ASSIGNMENT

Module:-

Overview of IT Industry

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• What is software? What is software engineering?

Software :- Software is a set of programs (sequence of instructions) that allows the users to perform a well-defined function or some specified task. Software is responsible for directing all computer-related devices and instructing them regarding what and how the task is to be performed. Programmers use different languages such as C, C++, JAVA, Python etc. to create software

Software Engineering :- Software engineering is defined as a process of analysing user requirements and then designing, building, and testing software application which will satisfy those requirements.

• Explain types of software

Types of 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. Ex. Microsoft Office, Powerpoint, Paint etc.

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. The OS is the best example of system software; it manages all the other computer programs. Ex. Notepad, calculator etc.

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. Ex. Audio Driver, Video Driver etc.

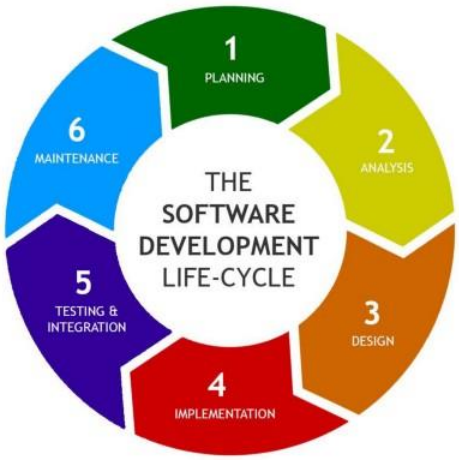
Middleware:- The term *middleware* describes software that mediates between application and system software or between two different kinds of application software. For example, middleware enables Microsoft Windows

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. Ex. Database Middleware, Applicatiob server middleware etc.

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. Ex. Turbo C, Eclipse etc.

• What is SDLC? Explain each phase of SDLC.

SDLC Knowns as Software Devlopment Life Cycle. SDLC is a process followed for a software project, within a software organization. It consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software. The life cycle defines a methodology for improving the quality of software and the overall development process.



Requirement Gathering :- Requirement Gathering is the most important and fundamental stage in SDLC. It is performed by the senior members of the team with inputs from the customer, the sales department, market surveys and domain experts in the industry. This information is then used to plan the basic project approach and to conduct product feasibility study in the economical, operational and technical areas.

Analysis :- Once the requirement Gathering is done the next step is to clearly define and document the product requirements and get them approved from the customer or the market analysts. This is done through an SRS (Software Requirement Specification) document which consists of all the product requirements to be designed and developed during the project life cycle.

Designing :- Based on the requirements specified in SRS, usually more than one design approach for the product architecture is proposed and documented in a DDS - Design Document Specification.

This DDS is reviewed by all the important stakeholders and based on various parameters as risk assessment, product robustness, design modularity, budget and time constraints, the best design approach is selected for the product.

Implementation:- In this stage of SDLC the actual development starts and the product is built. The programming code is generated as per DDS during this stage. If the design is performed in a detailed and organized manner, code generation can be accomplished without much hassle.

Testing :- This stage is usually a subset of all the stages as in the modern SDLC models, the testing activities are mostly involved in all the stages of SDLC. However, this stage refers to the testing only stage of the product where product defects are reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.

Maintenance :- Once the product is tested and ready to be deployed it is released formally in the appropriate market. Sometimes product deployment happens in stages as per the business strategy of that organization. Then based on the feedback, the product may be released as it is or with suggested enhancements in the targeting market segment. After the product is released in the market, its maintenance is done for the existing customer base.

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

DFD stands for “Data Flow Diagram”. It is also known as a “Bubble Chart”. A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short

text labels, to show data inputs, outputs, storage points and the routes between each destination.

Circle :- A circle (bubble) shows a process that transforms data inputs into data outputs.

Data Flow :- A curved line shows the flow of data into or out of a process or data store.

Data Store :- A set of parallel lines shows a place for the collection of data items. A data store indicates that the data is stored which can be used at a later stage or by the other processes in a different order. The data store can have an element or group of elements.

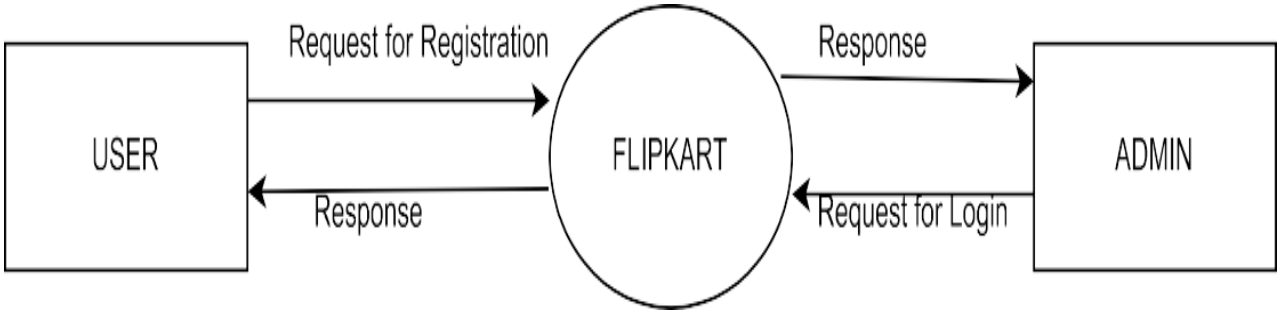
Source or Sink :- Source or Sink is an external entity and acts as a source of system inputs or sink of system outputs.

