Software Engineering Assignnment

Q.1-What is software ? What is Software engineering?

❖ Software

- Software is set of instruction,Or set of programs are known as software.

-Software is that part of computer which cannot be touched.Software tell a computer what to do and how to do it.

- Types of software

  -System software

  -Application software

- **System Software**:-
  -System software is a software design to provide a platform to other software.
  -System software control & manage the operation of computer hardware.
  Ex-Opearting system-(windows,Android,Linux).
- **Application software**:-
  -The software that helps you to do a specific type of work is called application software.
  Ex-Ms office.

❖ **Software Engineering**

-Software engineering is a technique through which we can developed or created software for computer system and any other electronic devices.

-In other words,software engineering is a process in which user needs are analyzed and software is designed based on there needs.

-In software engineering the development of software using well define scientific principe method and proccedures.

-Software engineers build these software and application by using designing and programming language.

- Purpose of software engineering
  -To manage large software.
  -for greater scalablity
  -to manage the cost
  -To manage the dynamic nature of the software.
  -For better quality management.

Q.2-Explain types of software.

- Types of software.
  1)Application Software.
  2)System Software.
  3)Driver Software
  4)Middleware
  5)Programming Software

1)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 group of programs that run the application for the user.

-An application software is written in high-leval language like java,C++.net or PHP.

-Payroll software,accounting software,MS office and so on examples of an application.

2)System Software:-

-System software is a type of computer program that is designed to run a computers hardware and application program.

-System software coordinates the activities and function of the hardware and software.

-The os is the best examples os the system software ,it manages all other computer programs.

-Other examples of system software include the firmware , computer language translaters and system utilities.

-System software generally includes the feature.

-High speed,

-Hard to manipulate,

-Written in low-level computer,

-Close to the system.

-Versatile.

Example :-Notepade ,Calculator.

3)Driver Software:-

-A driver or device driver , is a set of files that tells a piece of hardware how to function by communicating with a computers operating system.

-Also known as device drivers ,this software is often considered a type of system software.

-Device drivers control the devices and peripherals connected to computer,enabling them to perform their specific task.

-Every device that is connected to computer needs at least one device driver to function.

-Examples include software that comes with any nonstandard hardware,

-Including special game controllers,as well as the software that enables standard hardware,such as usb storage device ,keyboard,Headphones and printers.

Example-Audio driver & video driver.

4)Middleware

-Middleware is software and cloud services that provide common services and capabilities to applications and help developers and operators build and deploy application more efficiently.

-The term middeware describes software that mediates between application and system software or between two diffrent kinds of application software.for example middleware enable microsoft windows to talk excel & word.

-It is also used to send a remote work request from as application in a computer that has one kind of OS, to an application in computer with a diffrent os.

Example-Database middleware,application server middleware.

5)Programing 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.

-Example of programming software include assemblers ,compilers ,debuggres and interpreters.

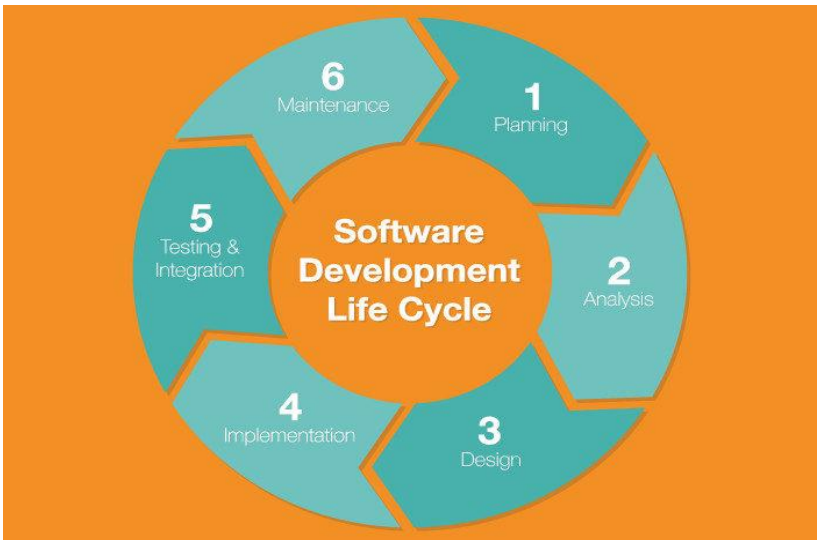
Examples- Turbo c,Eclipse,Sublime etc...

