software is a program or group of program with instructions that tell computers what to do ,enables it to perform tasks and solve problems .

-Enginnering: process of designing and building something that ensure particular purpose

Software Engineering -A program, or group of programs, with instructions to perform desired functionality is called software. -It is Process of designing developing testing and maintain software. -Software engineering includes a variety of techniques tools and methodologies including requirements analysis, design, testing, and maintenance

-Key Principles Of SE

Abstraction Encapsulation Reusability Maintenance Testing

2. Explain types of software

-1.System Software Provides a platform for other software to run on. Examples include operating systems (e.g., Windows, macOS, Linux), device drivers, and utility programs (e.g., antivirus software, disk defragmenters).

-2. Application Software: Designed to perform specific tasks or functions for end-users. Examples include word processors (e.g., Microsoft Word, Google Docs), spreadsheet programs (e.g., Microsoft Excel, Google Sheets), email clients (e.g., Microsoft Outlook, Gmail), web browsers (e.g., Google Chrome, Mozilla Firefox), and multimedia players (e.g., VLC media player, Windows Media Player).

- 3. Programming Software: Tools used by software developers to create, debug, and maintain software applications. Examples include integrated development environments (IDEs) like Visual Studio, Eclipse, and JetBrains IntelliJ IDEA, as well as text editors (e.g., Sublime Text, Atom) and version control systems (e.g., Git, SVN).

- 4.Enterprise Software: Designed for organizations and businesses to support their internal operations and processes. Examples include enterprise resource planning (ERP) systems, customer relationship management (CRM) software, supply chain management (SCM) software, and human resource management (HRM) software.

- 5. Educational Software: Designed to facilitate learning and education. Examples include interactive educational games, simulations, learning management systems (LMS), and educational content creation tools.

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

-SDLC stands for Software Development Life Cycle. It is a process used by software development teams to design, develop, test, and deploy software products. SDLC provides a structured framework for carrying out these activities in a systematic and organized manner. Here's an explanation of the phases typically involved in the SDLC:

1. Planning: In this phase, the project objectives, scope, requirements, and constraints are identified and documented. Key stakeholders are involved in defining the project vision, goals, and deliverables. Project planning includes creating a project plan, defining roles and responsibilities, estimating resources, and establishing timelines and milestones

. 2.Analysis: During the analysis phase, the requirements gathered in the planning phase are analyzed in detail to understand the needs of end-users and stakeholders. This involves identifying functional and non-functional requirements, conducting stakeholder interviews, analyzing business processes, and documenting use cases and user stories.

3.Design: In the design phase, the software architecture and detailed design are developed based on the requirements identified in the analysis phase. This includes defining the overall system architecture, designing the user interface, creating data models and database schemas, and specifying the system components, modules, and interfaces.

4.Implementation: The implementation phase involves coding or programming the software based on the design specifications. Programmers

write code using programming languages and development tools, following coding standards and best practices. This phase also includes unit testing to verify the correctness of individual components and modules.

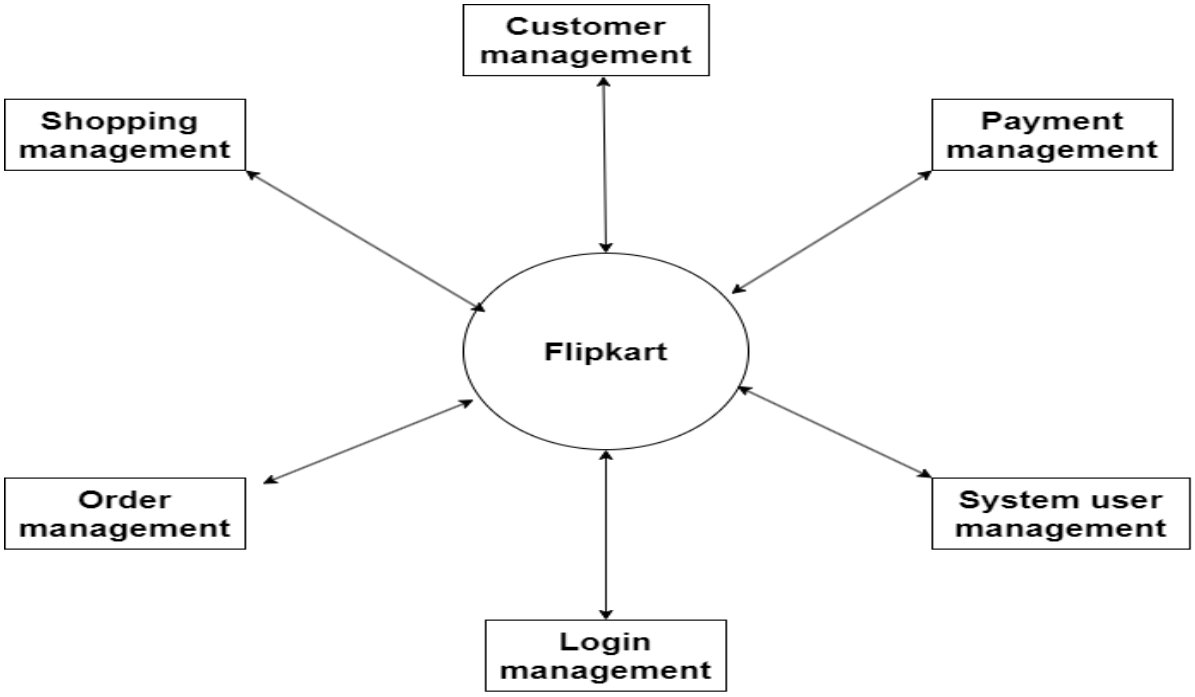
5.Testing: In the testing phase, the software is tested to ensure that it meets the specified requirements and quality standards. Different types of testing, such as unit testing, integration testing, system testing, and acceptance testing, are performed to identify defects and validate the functionality, performance, and usability of the software.