Levels in Data Flow Diagrams (DFD) :-

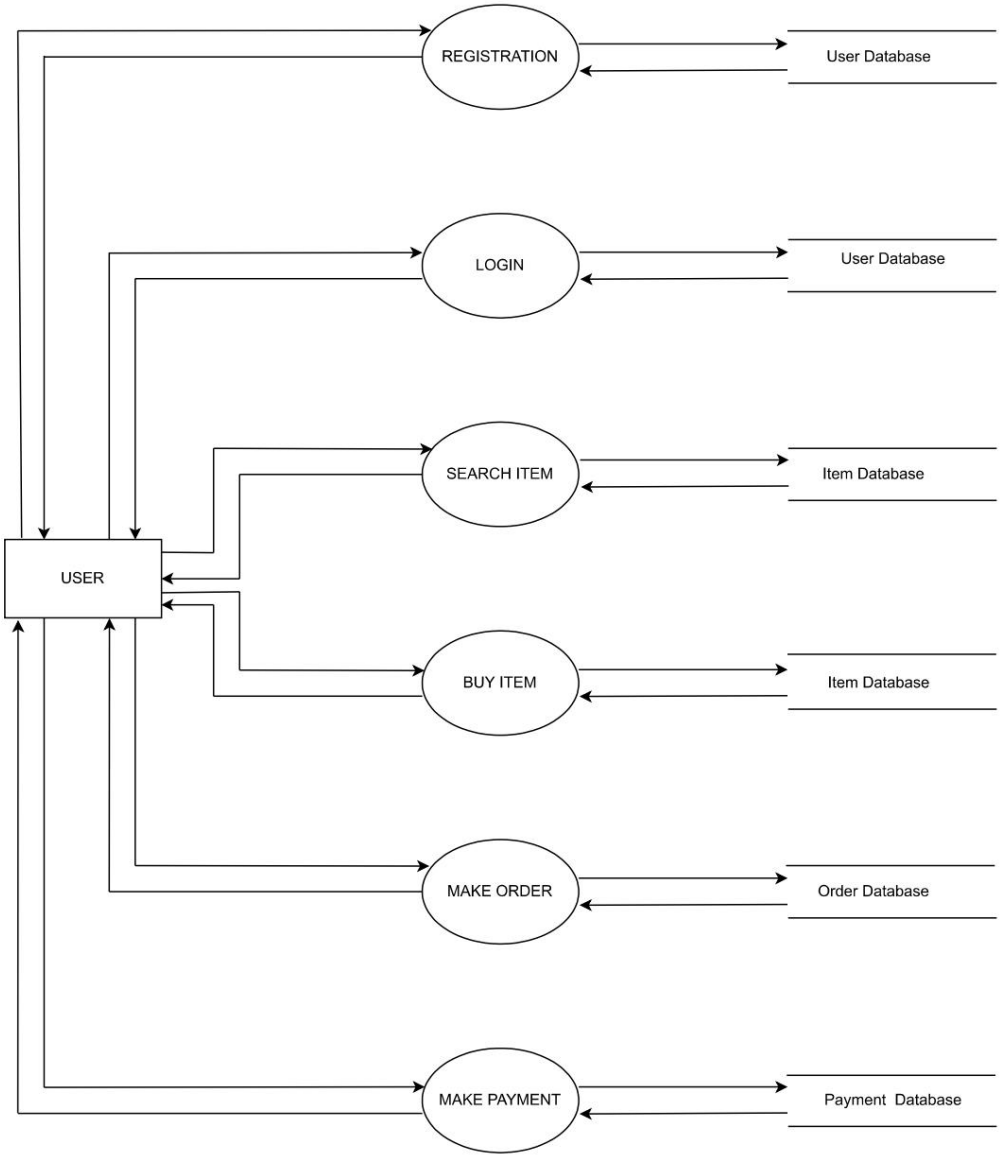
The DFD may be used to perform a system or software at any level of abstraction. Infact, DFDs may be partitioned into levels that represent increasing information flow and functional detail. Levels in DFD are numbered 0, 1, 2 or beyond. Here, we will see primarily three levels in the data flow diagram, which are: 0-level DFD, 1-level DFD, and 2-level DFD.

DFD diagram on Flipkart :-

First we Creat 0 level DFD diagram on Flipkart



Now we Creat 1st level DFD diagram on Flipkart.