Q.3-What is SDLC?DExplain each phase Of SDLC.

- SDLC-Software development ife cycle.

  SDLC is a structure that imposed software product that define the process for
  planing,Annalysis,Designing,Implementation,Testing,Maintenance.

- In simple word entire life time of software from begining to ending.
- There are six phases of SDLC
  1. Requirement Gathering/Collection.
  2. Analysis.
  3. Designing.
  4. Implementation
  5. Testing.
  6. Maintenance.



1.Requirement gathering/Collection.

-During the phase all relevant information is collected from customer to develop a product as per their expectation.

- Bussiness analyst and project manager set up a meeting with the customer to gather all the information like what the customer wants to build who will be the end user,what is the purpose of the product.before building a product a core understanding or knowledge of the product very important.

2.Analysis

-Requirement Analysis is the most important and necessary stage in SDLC.

-planning for the quality assurance requirements and identification of the risks associated with the projects is also done at this stage.

-The most common steps involved in the analysis and planning phase

- Drafting a project plan
- Evaluation and identification of resorces.
- Feasibility assesment.

3.Designing

- The design phase in the Software development life cycle involves two functional steps.

- High-level design provides the architecture of the software product.software architects and senior developers develop this design.
- Low – level design explains the functioning of every featureand component in the product and its working.

4. Implementation

-implementation phase is where the software developers start writing the code for the product, the operations team will set up the physical hardware for the servers,and the designers will program the user interface.

-The coding phase is the process of translating the design into a working software product.

-The two significant steps in this phase.

- Setting up IT infrastructure
- Building codebase for the software

5.Testing

-Back in the development & implementation phase,Servers,databases,and applications are setup.Now in the testing phase,The ready software is passed on to the testing team.

-Testing and Quality assurance team validates whether all of the requirements have been met,Reassures all the functionlity is working as expected and identify all the possible bugs and report them to bug tracking system.This process is also known as bug lifecycle.

-Two significant activities involved in this phase .

- Coding test case and
- Execution of test cases.

6.Maintenance

-in the deployment phase, the operations team will end up nearing the staging ordeveloping environment systems and get ready for production.

- The implementation team will install new hardware,Servers and have everything saclable for production.this includes setting up the links, databases for real time users,and syncing up with development and release managers.

-The maintenance team will regularly examine the application,monitor the load on the servers.

-The maintence team will support the application in all circumstance the furthers update and enhance the software to match the real- world client scenarios.

Q.4-What is DFD?Create DFD diagram on flipkart.

-DFD stand of “Data flow diagram”.It is also known as buble chart.

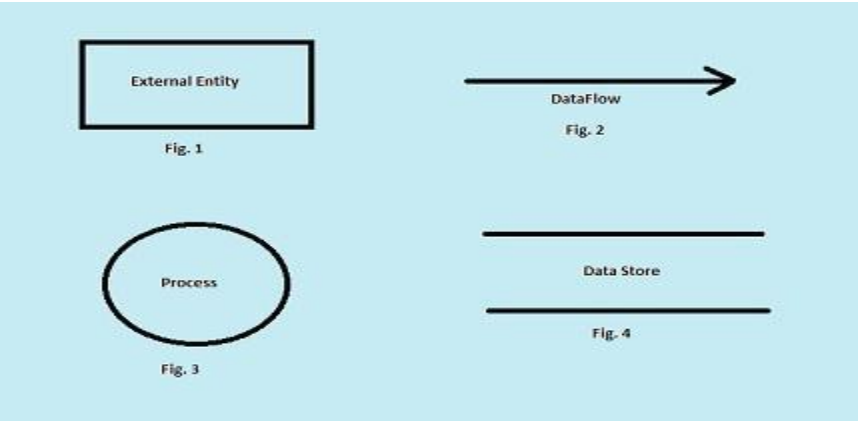
-Through which we can respect the flow of the data graphically on

an information system.

-By using DFD we can easily understand the overall functionality of system,Beacause the diagram respect the incoming data flow ,outgoing data flow and stores data in a graphical form.

