Module - 1 (Fundamental)

1. what is SDLC
Ans:
SDLC is a structure imposed on the development of a software product that defines the process for planning, implementation, testing, documentation, deployment, and ongoing maintenance and support. There are a number of different development models.

- A Software Development Life Cycle is essentially a series of steps, or phases, that provide a model for the development and lifecycle management of an application or piece of software.

2. What is Software testing
Ans :
Testing is the process of evaluating a system or its component(s) with the intent to find that whether it satisfies the specified requirements or not.

- 'The process consisting of all life cycle activities, both static and dynamic, concerned with planning, preparation and evaluation of software products and related work products to determine that they satisfy specified requirements, to demonstrate that they are fit for purpose and to detect defects.

3. What is agile methodologies

Ans : Agile model believes that every project needs to be handled differently and the existing methods need to be tailored to best suit the project requirements.
In agile the tasks are divided to time boxes (small frames) to deliver specific features for a release.

- Agile thought process had started early in the software development and started becoming popular with time due to its flexibility and adaptability.

4. What is srs
Ans:
A software requirements specification (SRS) is a complete description of the behavior of the system to be developed.

- It includes a set of use cases that describe all of the interactions that the users will have with the software.

- Recommended approaches for the specification of software requirements are described by IEEE 830-1998.

5. What is oops
Ans:
It is a software development programming model which will have it unique behaviour and attributes.

- Identifying objects and assigning responsibilities to these objects.

- Objects communicate to other objects by sending messages.

- Messages are received by the methods of an object - An object is like a black box.

- The internal details are hidden.

. 6. Write basic concepts of oops

Ans:
- Object is derived from abstract data type

- Object-oriented programming has a web of interacting objects, each house-keeping its own state.

- Objects of a program interact by sending messages to each other.

7. What is Object
Ans :
It is an instance of a class .

-An object represents an individual, identifiable item, unit, or entity, either real or abstract, with a well-defined role in the problem domain

-An "object" is anything to which a concept applies.

- That is both data and function that operate on data are bundled as a unit called as object.

8. What is Class

Ans: it is a collection of data-members and member.functions which will have its own unique attributes and behaviour.

- When you define a class, you define a blueprint for an object

- A class represents an abstraction of the object and abstracts the properties and behavior of that object.
- An object is a particular instance of a class which has actual existence and there can be many objects (or instances) for a class.

- We do not actually buy these blueprints but the actual objects.

9. What is Encapsulation
Ans:
Encapsulation is the practice of including in an object everything it needs hidden from other objects. The internal state is usually not accessible by other objects.

- Encapsulation in Java is the process of wrapping up of data (properties) and behavior (methods) of an object into a single unit; and the unit here is a Class (or interface).

- Encapsulate in plain English means to enclose or be enclosed in or as if in a capsule. In Java, a class is the capsule (or unit).

10. What is inheritance
Ans:
It is acquiring the properties of parent class into the child class.

- Inheritance means that one class inherits the characteristics of another class. This is also called relationship.

- One of the most useful aspects of object-oriented programming is code reusability. As the name suggests Inheritance is the process of forming a new class from an existing class that is from the existing class called as base class, new class is formed called as derived class.

- This is a very important concept of object-oriented programming since this feature helps to reduce the code size.

- Inheritance describes the relationship between two classes. A class can get some of its characteristics from a parent class and then add unique features of its own.

11. What is polymorphism

Ans: Polymorphism meny having many forms..

- It allows different objects to respond to the same message in different ways, the response specific to the type of the object