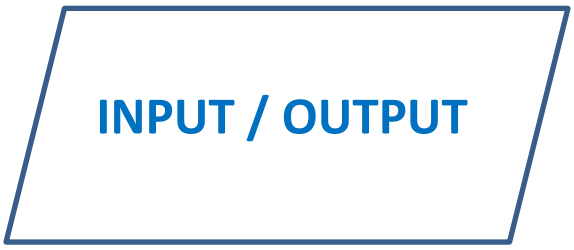
• What is Flow chart? Create a flowchart to make addition of two numbers

Flow Chart :- The Flowchart is the most widely used graphical representation of an algorithm and procedural design workflows. It uses various symbols to show the operations and decisions to be followed in a program. It flows in sequential order.

Flowchart Symbols:- The different flowchart symbols have different conventional meanings.The various symbols used in Flowchart Designs are given below.

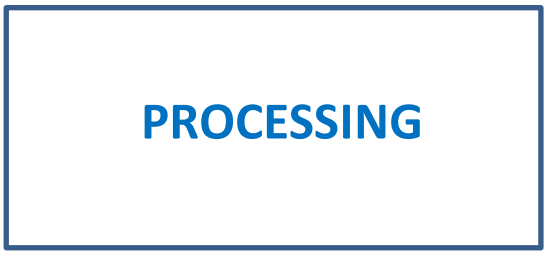
Terminal Symbol :- In the flowchart, it is represented with the help of a circle for denoting the start and stop symbol. The symbol given below is used to represent the terminal symbol.

Input/output Symbol :- The input symbol is used to represent the input data, and the output symbol is used to display the output operation. The symbol given below is used for representing the Input/output symbol.

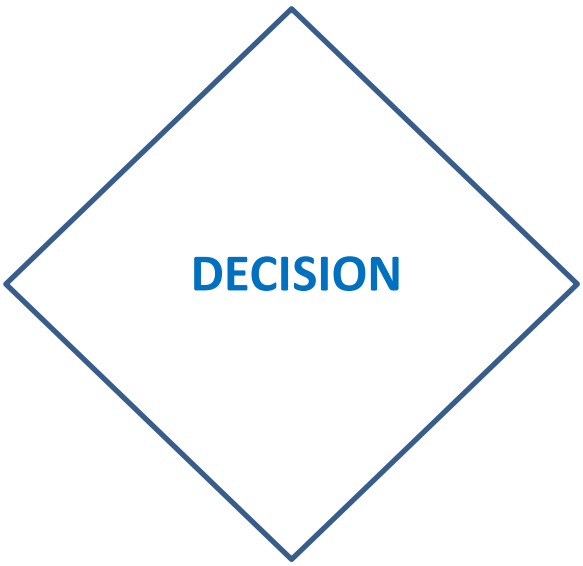


Processing Symbol :- It is represented in a flowchart with the help of a rectangle box used to represent the arithmetic and data movement

instructions. The symbol given below is used to represent the processing symbol.

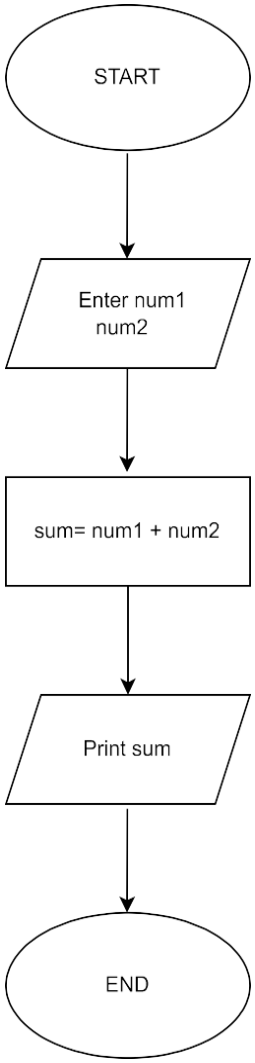


Decision Symbol :- Diamond symbol is used for represents decision-making statements. The symbol given below is used to represent the decision symbol.



Flow lines:- It represents the exact sequence in which instructions are executed. Arrows are used to represent the flow lines in a flowchart. The symbol given below is used for representing the flow lines:

Flowchart of addition of two numbers



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

Use Case Diagram :- A use case diagram is used to represent the dynamic behavior of a system. It encapsulates the system's functionality by incorporating use cases, actors, and their relationships. It models the tasks, services, and functions required by a system/subsystem of an application. It

depicts the high-level functionality of a system and also tells how the user handles a system.

Purpose of Use Case Diagrams :- The main purpose of a use case diagram is to portray the dynamic aspect of a system. It accumulates the system's requirement, which includes both internal as well as external influences. It invokes persons, use cases, and several things that invoke the actors and elements accountable for the implementation of use case diagrams. It represents how an entity from the external environment can interact with a part of the system.

Use-case on bill payment on paytm