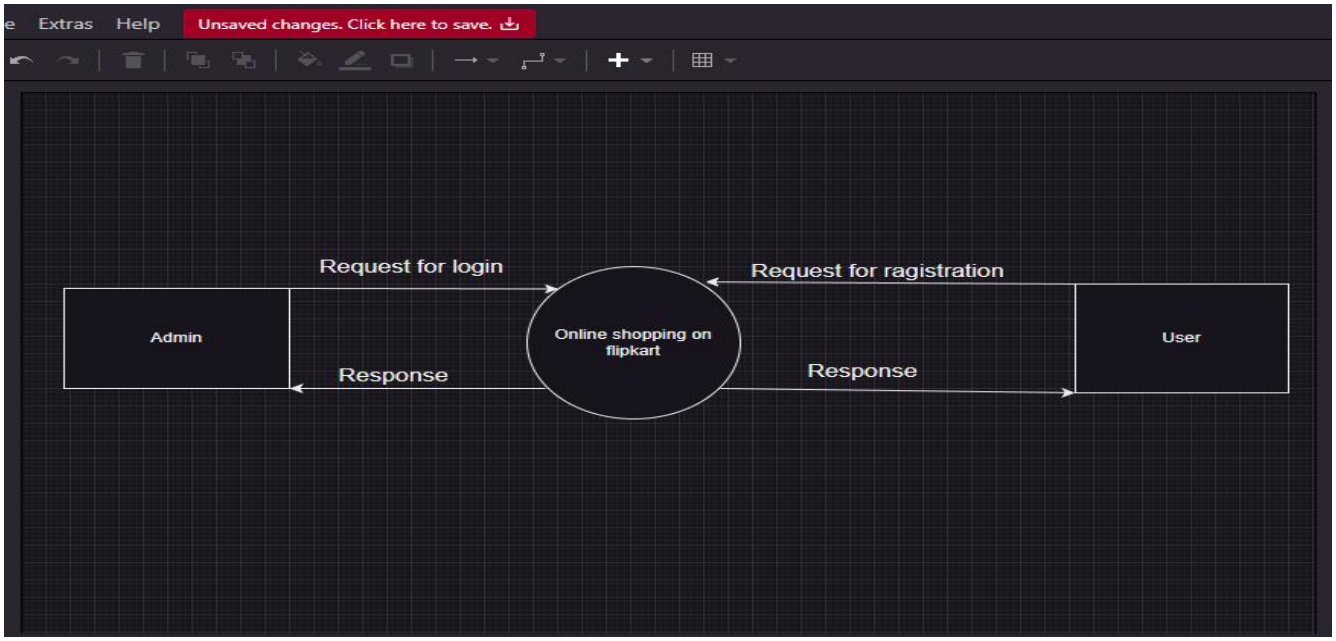
-It describes how data is processed in a system in terms input & Output.

- Componuts
    1. External Entity.
    2. Dataflow
    3. Process or Bubble
    4. Data Store