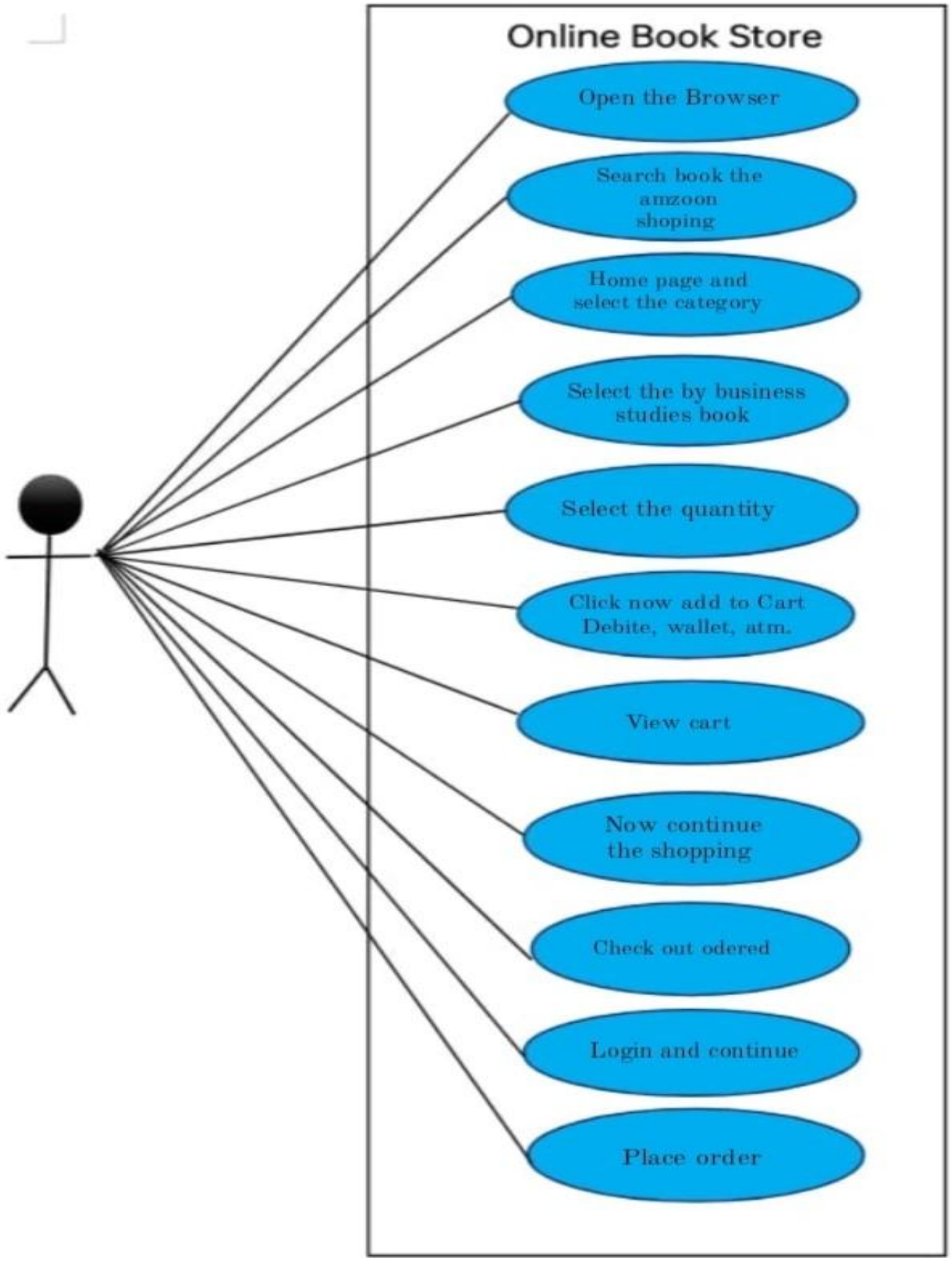
. - The most important aspect of an object is its behaviour (the things it can do).
A behaviour is initiated by sending a message to the object (usually by calling a method).

The ability to change form is known as polymorphism.