6.Maintenance: The maintenance phase involves managing and supporting the software after it has been deployed. This includes fixing bugs and issues reported by users, implementing enhancements and updates and addressing changes in the operating environment or user requirements. Maintainance activities aim to ensure the long-term reliability, security, and performance of the software.

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

A- DFD or Data Flow Diagram represents the flow of data within information systems. They provide a graphical representation of the data flow of a system that can be understood by both technical and non-technical users. The models enable software engineers, customers, and users to work together effectively during the analysis and specification of requirements.

Flipkart dataflow diagram



0 Level DFD - Flipkart System

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

A flowchart is a visual representation of a process or algorithm, using symbols and arrows to illustrate the steps involved and the flow of control from one step to another. It's a widely used tool in various fields such as software development, business process analysis, project management, and problem-solving.

Steps Of Alogorithm:

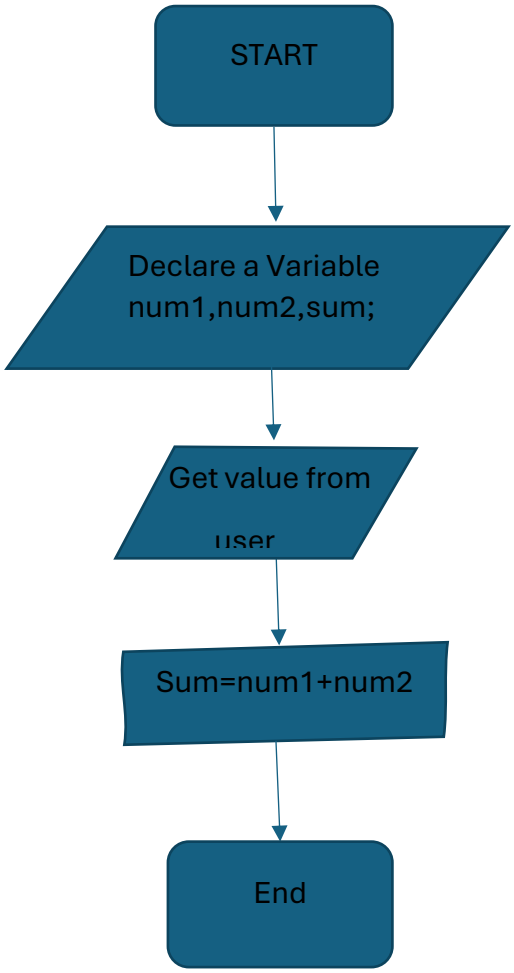
1] Start

2] Declare variable num1,num2;

3] Get value from user

4] Sum of num1 and num2

5] Display result

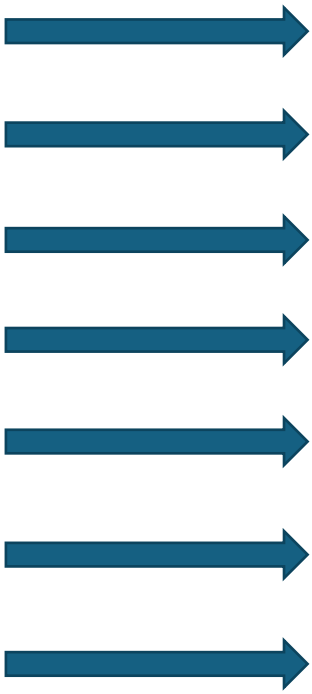


6. What is Use case Diagram? Create a use-case on bill payment on paytm.

-Diagrams are visual tools used across industries to represent complex information, aiding in communication, analysis, and planning. They help in illustrating processes, structures, relationships, and concepts more intuitively, making it easier for stakeholders to understand and work with the information presented.

Use case on bill payment on paytm:-

USER: -


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