1. What is SDLC?
- SDLC (Software Development Lifecycle) is a structured process that defines the steps to develop and maintain software.
- There is six phases of SDLC:
    1. Requirement
    2. Analysis
    3. Design
    4. Implementation
    5. Testing
    6. Maintenance

2. What is software testing?
- software testing is a process use for identify completeness, correctness and quality of developed software.

3. What Is agile methodology?
- Agile is an iterative and incremental software development approach that focuses on flexibility, collaboration, customer feedback and rapid delivery.
- teams adapt based on countinous feedback.

4. What is SRS?
- SRS (Software Requirement Specification) is a detailed document that describes the functional and non-functional requirements of software.
- It acts as a bridge between client and development team.

5. What is OOPS?
- OOPS (Object-Oriented Programming System) is a programming paradigm based on the concept of objects.
- It organizes code into reusable units.
- An object is like a black box.
- The internal details are hidden.

6. Basic Concepts of OOPS.
- Object

- Class
- Encapsulation
- Inheritance
- Polymorphim
- Abstraction

7. What is Object?
- Tangible Things
- Roles
- Incidents
- Interactions
- Specifications
- An Object represents an individual, identifiable item, unit and entity, either real or abstract with well defined role in problem domain.

8. What is Class?
- When you define class , you define blueprint for an object.
- This doesn't actually define any data, but it does define what the class name means, that is what an object of the class will consist of and what oprations can be performed on such an object.

9. Whai is encapsulation?
- 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.
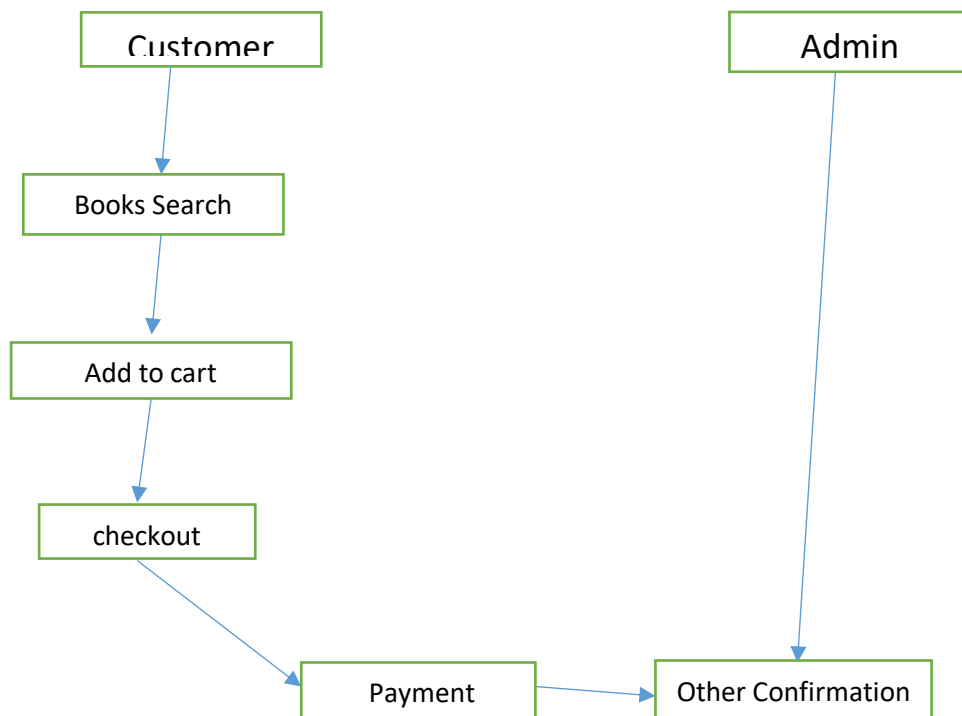
10. What is inheritance?
- Inheritance means that one class inherits the characteristics of another class. This is also called "is a" relationship.
- This is very important concept of OOP since this feature helps to reduce the code size.
- One of the most useful aspects of OOP is code reusability.

11. What is Polymorphim?

- Polymorphim means having many forms.
- It allows different objects to respond to the same message in different ways, the response specific to the type of object.
- Most important aspect of an object is its behavior.
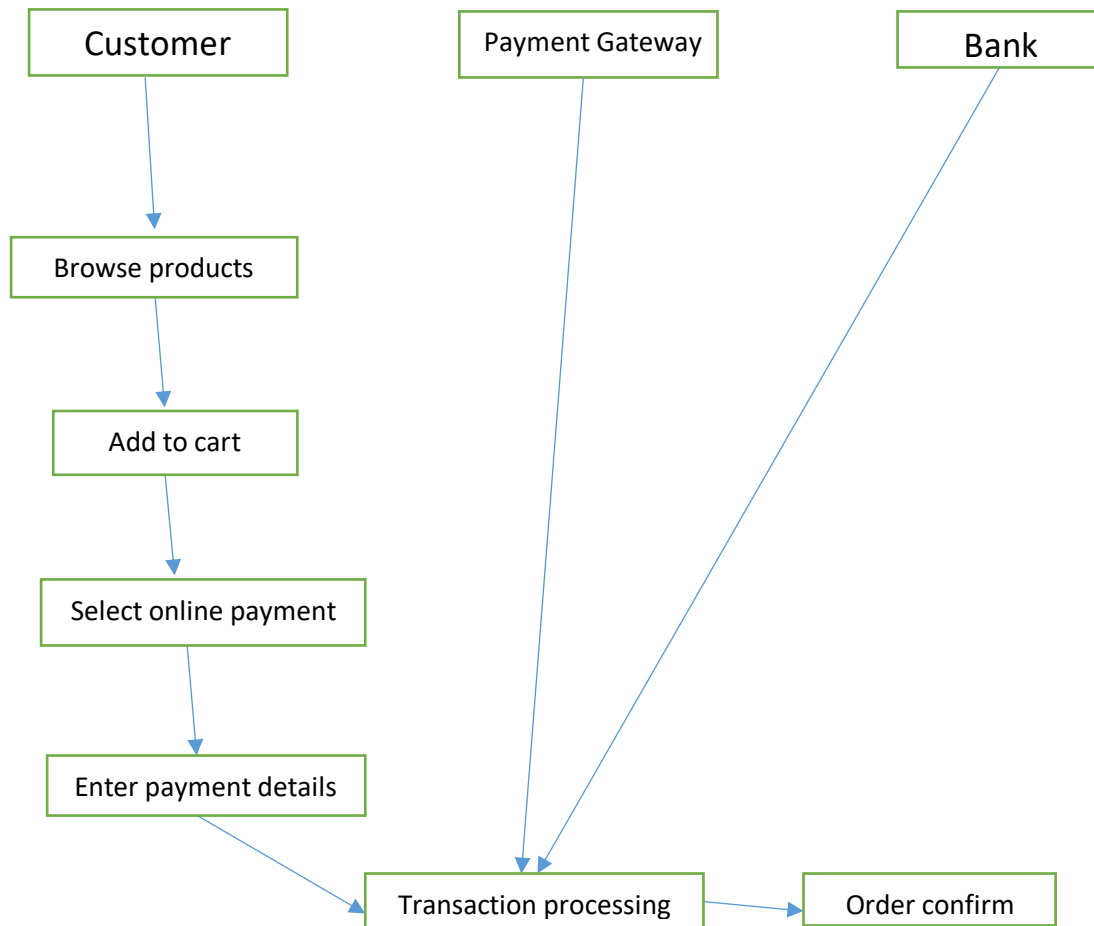- A behavior is initiated by sending a message to the object.

12. Draw usecase on online book shopping.
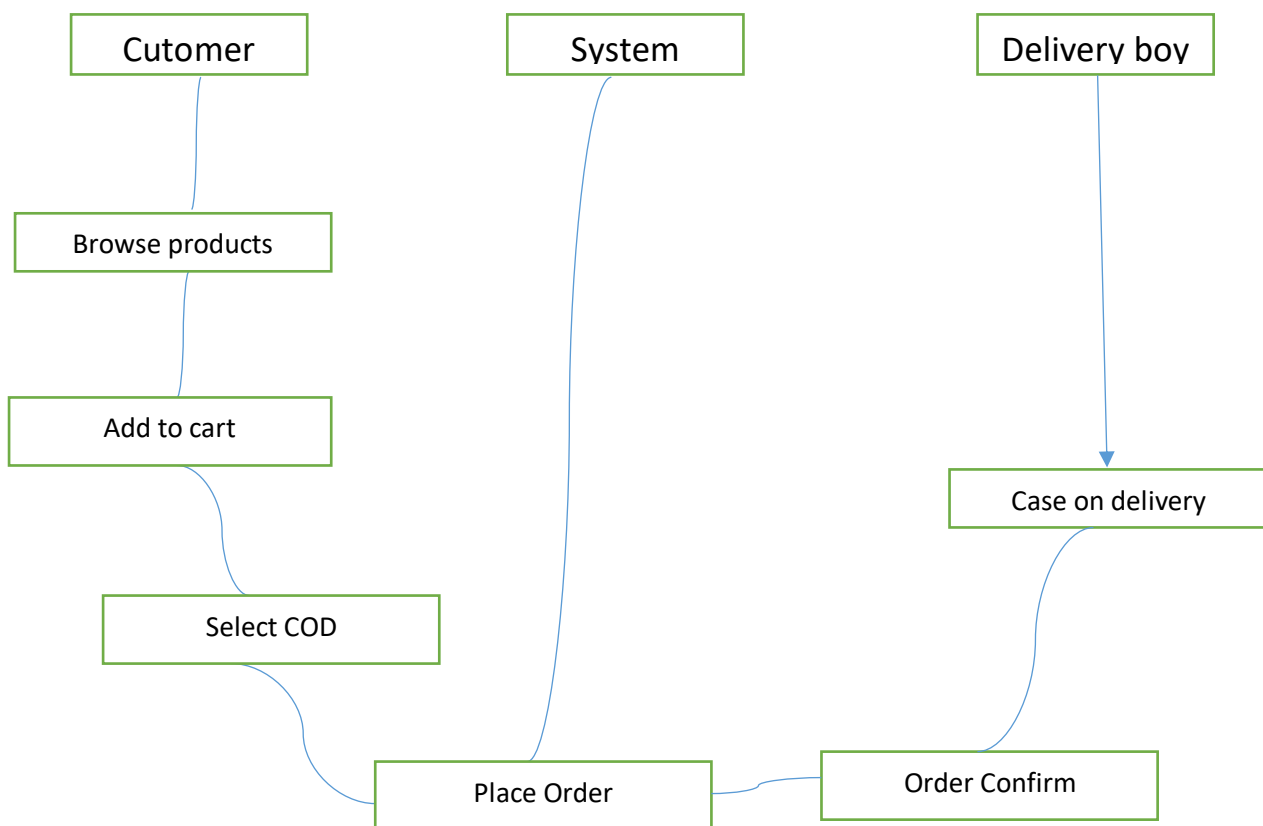
Online Book Shopping

13. Draw usecase on online shopping product using payment gateawy.
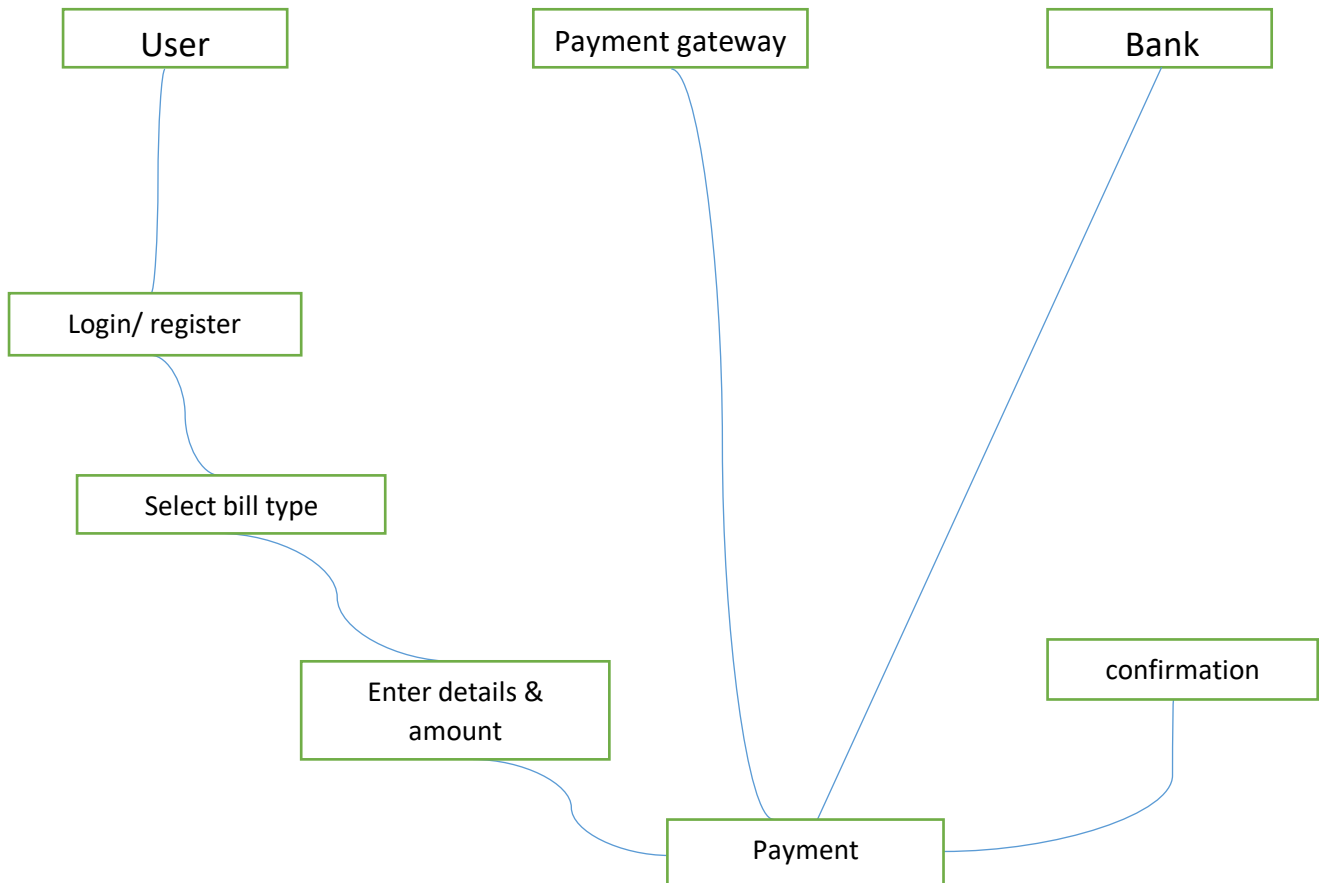
Online shopping product using payment gateway

| Customer | Payment Gateway | Bank |

Browse products

Add to cart

Select online payment

Enter payment details

Transaction processing → Order confirm

14. Draw usecase on online shopping product using COD.

Online Shopping Product using COD

Cutomer	System	Delivery boy

Browse products

Add to cart

Select COD

Case on delivery

Place Order

Order Confirm

15. Draw usecase on online bill payment system (paytm).

online bill payment system

| User | Payment gateway | Bank |

Login/ register

Select bill type

Enter details &
amount

confirmation

Payment

16. Write SDLC phases with basic introduction.
    1. Requirement
    2. Analysis
    3. Design
    4. Implementation
    5. Testing
    6. Maintenance

- 1. Requirement: Establish customer needs

- 2. Analysis: Model and specify the requirements

- 3. Design: Model and specify a solution

- 4. Implementation: Construct a solution in software

- 5. Testing: Validate the solution against the requirements

- 6. Maintenance: Repair defects and adapt solution to new
  requirements

17. Explain phases of the waterfall model.
-   1. Requirement: In this phase, all requirements of the system are
  gatheres from client.
-   there is two type of requirements which is functional requirement
  and non functional requirement.
- Functional requirement is what the system should do and non
  functional requirement is performance.

- 2. Analysis: The collected requirements are studied in depth.
- A system model is created to understand how the software will
   work.

- 3. Design: System design is prepared based on the analysis.
- High level design defines system architecture, modules and data flow.
- Low level design defines detailed logic of each module, database design.

- 4. Implementation: Developers write the code accordinf to the design documents.
- Programming languages, frameworks and tools and chosen.

- 5. Testing: The developed software is tested for bugs, errors and defects.
- Defferent levels of testing: Unit testing, Intergration testing, system testing, user acceptance testing.

- 6. Maintenance: After deployment, the software needs updates, bug fixes and improvements.
- Types: Corrective maintenance, Adaptive maintenance and Perfective maintenance.

18. Write phases of Spiral model.
- 1. Planning
- 2. Risk Analysis
- 3. Evaluation
- 4. Engineering

19. Write agile manifesto principles.
- Customer satisfaction through early delivery
- Welcome changing requirements

- Frequent delivery of working software
- Close cooperation between business & developers
- Motivated individuals
- Face-to Face communication
- Working software as measure of progress

20. Explain working methodology of agile model and also write pros and cons.
- Iterative development, sprints, daily stand-ups, feedback after each iteration.

Pros:

•Flexible to changes

•Faster delivery

•Better customer satisfaction

Cons:

•Requires experienced team

•Less documentation

•Difficult for large, complex projects