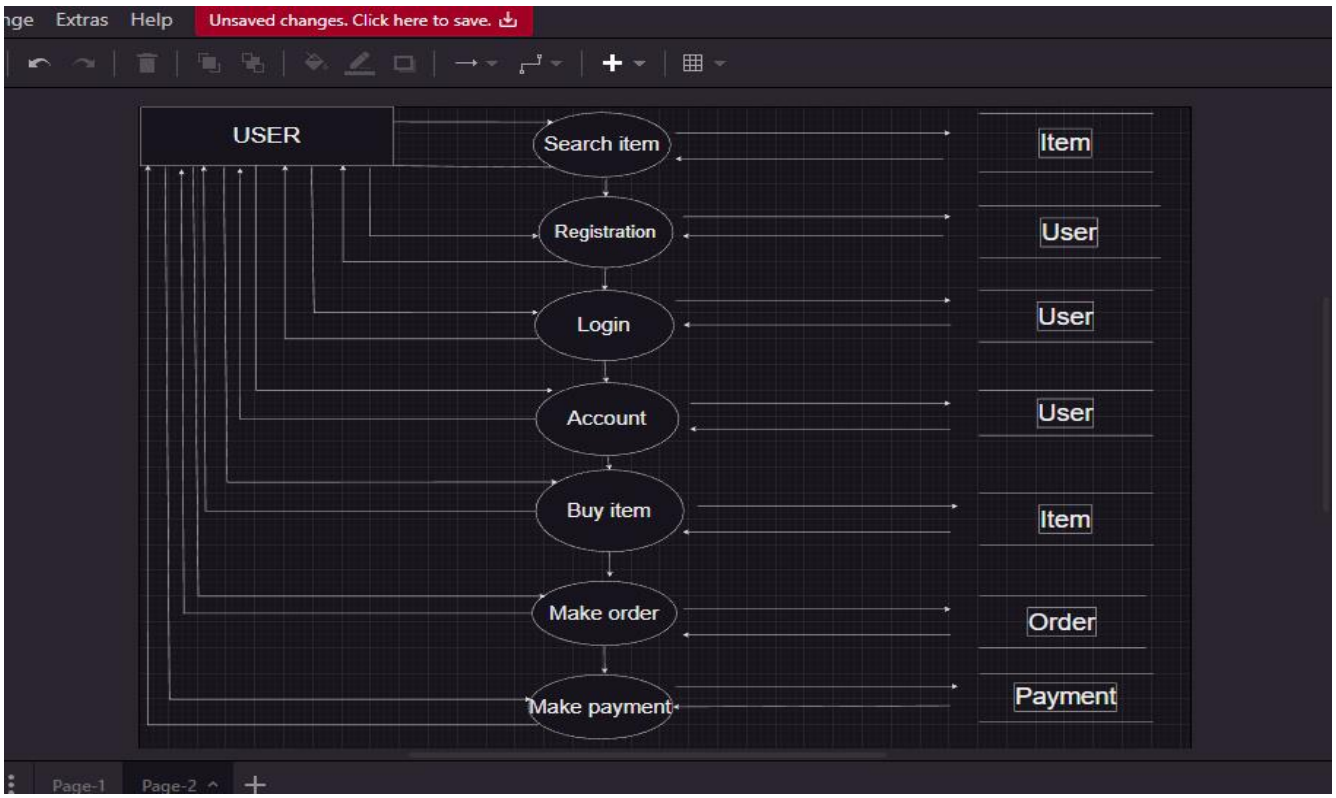


Create DFD diagram on flipkart.

0th level DFD diagram.



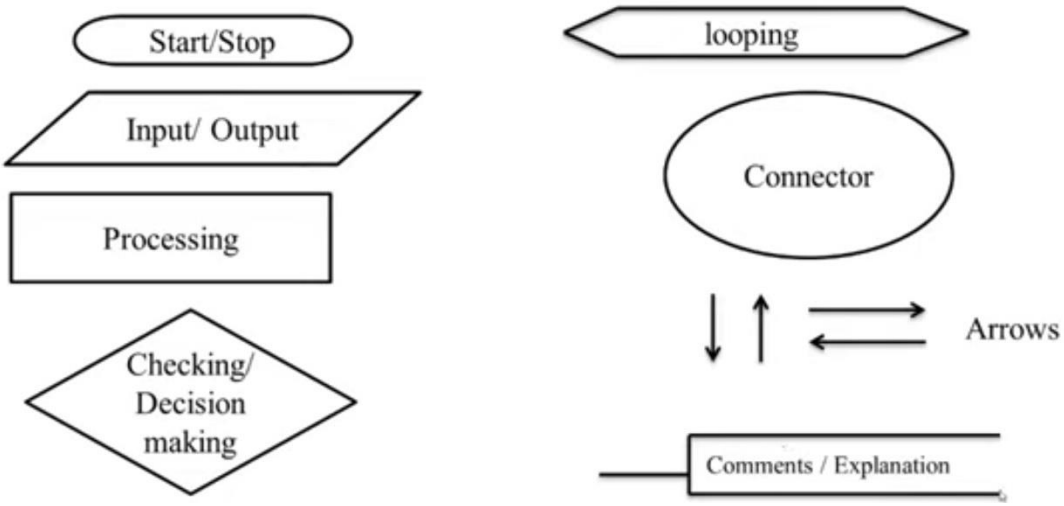
1st level DFD diagram.