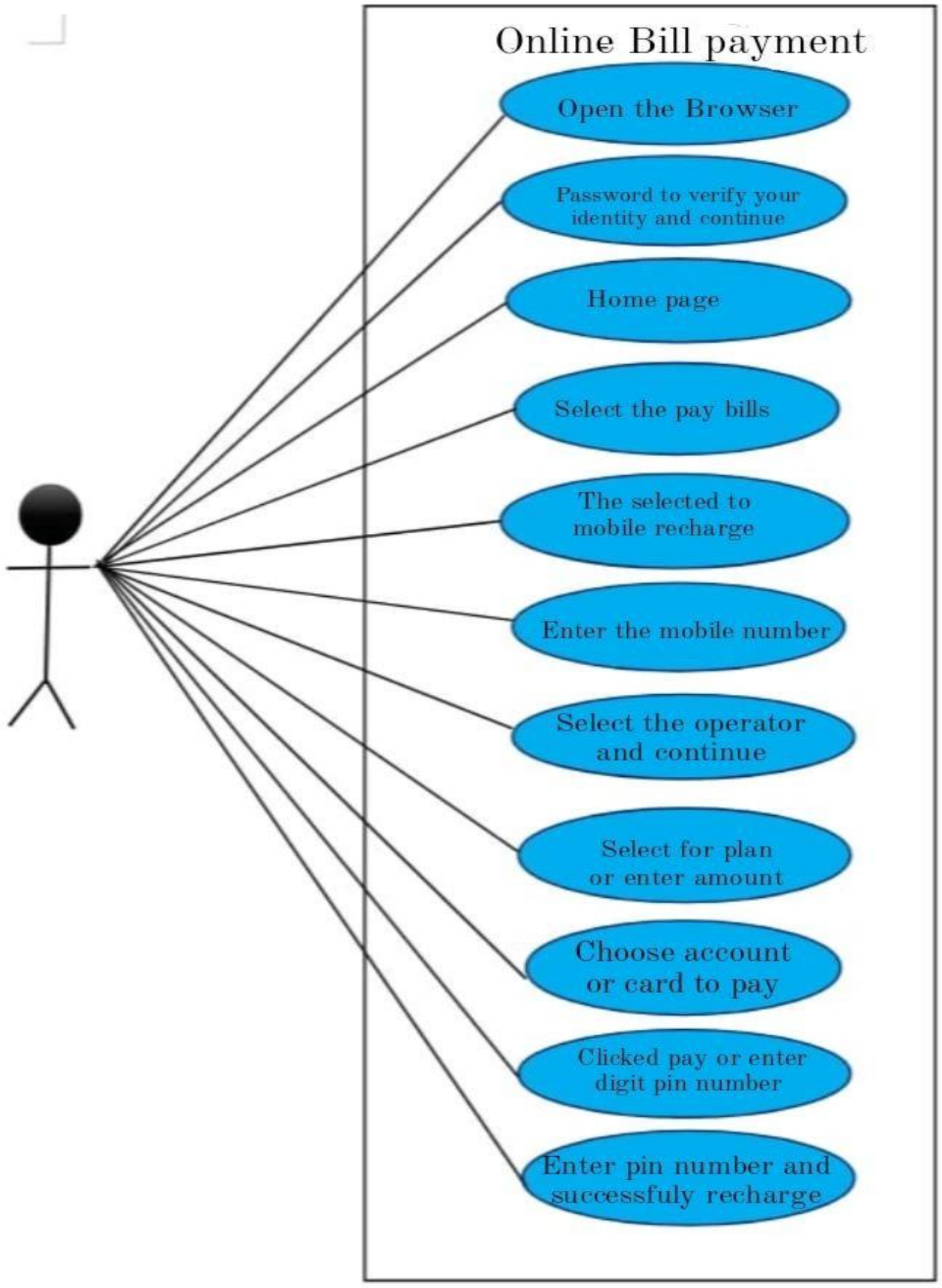
- There is two types of polymorphism in Java:-

Compile time - polymorphism(Overloading)
Runtime polymorphism(Overriding)

12. Draw Usecase on online book shopping
Ans:



13. Draw Usecase on online bill payment system (paytm)
Ans:



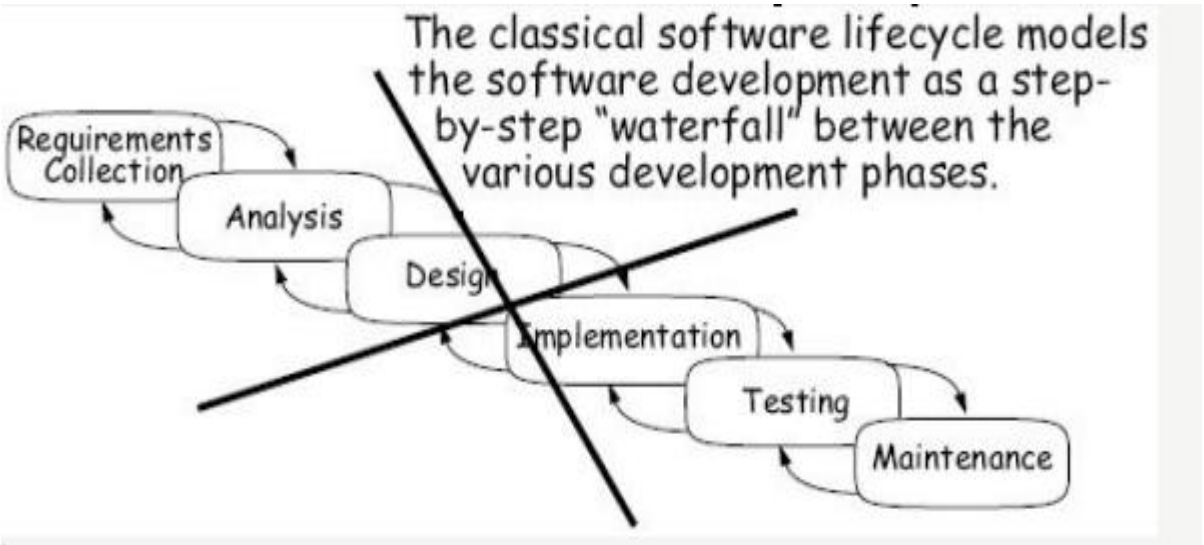
14.Write SDLC phases with basic introduction
Ans:

Requirements Collection/Gathering	Establish Customer Needs
Analysis	Model And Specify the requirements- "What"
Design	Model And Specify a Solution – "Why"
Implementation	Construct a Solution In Software
Testing	Validate the solution against the requirements
Maintenance	Repair defects and adapt the solution to the new requirements

-SDLC is a structure imposed on the development of a software product that defines the process for planning, implementation, testing, documentation, deployment, and ongoing maintenance and support. There are a number of different development models.

