Moduel – 1

1. What is SDLC ?

- A software development life cycle is essentially a series of steps or phases that provide a model for the development & life cycle management of an application of software.

2. What is software testing ?

- Software testing is aprocess of executing a program or application with thw intent of finding the software bugs.

3. What is agile methodology ?

- The agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, teams cycle through a process of planning, executing, & evaluating.

4. What is SRS ?

- A software requirements of specification is a complete description of the behavior of the system to be developed.

5. What is oops ?

- Object-oriented programming is a computer programming model that organizes software design around data, or objects, rather than functions & logic. An object can be defined as a data field that has unique attributes & behavior.

6. Write a basic concepts of oops ?

- (i) Object
  (ii) Class
  (iii) Encapsulation
  (iv) Inheritance
  (v) Polymorphism
    (a) Overriding
    (b) Overloading
  (vi) Abstraction

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

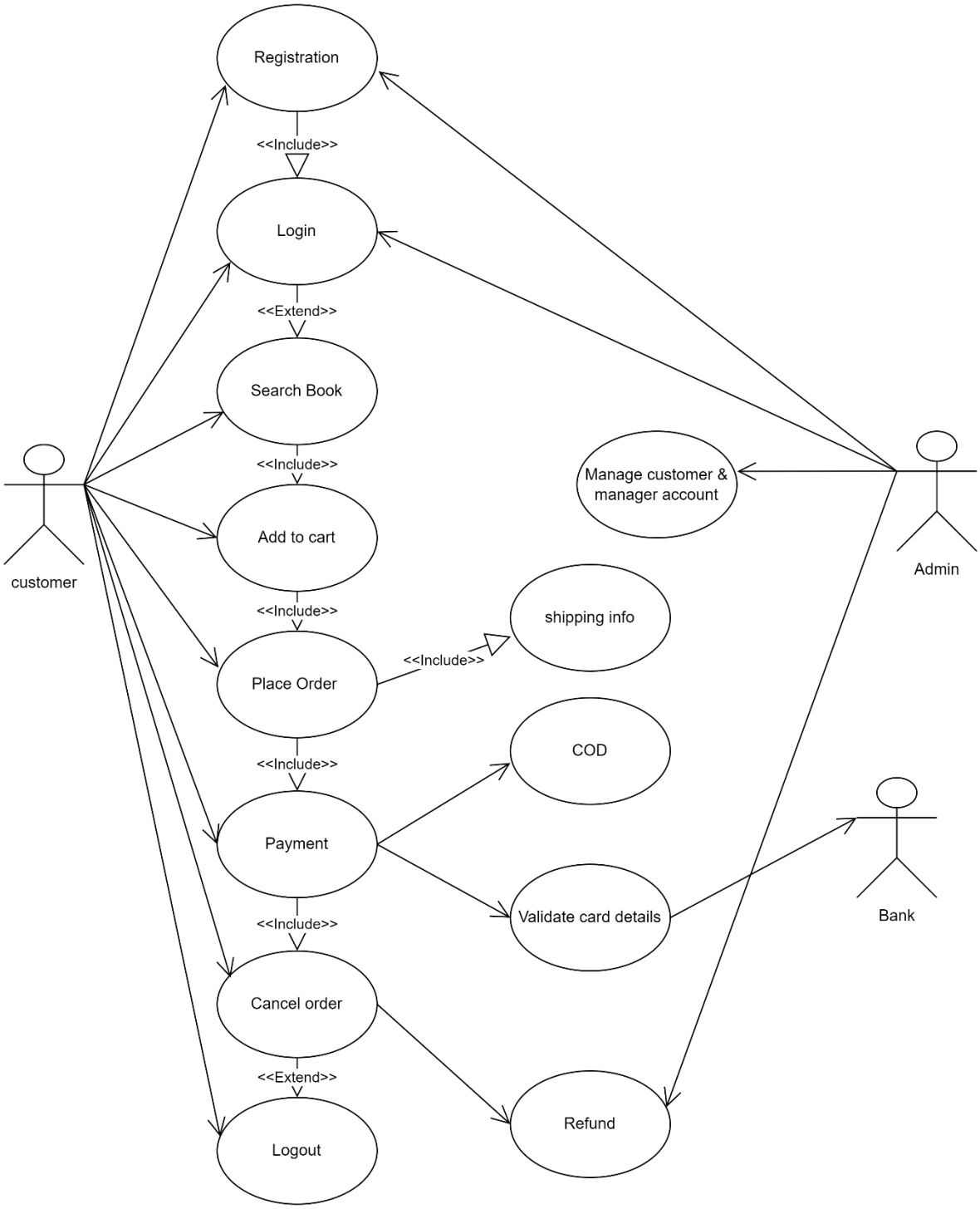
8. What is class ?
- A class is blueprint of an object which describes/ show all the functions & data that provided by an object of a specific class.

9. What is encapsulation ?
- Encapsulation is the process of wrapping up of data or properties & behavior or methods of an object into single unit , & the unit is a class or interface.

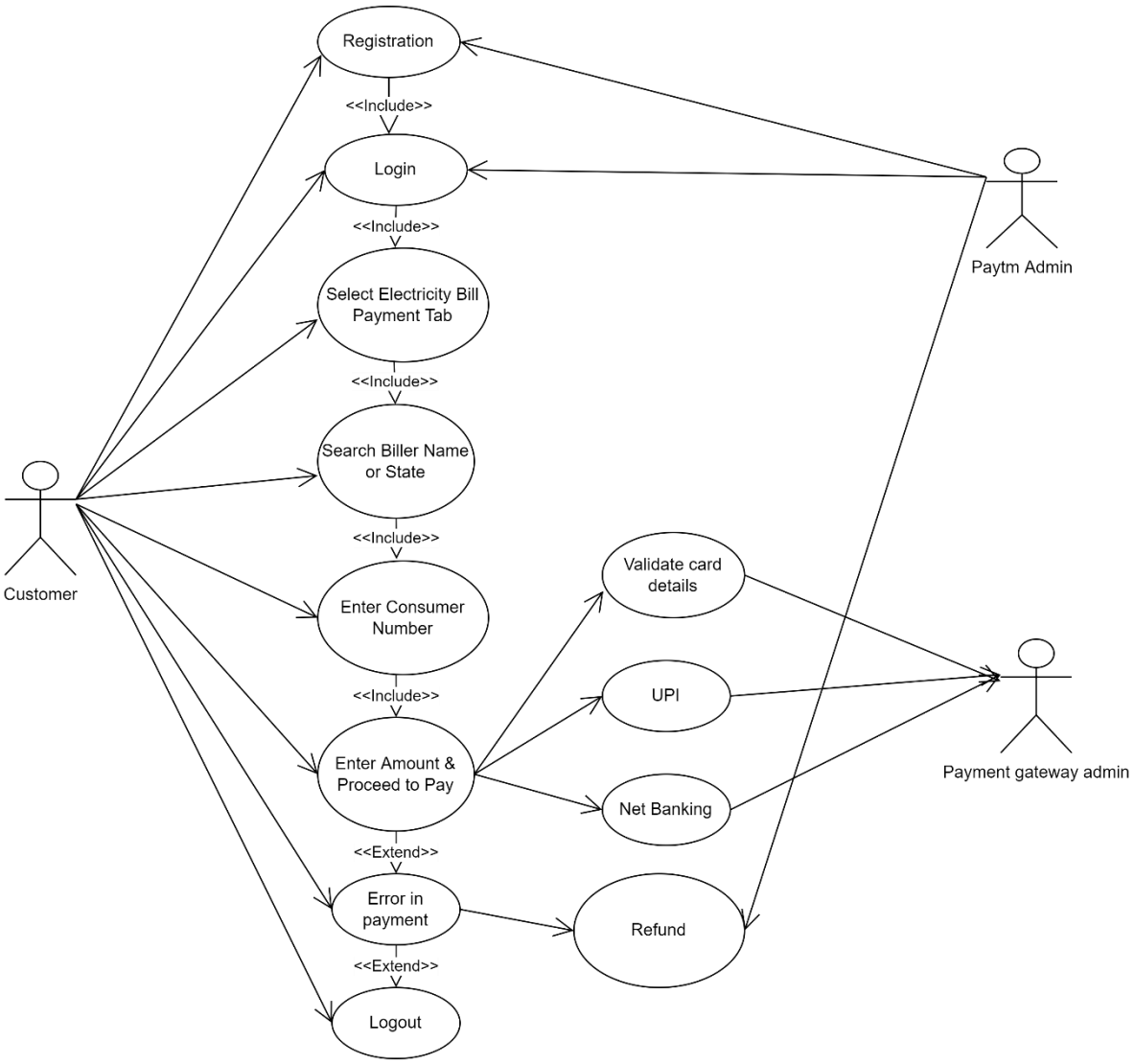
10. What is inheritance ?
- One class inherits the characteristics of another class is known as inheritance. It is also called a “is a” relationship.

11. What is polymorphism ?
- Poly refers to many. It is a single function or an operator functioning in many ways different upon the usage is called polymorphism.

12. Draw use-case on Online book shopping ?



13. Draw use-case on online bill payment system (paytm) ?



14. Write SDLC phases with basic introduction ?

- A software development life cycle is essentially a series of steps or phases that provide a model for the development & life cycle management of an application of software. There are six phases in SDLC.

  (i). Requirements collection gathering -- > Establish customers needs

  (ii). Analysis -- > Model & specify the requirements – “What”

  (iii). Design -- > Model & specify a solution – “Why”

  (iv). Implementation -- > Construct the solution in software

  (v). Testing -- > Validate the solution against the requirements

  (vi). Repair defects & adopt the solution to the new requirements

(i). Requirements collection gathering :-

- Gathering information about the software requirements from stakeholders, such as customers, end-users, & business analysts.

- Three types of problem can arise :-

    (a). Lack of clarity

    (b). Requirements confusion

    (c). Requirements amalgamation

- Types of requirements :-

    (a). Functional requirements

    (b). Non-Functional requirements

(ii). Analysis phase :-

- The analysis phase defines the requirements of the system, independent of how these requirements will be accomplished.
- This phase defines the problem that the customer is trying to solve.
- Ideally, this document states in a clear & precise fashion what is to be built.
- This analysis represent the “What” phase.
- This phase starts with the requirements document delivered by the requirement phase & maps the requirements into architecture.

(iii). Design phase :-

- Design architecture document
- Implementation plan
- Critical priority analysis
- Performance analysis
- Test plan
- The architecture team also converts the typical scenarios into a test plan.

(iv). Implementation phase :-

- In the implementation phase, the team builds the components either from scratch or by composition.

- Eg :- A component may be narrowly designed for the particular system, or the component may be made more general to satisfy a reusability guideline (a). Implementation code (b). Critical error removal

(v). Testing phase :-

- Simply stated, quality is very important many companies have not learned that quality is important & deliver more claimed functionality But at a lower quality level.
- It is much easier to explain to a customer why there is a missing feature than to explain to a customer why the product lacks quality.
- A customer satisfied with the quality of a product will remain loyal & wait for new functionality in the next version,
- Quality is a distinguishing attribute of a system indicating the degree of excellence.

(vi). Maintenance phase :-

- Maintenance is the process of changing a system after it has been deployed.
- (a). Corrective maintenance :- Identifying & repairing defect
- (b). Adaptive maintenance :- Adapting the existing solution to the new platforms
- (c). Perfective maintenance :- Implementing the new requirements

15. Explain phases of the waterfall model ?

- The classical software life cycle model the software development as a step-by-step “waterfall” between the various development phases

(i). Requirements collection

(ii). Analysis

(iii). Design

(iv). Implementation

(v). Testing

(vi). Maintenance

- The waterfall is unrealistic for many reasons especially :- Requirement must be “frozen” to early in the life cycle. Requirements validated late.

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16. Write a phases of spiral model ?

- In spiral model there are four phases :-
  (a). Planning :- Determination of objectives, alternatives & constraints
  (b). Risk analysis :- Analysis of alternatives & identification/ resolution of risks
  (c). Engineering :- Development of the “next level” product
  (d). Customer evaluation :- Assessment of the results of engineering

17. Write agile manifesto principles ?

- Agile manifesto principles :-

  (a). Customer satisfaction through early & continuous software delivery

  (b). Accommodate changing requirements throughout the development process

  (c). Frequent delivery of working software

  (d). Collaboration between the business stakeholders & developers throughout the project

  (e). Support, trust, & motivate the people involved

  (f). Enable face-to-face interactions

  (g). Working software is the primary measure of progress

  (h). Agile processes to support a consistent development pace

  (i). Attention to technical detail & design enhances agility

  (j). Simplicity

  (k). Self-organizing teams encourage great architectures, requirements, & design

  (l). Regular reflections on how to become more effective

18. Explain working methodology of agile model & also write pros & cons ?

- It is a combination of iterative & incremental model & it's working methodology is given below :-

  (a). It divides the software into small incremental builds are provided in iterations, that means the big projects are divided into small chunks.

  (b). Each iteration last about two to four weeks.

  (c). Each iteration involves all the team members working on simultaneously on areas like planning, requirement analysis, design, coding, unit-testing & acceptance testing.

  (d). At the end of the iteration the working product is displayed to the customer or the important stakeholders & it is released in the market.

  (e). After the release we check for the feedback of the deployed software.

  (f). If any enhancement is needed in the project then it's done & it's re-released.

Pros :-

(a). Frequent delivery

(b). Face to face communication with the customer

(c). Less time

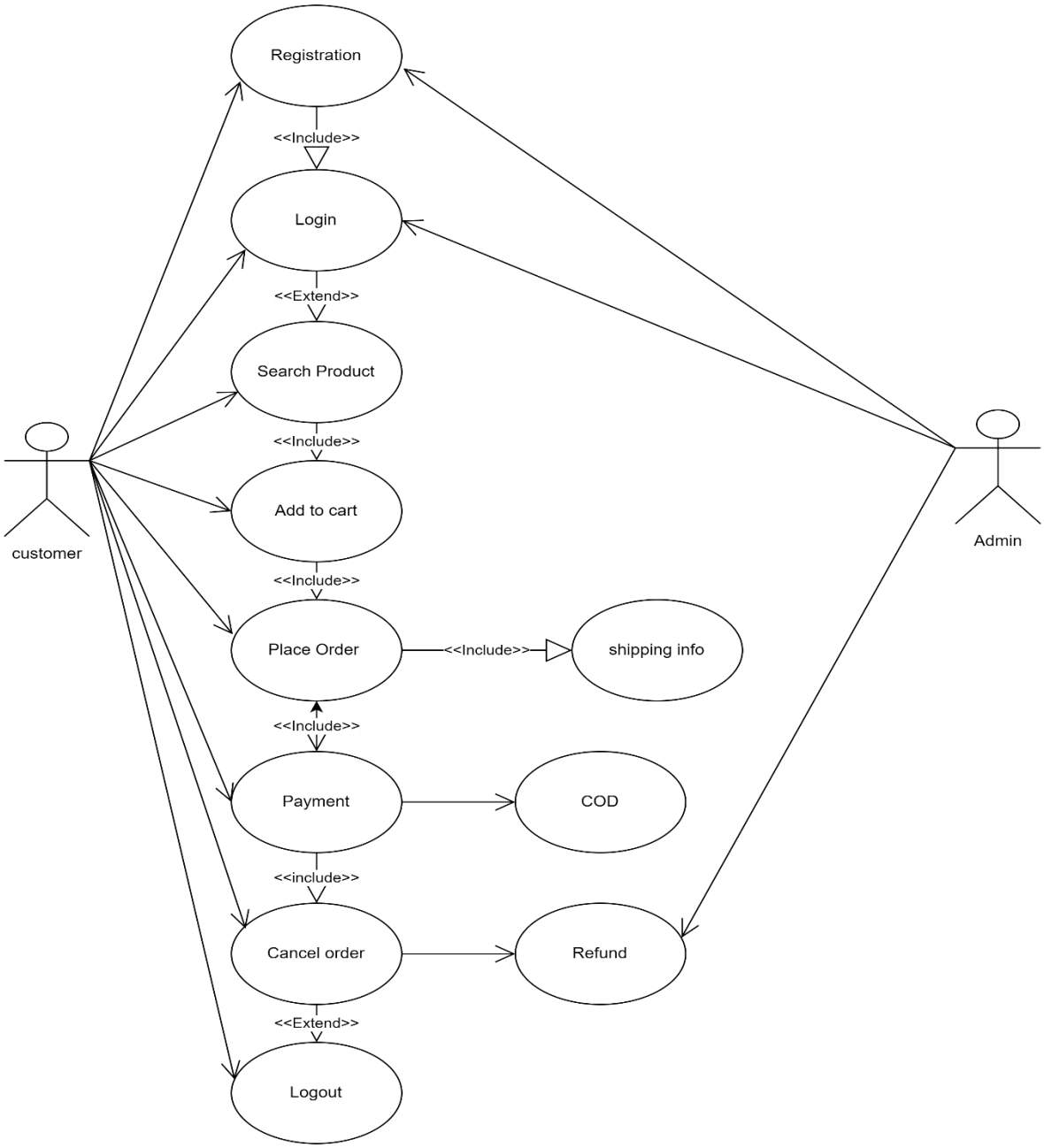
(d). Adaptability

- Cons :-

(a). Less documentation

(b). Maintenance problem

19. Draw use-case on online shopping product using COD ?



20. Draw use-case on online shopping product using payment gateway ?