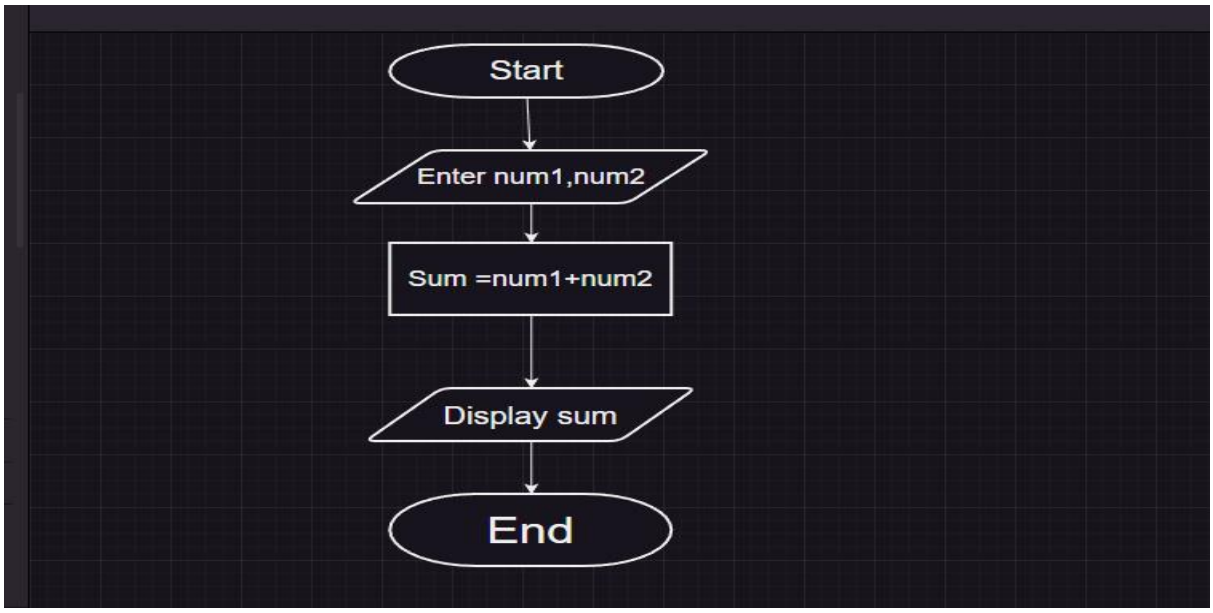
Q-5.What is Flow chart? Create a flowchart to make addition of two numbers.

-Flowchart is a symbolic or diagrammatic representation of an algorithm.It uses several geometrica figures to represent the operations,and arrows to show the direction of flow.

-Flow Chart Symbol



Flowchart addition of two numbers.



Q-6.What is use case Diagram? Create a use – case on bil payment on paytm.

-A use case diagarm is a graphical depiction of users possible interactions witha system.A use case diagram shows various use cases and different types of users the system has and will often be accompanied by other typesof diagrams as well.

-The use cases are represented by eithercircles or ellipses.

-Componunts of use case.

-Actor

-Actor role play in (System)Not a real person system ,Group of the people.

-Actor are external entities that interact directly with the system.Using our order system example .

-In use case diagaram,Users of the system depicted as actor.Each actor performs a specific role in the system.

-Stick figures that represent the people actually employing the use case.

-Use case

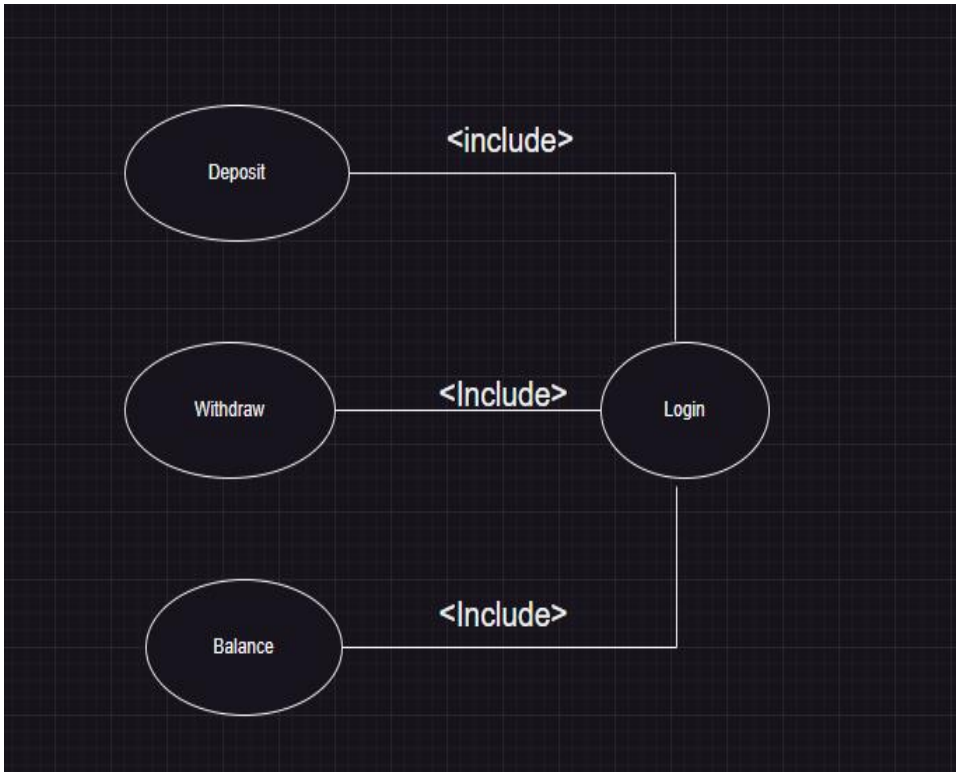
-A use case diagram is way to summrize details of system and the users within the system.