- A Software Development Life Cycle is essentially a series of steps, or phases, that provide a model for the development and lifecycle management of an application or piece of software.

15. Explain Phases of the waterfall model
Ans:

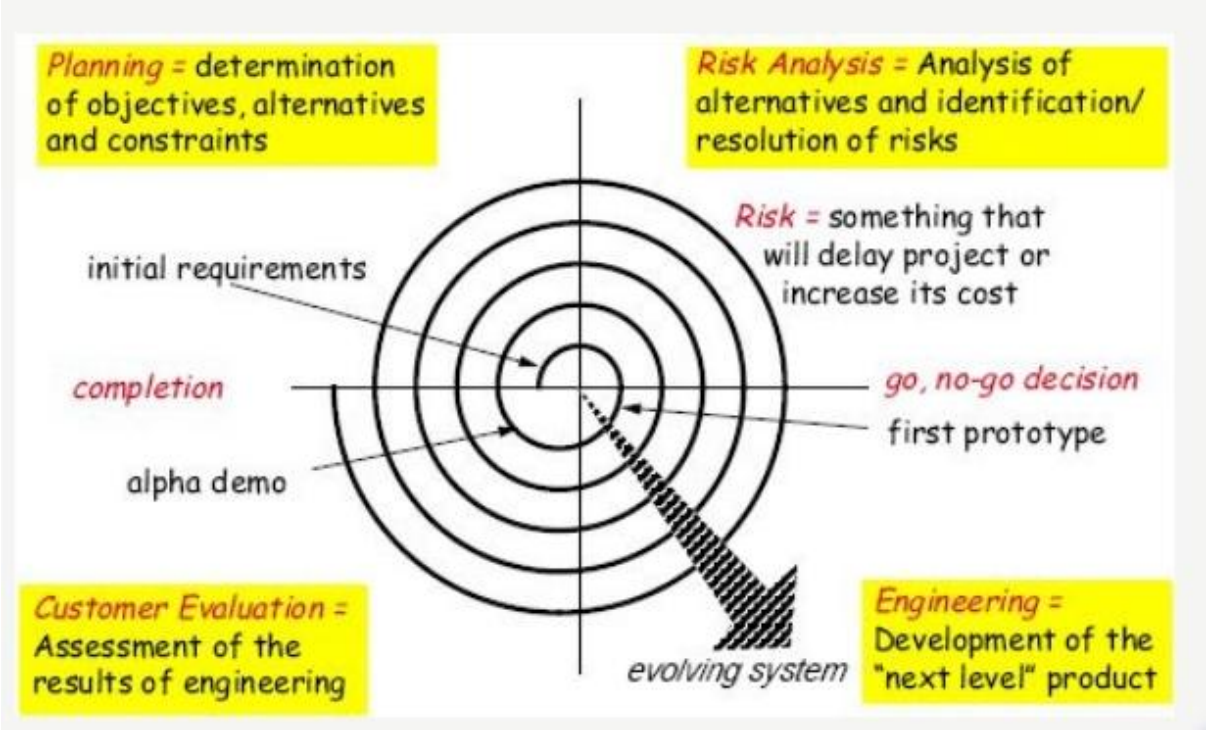


The waterfall is unrealistic for many reasons, especially:

Requirements must be “frozen” to early in the life cycle.

Requirements are validated too late .

16.Write phases of spiral model
Ans:



-Spiral Model is very widely used in the software industry as it is in synch with the natural development process of any product i.e. learning with maturity and also involves minimum risk for the customer as well as the development firms.

Following are the typical uses of Spiral model:

When costs there are a budget constraint and risk evaluation is important.

For medium to high-risk projects.

Long-term project commitment because of potential changes to economic priorities as the requirements change with time.

17. Write agile manifesto principles
Ans:

- In agile there are 4 manifesto

1. Individual and Interactions.
2.Working software.
3.Customer collaboration.
4.Responding to change.

18 .Explain working methodology of agile model and also write pros and cons.
Ans:
Pros:

- Is a very realistic approach to software development Promotes teamwork and cross training.

