

SOFTWARE TESTING ASSIGNMENT

Module-1(Fundamental)

1. What is SDL ?

- The Software Development Life Cycle (SDLC) is a structured approach to software development, encompassing phases like planning, design, implementation, testing, and maintenance. It ensures systematic development and delivery of high-quality software by organizing tasks and timelines.

2. What is software testing ?

- software testing is identify correctness, completeness, quality of developed computer software.

3. What is agile methodology ?

- Agile methodology is a flexible approach to software development that emphasizes iterative progress, collaboration, and rapid response to change. It focuses on delivering small, functional pieces of the project regularly to improve and adapt based on feedback.

4. What is SRS ?

- A Software Requirements Specification (SRS) is a detailed document that describes what a software system should do and how it should perform. It serves as a blueprint for developers and stakeholders to ensure everyone has a clear understanding of the project's requirements.

5. What is oops ?

- Object-Oriented Programming (OOP) is a programming paradigm that organizes software design around objects, which combine data and functions.
 - Objects
 - Class
 - Abstraction
 - Encapsulation
 - Inheritance
 - Polymorphism
- This are 6 phase of Object-Oriented Programming.

6. Write Basic Concepts of oops ?

- 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.
- The internal details are hidden.
- Objects 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 objects ?

- An objects represents an individual, identifiable item, unit, or entity, either real or abstract with a well-defined role in the problem domain.
- That is both data and function that operate on data are bundled as a unit called as object.
- Object = data + methods

8. What is class ?

- A class is a blueprint or template for creating objects. It defines a set of data and methods that the objects created from the class will have. A class encapsulates data and behaviour into a single unit, allowing for the creation of multiple instances (objects) with the same structure and functionality but with distinct values.

9. What is encapsulation ?

- This concept involves bundling the data (attributes) and methods (functions) that operate on the data into a single unit or class. It hides the internal state of the object from the outside world and only exposes what is necessary through public methods, ensuring better control and protection of data.

10. What is inheritance ?

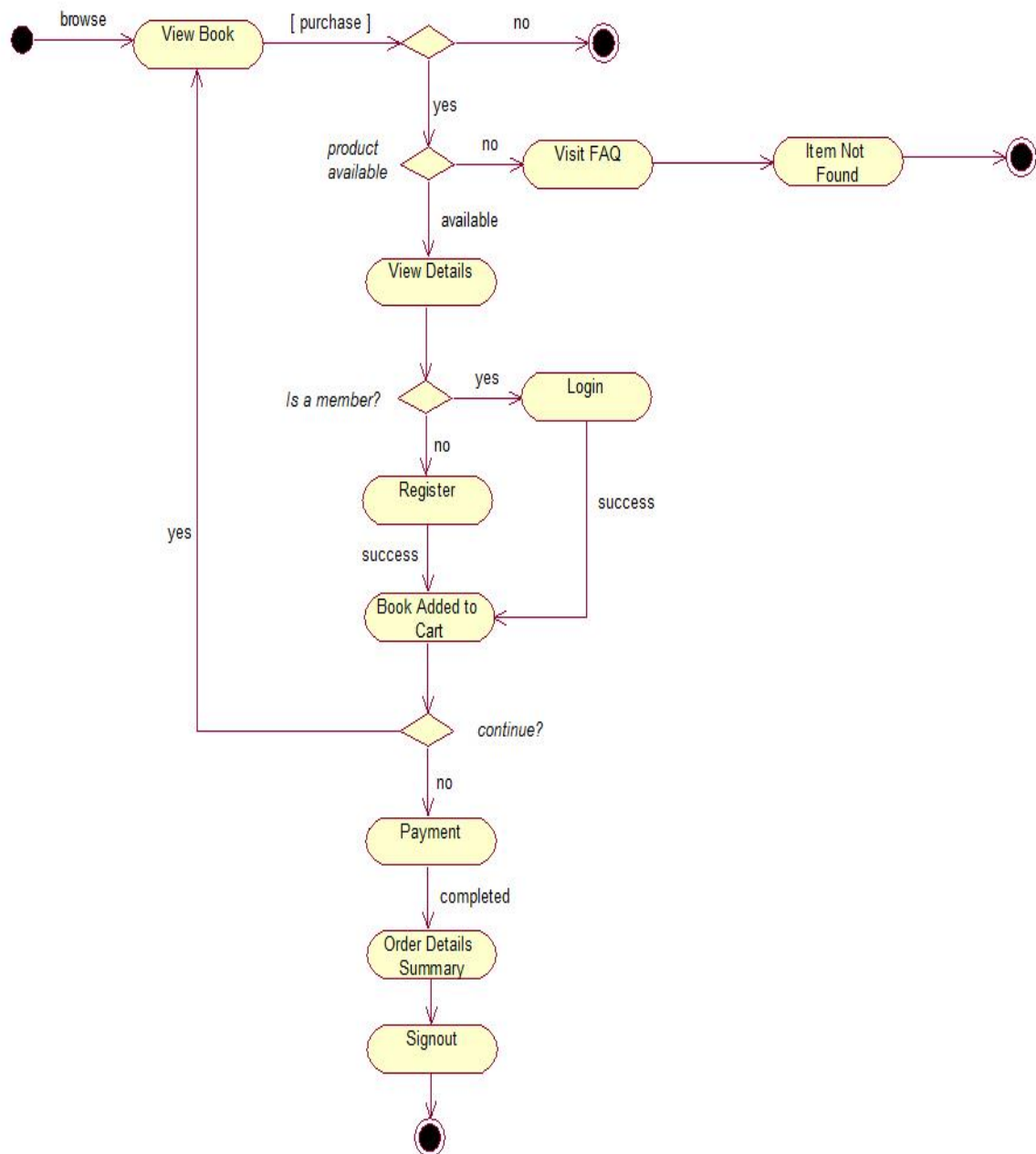
- Inheritance allows a new class to inherit properties and methods from an existing class, known as the parent or base class. This promotes code reuse and establishes a hierarchical relationship between classes, where the new class (child or derived class) can extend or modify behaviours of the base class.

11. What is polymorphism ?

- Polymorphism enables objects to be treated as instances of their parent class rather than their actual class. It allows methods to have the same name but behave differently based on the object's class, providing flexibility in how methods are used and improving code adaptability.

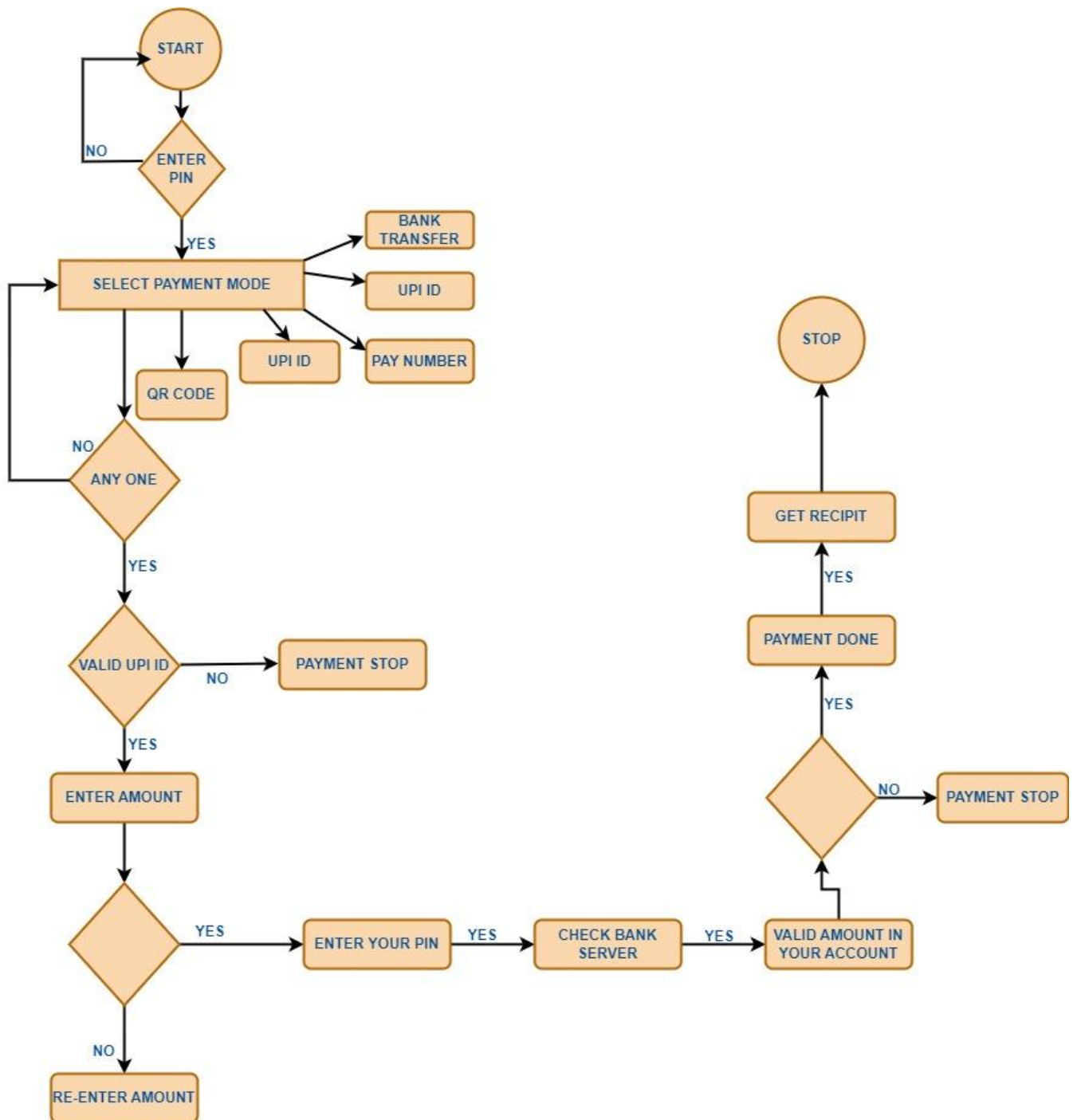
12. Draw Use case on Online book shopping ?

➤ Diagram



13. Draw Use case on online bill payment system (Paytm) ?

➤ Diagram



14. Write SDLC phases with basic introduction ?

- The Software Development Life Cycle phases that guide the development of software from start to finish:
- Requirement Gathering : Define the project scope, objectives, and resources. Establish a timeline and budget for the project.
- Analysis : Gather and analyse requirements from stakeholders to understand what the software needs to do.
- Design : Create detailed designs for the software, including architecture, user interfaces, and data structures.
- Implementation : Write and compile the code based on the design specifications. Develop the actual software.
- Testing : Evaluate the software to identify and fix defects. Ensure it meets the specified requirements and functions correctly.
- Maintenance : Provide ongoing support, fix any issues that arise, and make updates or improvements as needed.

15. Explain Phases of the waterfall model ?

- The Waterfall Model is a linear and sequential approach to software development. It's like a step-by-step guide, where each phase must be completed before moving on to the next phase.
- Requirement Analysis :
Gather all the necessary information and requirements from the client or end-user.
Document what the software should do and any constraints.
- System Design :
 - Plan the overall architecture of the system.
 - Create design documents specifying how the software will work, including hardware and system requirements.
- Implementation :
 - Write the actual code based on the system design documents.
 - Develop the software components and integrate them.
- Integration and Testing :
 - Test the software to ensure it meets the requirements and is free of bugs.
 - Perform different types of testing (unit, system, integration) to validate the software.
- Deployment :
 - Release the software to users for them to use.
 - Ensure the software is installed and running smoothly in the user's environment.
- Maintenance :
 - Fix any issues or bugs that arise after deployment.

- Update the software as needed to adapt to new requirements or changes in the environment.

16. Write phases of spiral model ?

- The Spiral Model is an iterative and risk-driven approach to software development, combining elements of both design and prototyping. It allows for multiple iterations, helping to manage risks and refine the product. Here's a simple breakdown of the phases:
- Planning :
 - Identify objectives, constraints, and requirements for the current iteration.
 - Plan the activities and resources needed for the iteration.
- Risk Analysis :
 - Identify potential risks and uncertainties in the project.
 - Analyse and evaluate these risks to find ways to mitigate them.
- Engineering :
 - Design and develop a prototype or a version of the software.
 - Implement and verify the software features identified in the planning phase.
- Evaluation and Review :
 - Evaluate the progress and quality of the current iteration.
 - Get feedback from stakeholders and make necessary adjustments.
- Each cycle of the spiral model results in the development of a more refined version of the software, incorporating feedback and reducing risks along the way. The process repeats, with each cycle expanding on the previous one, until the final product is complete. This iterative approach allows for flexibility and adaptation to changing requirements.

17. Explain working methodology of agile model and also write pros & cons.

➤ PROS

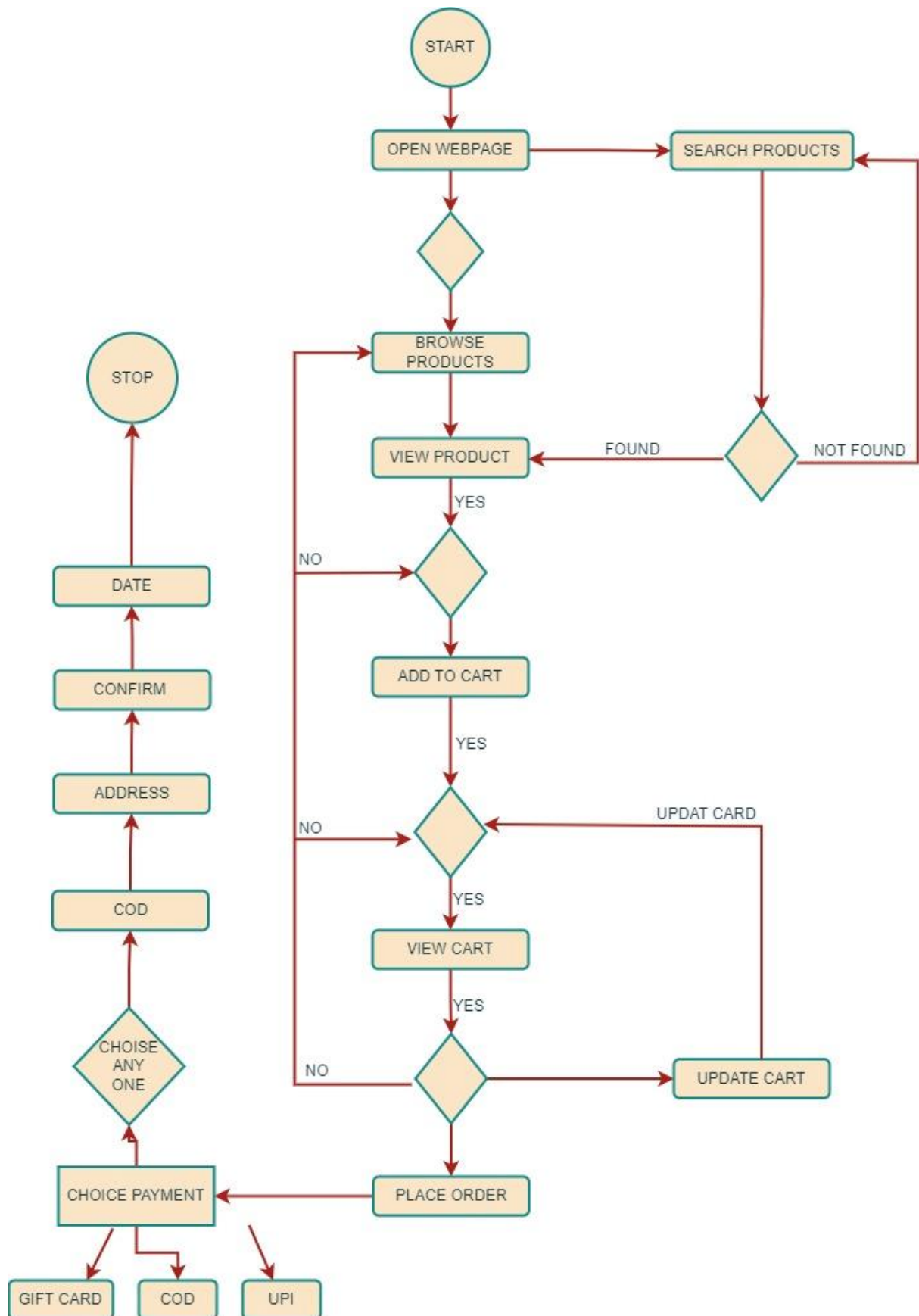
- Is a very realistic approach to software development Promotes teamwork and cross training.
- Functionality can be developed rapidly and demonstrated.
- Resource requirements are minimum.
- Suitable for fixed or changing requirements Delivers early partial working solutions.
- Good model for environments 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.

18. Draw use case on Online shopping product using COD.

➤ Diagram



19. Draw use case on Online shopping using payment gateway.

➤ Diagram