-Connector (Simple line) use for interaction.

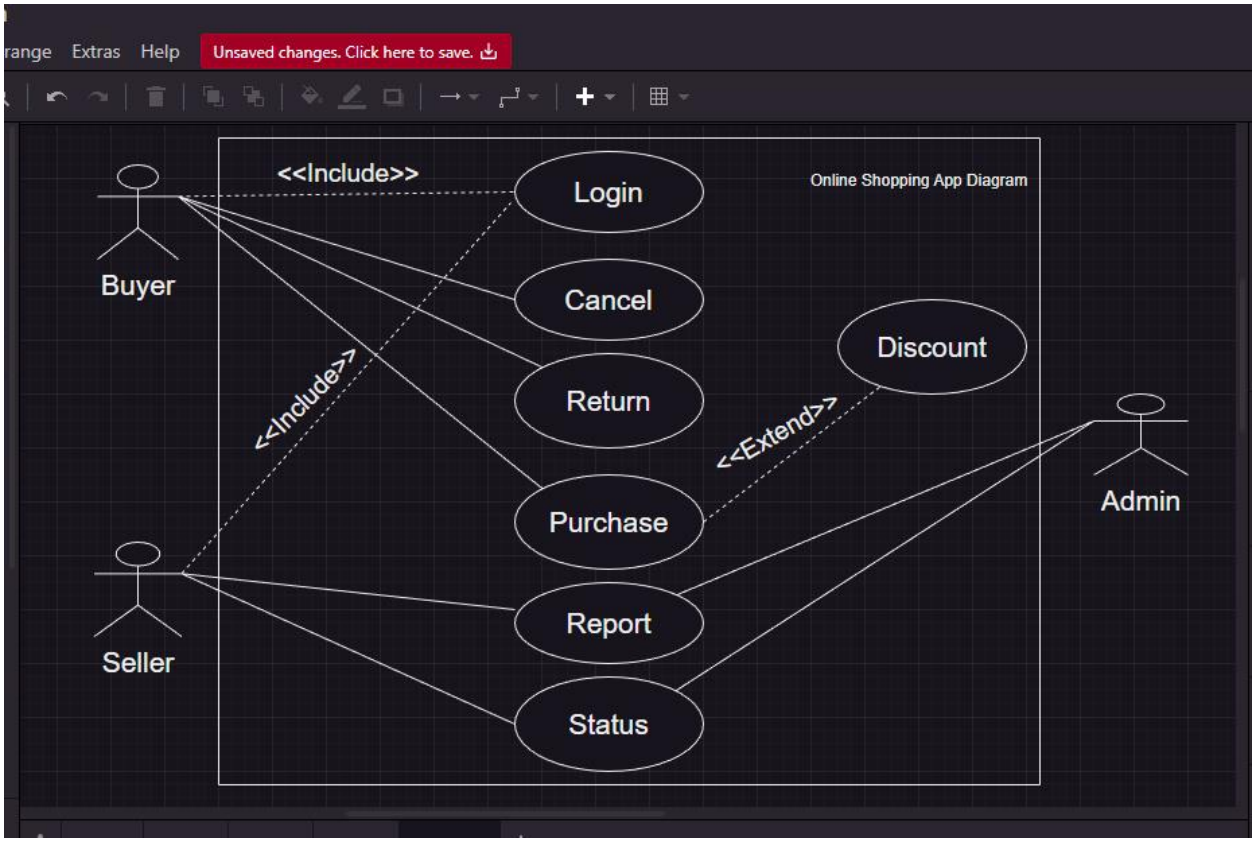
-Horizontally shaped ovals that represent the different uses that a user might have.

Two Types of Relationship

1.<Include> Implicit Function.



2.<Extend> Explicit Function (Optional).



- **use – case on bil payment on paytm.**