Software Testing Assignment

MODULE-1

Que: What is **SDLC** ?

Ans: **SDLC** stands for "Software Development Lifecycle". It is a methodology or step -by-step approach to produce software with high quality , lowest cost in the shortest possible time by defining the phases like Requirement Collections , Software Analysis, Software Design, Coding or Implementation, Testing and Maintenance.

Que: What is **Software Testing**?

Ans: **Software Testing** is a part of Software Development Process.It is a kind of process which is used to check the completeness, correctness and quality of the developed software.

In simple word, It is an activity to detect & identify the defects in the software.

Que: What is **Agile Methodology**?

Ans: **Agile methodology** is a combination of Iterative & Incremental process models with focuse on process adaptibility and customer satisfaction by rapid delivery of working software product.

The four value of Agile Manifesto are :

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a plan.

Que: What is **SRS**?

Ans: **SRS** stands for "Software Requirement Specification". It is a complete description of the behavior of the system to be developed.

Basically, it includes a set of use cases that describe all of the interactions that the users will have with the software.

Que: What is OPPs?

Ans: **OOPs** is a Object oriented programming . It is viewed as a collection of objects.It is used to structure the software program into simple reusable code. The main purpose of OOP is to deal with the real world entity using programming language.

Que: Write the basic concepts of OOPs?

Ans: The basic concepts of OOPs are Object, Class, Encapsulation, Inheritance, Polymorphism and Abstraction.

Que: What is Object?

Ans: An Object is the basic unit of OOPs which is accessed by its properties called data member & member functions (method) . It creates the memory for the class.

(or)

Object is an instant of class that execute the class. It takes up space like others variable in the memory.

Que: What is class?

Ans: Class is a collection of objects. It does not take any space on memory. It is a blueprint or a template to describe the properties and behavior of the objects.

Que: What is Encapsulation?

Ans: Encapsulation is defined as the wrapping up of data under a single unit. It is the mechanism that binds together code and the data it manipulates. It hide/include private access at data member & member function.

Que: what is Inheritance?

Ans: Inheritance is a mechanism in which one class (super class) acquires or inherit the properties of another class (sub class). It is very important concept of the OOPs as it helps to reduce the code size.

Examples: a child inherits the traits of his/her parents.

Que: What is Polymorphism?

Ans: The word “Poly” means many and “morphism” means forms i.e many forms. Basically, it is defined as a same object having different behavior.

Que: Write SDLC phases with basic introduction?

Ans: SDLC stands for “Software Development Lifecycle”. It is a methodology or step-by-step approach to produce software with high quality, lowest cost in the shortest possible time by defining the phases like Requirement Collection, Software analysis, Design, Coding or Implementation, Testing and Maintenance.

Phases are:

1.Reqirement Collection/ Gathering

It is the initial phase of the SDLC development process wherein the development team interact or work closely with the customer to determine the customer requirements for the product.

Three types of problem arise at the time of Requirement collection are:

i) **Lack of clarity**: it is hard to write documents that are both precise and easy to read.

ii) **Requirement Confusion**: Functional and Non-functional requirements tend to be intertwined.

iii)**Requirement Amalgamation**: Several different requirements may be expressed together.

2. Software Analysis

The goals you achieve at this stage are identified as the system of function your business needs to develop and implement.

The main purpose of this phase is to analyse the requirement and get the approval from the customer. One achieved this through Software Requirement Specification (SRS) which include all the requirements gathered and developed during the requirement gathering phase.

3. Software Design

In this phase, the software design is created which include the overall architecture of the Software, data structure and interface.

The main purpose of this phase is to transform all the customer requirement into complete detailed system designed specification.

4. Implementation phase

This phase is the longest and one of the critical phases in the software development Lifecycle. The implementation phase deals with the issues of quality, performance, Baseline ,libraries and debugging.

During Implementation phase, the programming language and different frameworks come into use for the actual implementation of the product. The developers must follow predefined coding standards and guidelines as well as complete project modules within the defined deadline.

5. Testing phase

The testing phase is a separate phase which is performed by a different team after the Implementation phase is complete . The main purpose of this phase is to test the Software throughly. The testing team receives the developed software, whereas software tester and Quality Analyst conduct various tests to detect defects. Upon finding any defect the testing team document and reports them to the development team for error removal. The testing team ensures that each component of the software is error free and work as expected.

6. Maintenance phase

Software maintenance is one of the activities in software engineering , and is the process of enhancing and optimizing deployed software as well as fixing defects.

Maintenance is the process of changing a system after it has been deployed.

i) Corrective Maintenance : identifying and repairing defects

ii) Adaptive Maintenance : adapting the existing solution to the new platform.

iii) Perfective Maintenance : implementing the new requirement.

Que: Write Agile Manifesto principles?

Ans: Principle of Agile Manifesto are :

i) The highest priority is to satisfy the customer through early and continuous delivery of valuable software.

ii) The project team welcomes changing requirement, even late in development.

iii) Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shortest timescale.

iv) Business people and developers must work together daily throughout the project.

v) The process builds projects around motivated individuals, giving them the environment and support they need, and trust them to get the job done.

vi) A face-to-face conversation is the most efficient and effective method of conveying information to and within a development team.

vii) Working software is the most important measure of progress.

viii) Agile processes promote sustainable development. The sponsors developers and users should maintain a constant pace indefinitely.

ix) Pay continuous attention to technical excellence and good design enhances agility.

x) A simplicity is essential. This is the art of maximizing the amount of work not done.

xi) Self-organizing teams produce the best architectures, requirements and designs.

xii) At regular intervals, the team reflects on how to become 'more effective and adjusts its behavior accordingly.

Que: Explain the phases of waterfall Model?

Ans: The phases of Waterfall Model are:

i) Requirement Collections/ Gathering: In this phase, the requirements are gathered from client for the development of software product.

ii) Analysis: The analysis phase also gathers business requirements and identifies any potiential risk. The goals you at this stage are identified as the system of functions your business needs or wants to develop and implements.

iii) Design: This involves creating a detailed design document that outlines the software architecture, user interface and system components.

iv) Implementation: The implementation phase involves coding the software based on the design specifications. This phase also includes unit testing to ensure that each components of the software is working as expected.

v) Testing: In this phase, the software is tested to ensure that it meets the requirements and expectations of the clients.

vi) Maintenance: The final phase involves deploying the software and maintaining it by fixing any issues or bugs that may arise.

Que: Write the phases of spiral models?

Ans: The phases of Spiral Models are:

i) Planning: In this phase, the scope of the project is determined, and a plan is created for the next iteration of the spiral.

ii) Risk Analysis: The risk associated with the project are identified and evaluated.

iii) Engineering: The software is developed based on the requirement gathered int the iteration.

iv) Customer Evaluation: The software is evaluated to determine if it meets the customer's requirements and if it is of high quality.

Que: Explain working methodology of Agile Model and also write pros and cons?

Ans: The working methodology Agile Manifesto are :

1.Individuals and interactions over processes and tools.

2.Working software over comprehensive documentation.

3.Customer collaboration over contract negotiation.

4.Responding to change over following a plan.

Pros.of Agile models

i) Rapid delivery

ii) Very realistic approach

iii) Functionality can be developed easily

iv) Resources requirement are minimum

v) Suitable for fixed or changing requirement

vi) Gives flexibility to developers

vii) Promote team work and cross training

viii) Little or no planning required

cons. of Agile Model are:

i) More risk of sustainability, maintainability and extensibility.

ii) Depend heavily on customers requirement

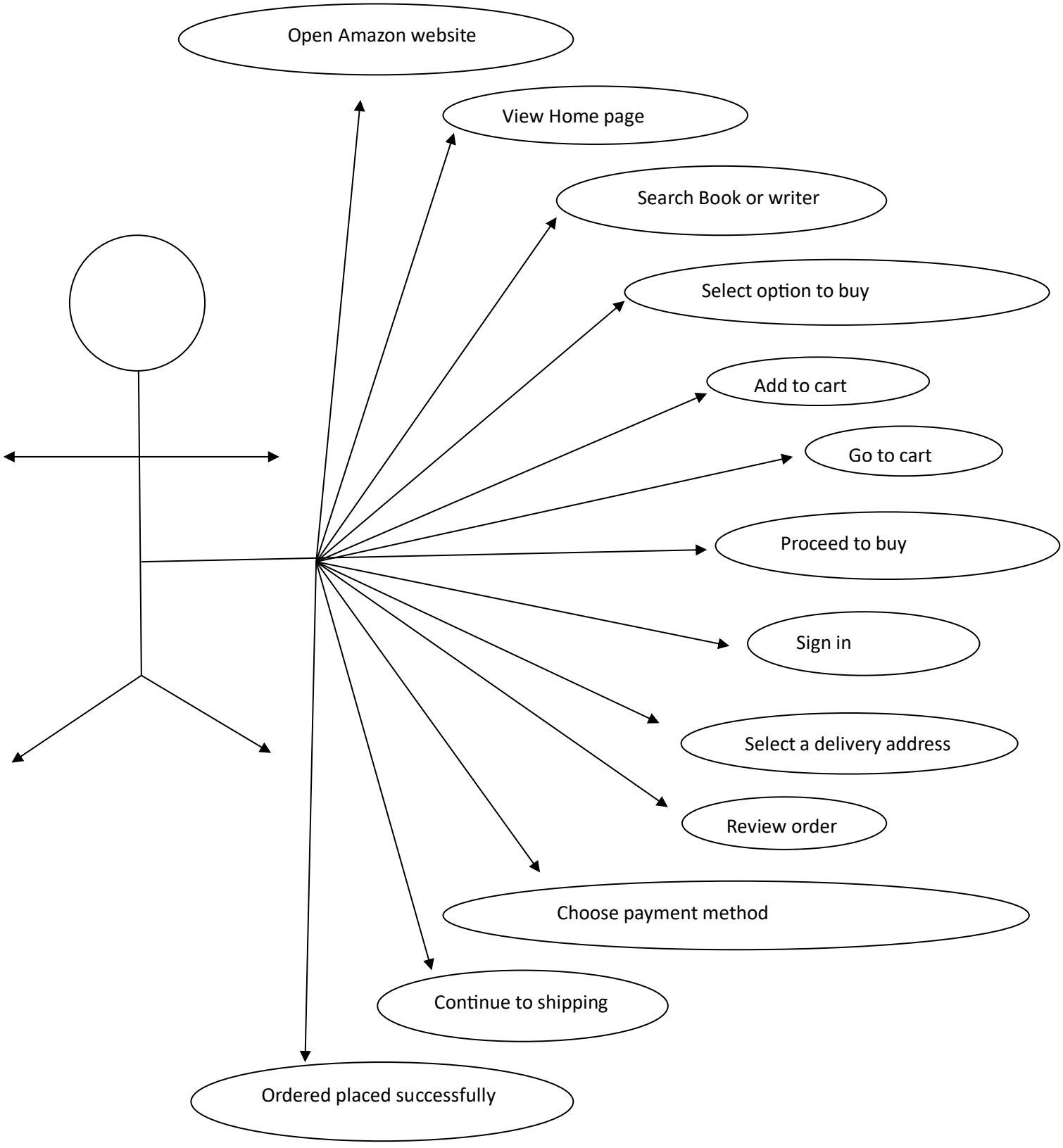
iii) Very high individual dependency

iv) Minimum documentation generated

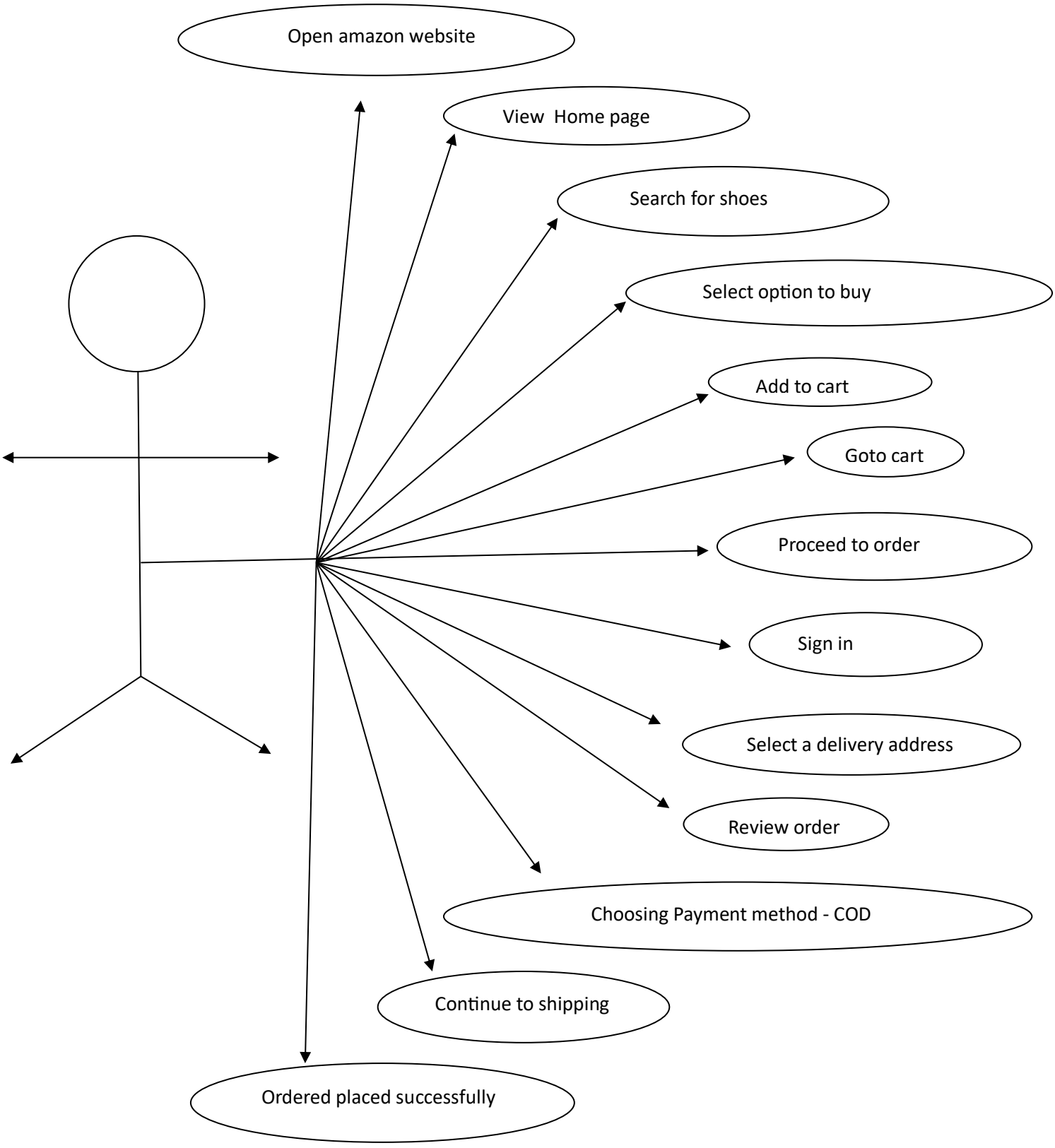
v) Not useful for smaller projects

vi) Not suitable for handling complex dependencies

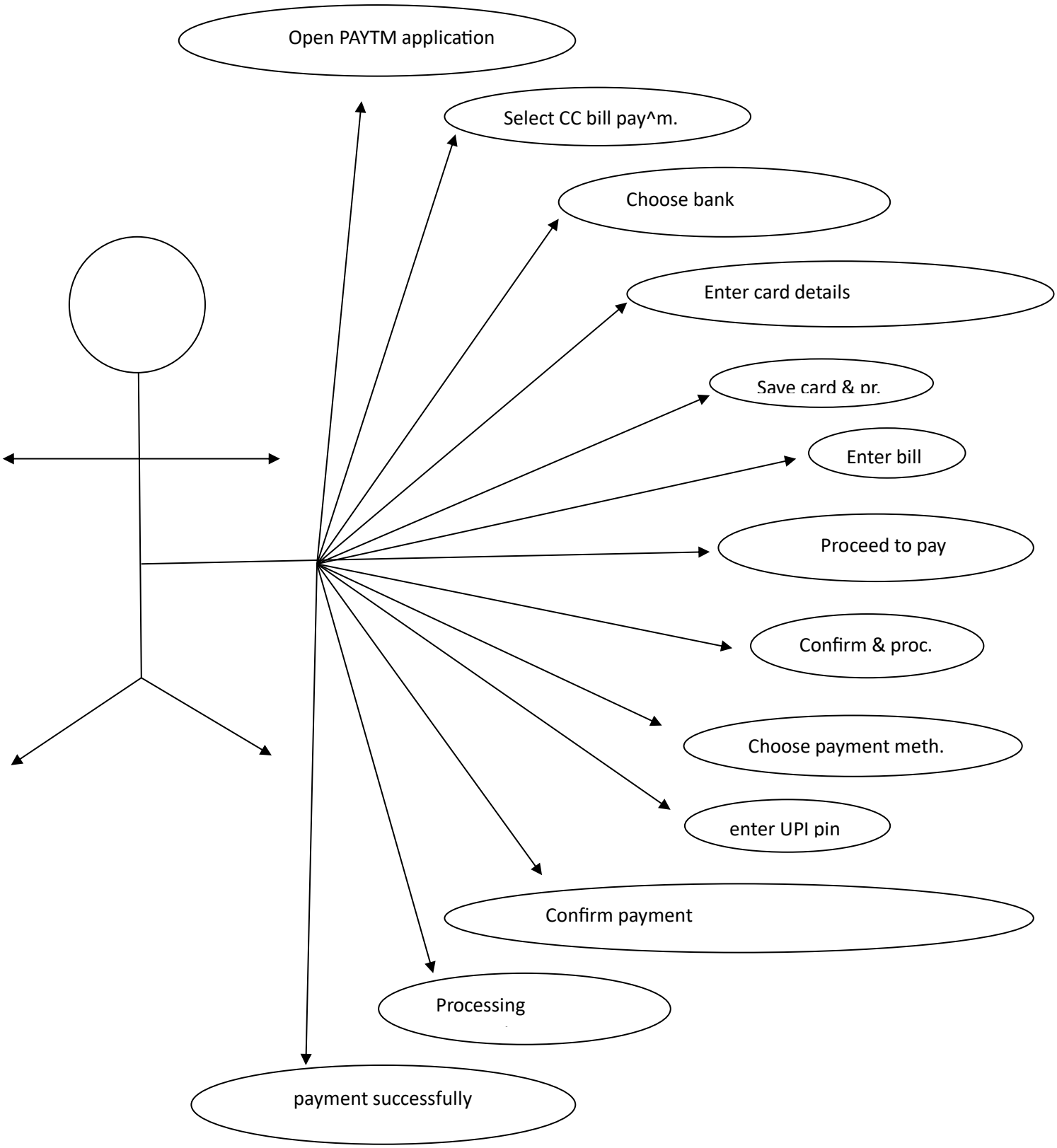
Que: Draw Use case on online book shopping.



Que: Draw use case on online shopping product using COD payment method.



Que: Draw use case on online bill payment (PAYTM).



Que: Draw usecase on online shopping product using payment gateway.