- Functionality can be developed rapidly and demonstrated.

- Resource requirements are minimum.

-Suitable for fixed or changing requirements Delivers early partial working solutions.

- Good model for environments that change steadily.

Cons :

-Not suitable for handling complex dependencies.

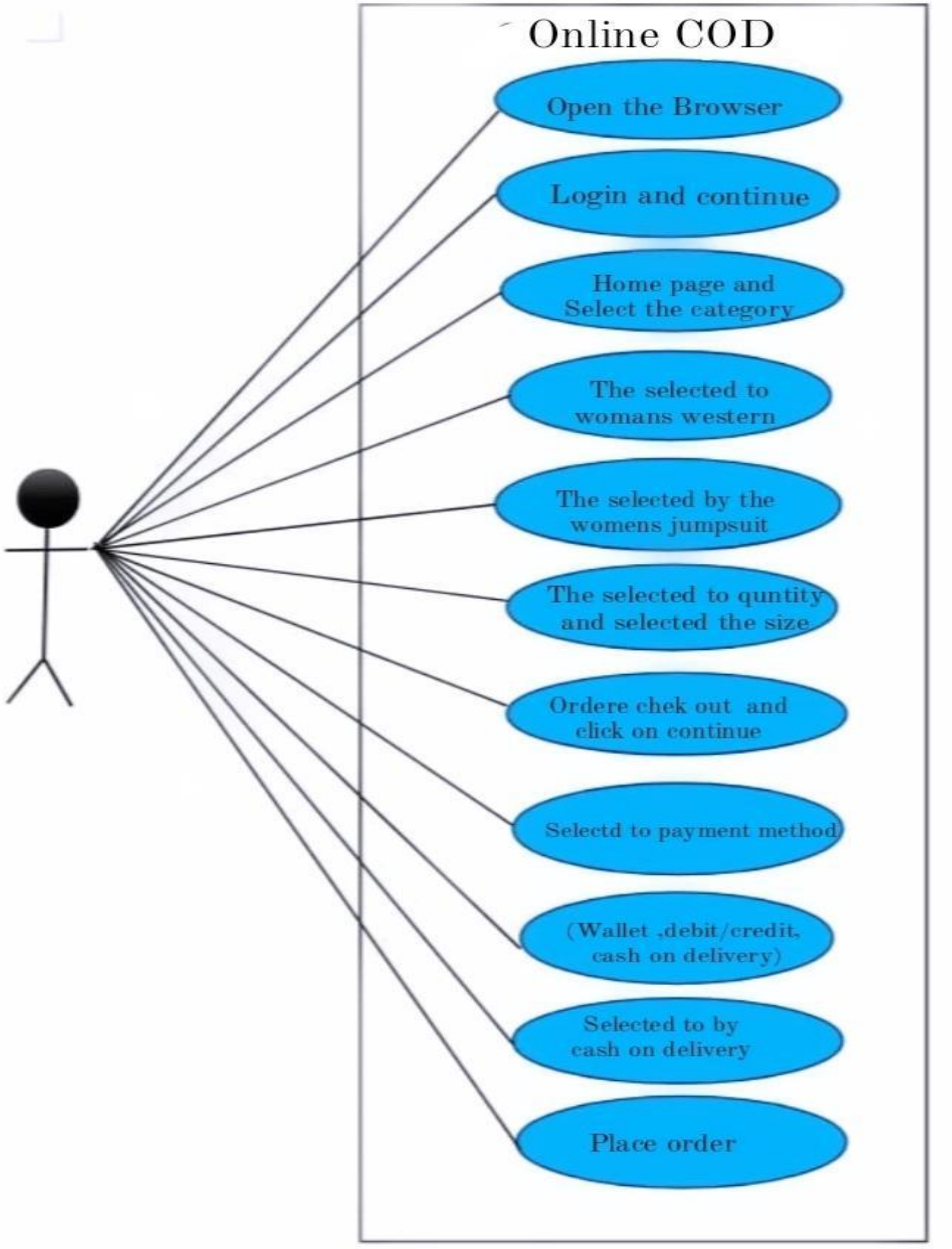
-More risk of sustainability, maintainability and extensibility.

- An overall plan, an agile leader and agile PM practice is a must without which it will not work.

-Strict delivery management dictates the scope, functionality to be delivered, and adjustments to meet the deadlines.

-Depends heavily on customer interaction, so if customer is not clear, team can be driven in the wrong direction.

19. Draw use case on online shopping product using COD.
Ans:



20.Draw use case on online shopping product using payment gateway.
Ans: