Module–1(Fundamental)

Q. What is SDLC ?

Ans : SDLC is 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 and a piece of software.

Q. What is software testing?

Ans : Software testing is a process that used to identify the correctness, completeness and quality of developed computer software.

Q. What is SRS ?

Ans : A Software Requirement Specification is a complete description of the behavior of the system to be developed.

Q. What is OOPS ?

Ans : OOP is Object Oriented Programming focus on object/data rather than process.

- Identifying objects and assigning responsibilities to these objects.

Q. Write Basic Concepts of OOPS

Ans : There are 6 concepts of OOP

1. Object
2. Class
3. Encapsulation
4. Inheritance
5. Polymorphism
6. Abstraction

Q. What is object ?

Ans : An object is a part/instance/example/representative_entity of class.

- An object only relate to a single class.

Ex : Potato is a vegetable. In this sentence potato is an object.

Q. What is class?

Ans : Class is a blueprint/collection for an object.

- Class can have many objects.

Ex : Potato is a vegetable. In this sentence vegetable is a class.

To be continue….

Q. What is encapsulation ?

Ans : Wrapping up of data into a single unit.

Ex : School bag, School bag can keep our books, pens, lunchbox, folders etc..

Q. What is inheritance ?

Ans : Ability to adapt the behavior of parent class to child class.

- Here two or more class are in parent-child relation.

Q. What is polymorphism ?

Ans : Ability to represent in different way.

- The ability to change form is known as polymorphism.

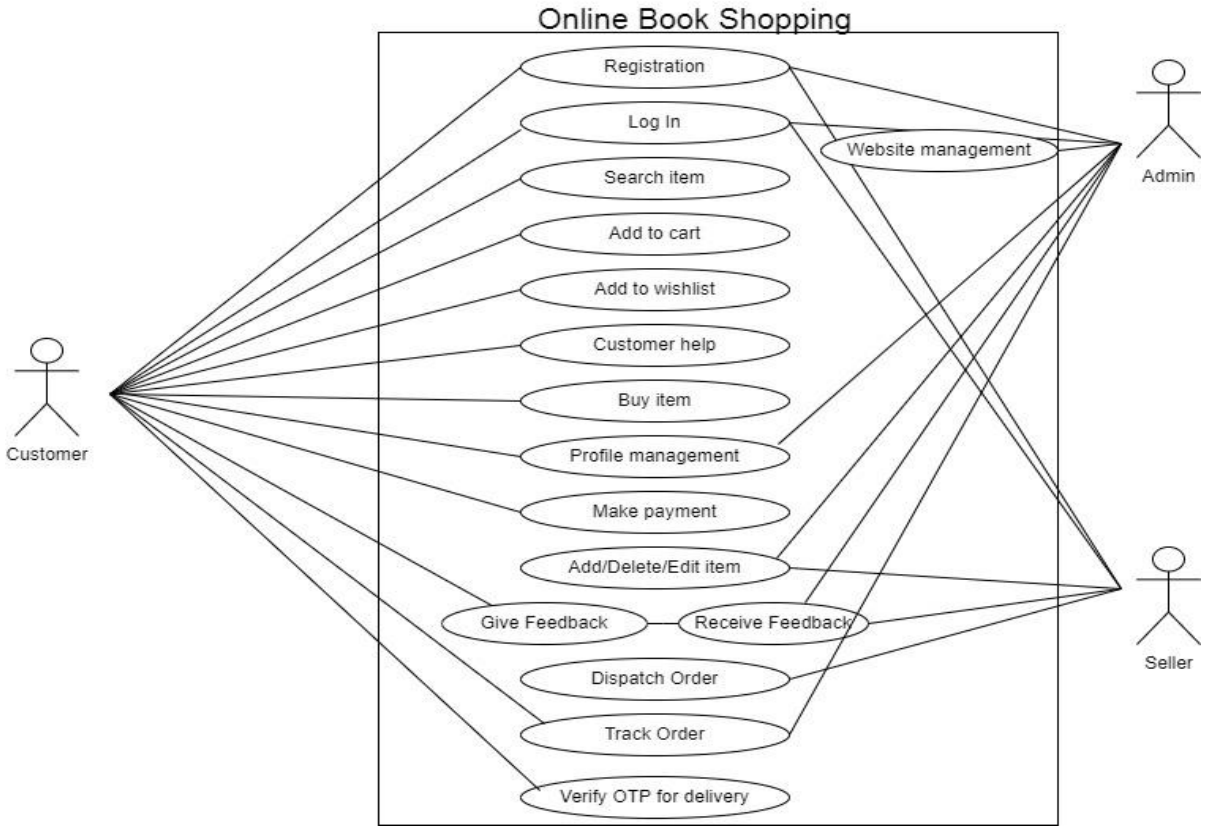
Ex : Like a women at the home she is a mother, a daughter, a wife, at office an employee. The same person have different characters and different behavior as per the characters.

- Types of polymorphism :

1. Compile time (Overloading)
2. Runtime (Overriding)

Q. Draw Usecase on Online book shopping

Ans :



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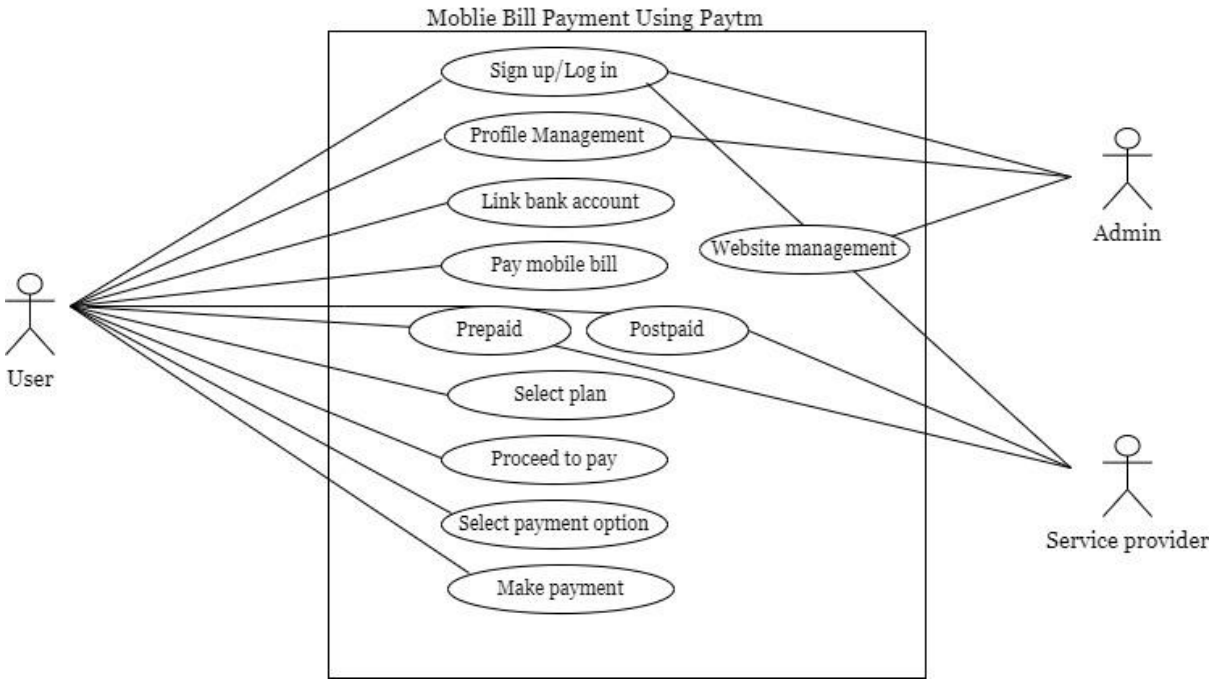
Q. Draw Usecase on Online bill payment system (paytm)

Ans :



Q. Write SDLC phases with basic introduction

Ans : There are 6 types of phases in SDLC.

1. Requirement gathering : Establish customer needs

- Types of requirements : functional and non-functional
- Functional requirements : describe system services or functions.

Ex. Car : In the car there are too many features but in there break,clutch,engine,indicator etc. is functional.

- Overall functional requirements is how to built,what a product must do,what its features and functions are.
- Non-functional requirements : are constraints on the system or the development process.

Ex. Car : Designing,speed of the car,windows etc. is non-functional.

- Overall non-functional requirements describe the general properties of a system, and how it works.

2. Analysis : Model and specify the requirements “what”.

- The analysis phase defines the requirements of the system.

3. Design : Model and specify a solution “why”.

To be continue….

- The Design phase is a stage where software developers define the technical details of the product.

4. Implementation : Construct a solution in software.

- The implementation phase deals with issues of quality, performance, baselines, libraries, and debugging

5. Testing : Validate the solution against the requirements.

- The testing phase is a separate phase which is performed by a different team after the implementation is completed.

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

- Corrective maintenance : Identifying and repairing defects.

- Adaptive maintenance : adapting the existing solution to the new platforms.

- Perfective maintenance : Implementing the new requirements in a spiral lifecycle, everything after the delivery and deployment of the first prototype can be considered “Maintenance”.

Q. Explain Phases of the waterfall model.

Ans : Waterfall model is also called as Classical Software Lifecycle. In waterfall model each phase must be completed before the next phase can begin.

1. Requirements Collection :

- Requirements must be frozen to early in the lifecycle.

- Requirements are validated too late.

- In waterfall model requirements are very well documented, clear and fixed.

2. Analysis :

- After all the requirements gathered we have to analyse what type of requirements is and what is to be built.

3. Design :

- After the analysis phase design phase helps in defining the overall system architecture document.

4. Implementation :

- Given the architecture document from the design phase and the requirement document from the analysis phase, the team should build exactly what has been requested, In waterfall model there is no room for innovation and flexibility.

5. Testing :

- After the implementation phase we must have to do testing phase.

To be continue….

- Each units tested for its functionality which is referred as Unit Testing.
- Once the testing is done the product/software handover to the customer or released into the market.

6. Maintenance :

- Maintenance is the process of changing a system after it has been deployed.
- We have to update the software time to time for maintaining it.
- Updating all analysis, design and user documentation.

Q. Write phases of the spiral model.

Ans : There are 4 phases of spiral model.

1. Planning :

- In the first phase of spiral model gathered all the requirements from customer and create a plan for the next iteration of the spiral.
- Determination of objectives, alternatives, and constraints.

2. Risk Analysis :

- Analysis of alternatives and identification/resolution of risks.
- Something that will delay project or increase its cost.

3. Engineering :

- Development of the next level product.
- In this phase software is developed based on the requirements.

4. Customer Evaluation :

- Assessment of the results of engineering.
- Need evaluation to get clarity, and if any changes in software.

Q. Write agile manifesto principles.

Ans : There are 4 agile manifesto principles.

- Individuals and interactions, Over processes and tools.
- Working software, Over comprehensive documentation.
- Customer collaboration, Over contract negotiation.
- Responding to change, Over following plan.

To be continue….

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

Ans : Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

- Agile methods break the product into small incremental builds.
- These builds are provided in iterations.
- It's not a single method but a collection of best practices that involve constant collaboration.
- Every iteration involves cross functional teams working simultaneously on various areas like planning, requirements analysis, design, coding, unit testing, and acceptance testing.
- At the end of the iteration a working product is displayed to the customer and important stakeholders.

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 and changing requirements.
- Delivers early partial working solutions.
- Good model for environments that change steadily.
- Minimal rules, documentation easily employed.
- Enables concurrent development and delivery within an overall planned context.
- Little or no planning required.
- Easy to manage.
- Gives flexibility to developers.

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.

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• Strict delivery management dictates the scop, functionality to be delivered, and adjustments to meet the deadlines.

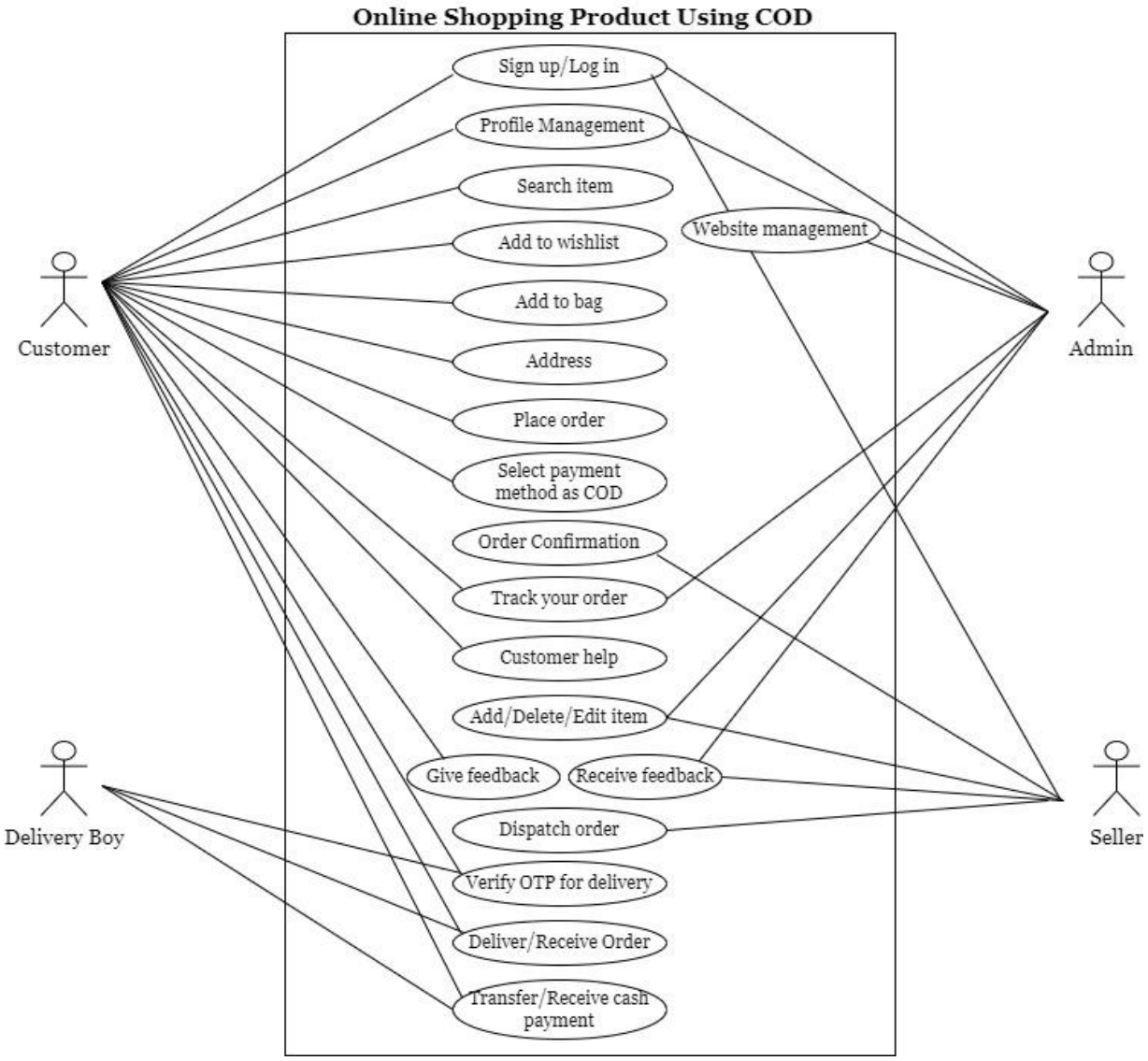
• Depends heavily on customer interaction, so if customer is not clear team can be driven into the wrong direction.

• There is very high individual dependency, since there is minimum documentation generated.

• Transfer of technology to new team members may be quite challenging due to lack of documentation.

Q. Draw usecase on online shopping product using COD.

Ans :



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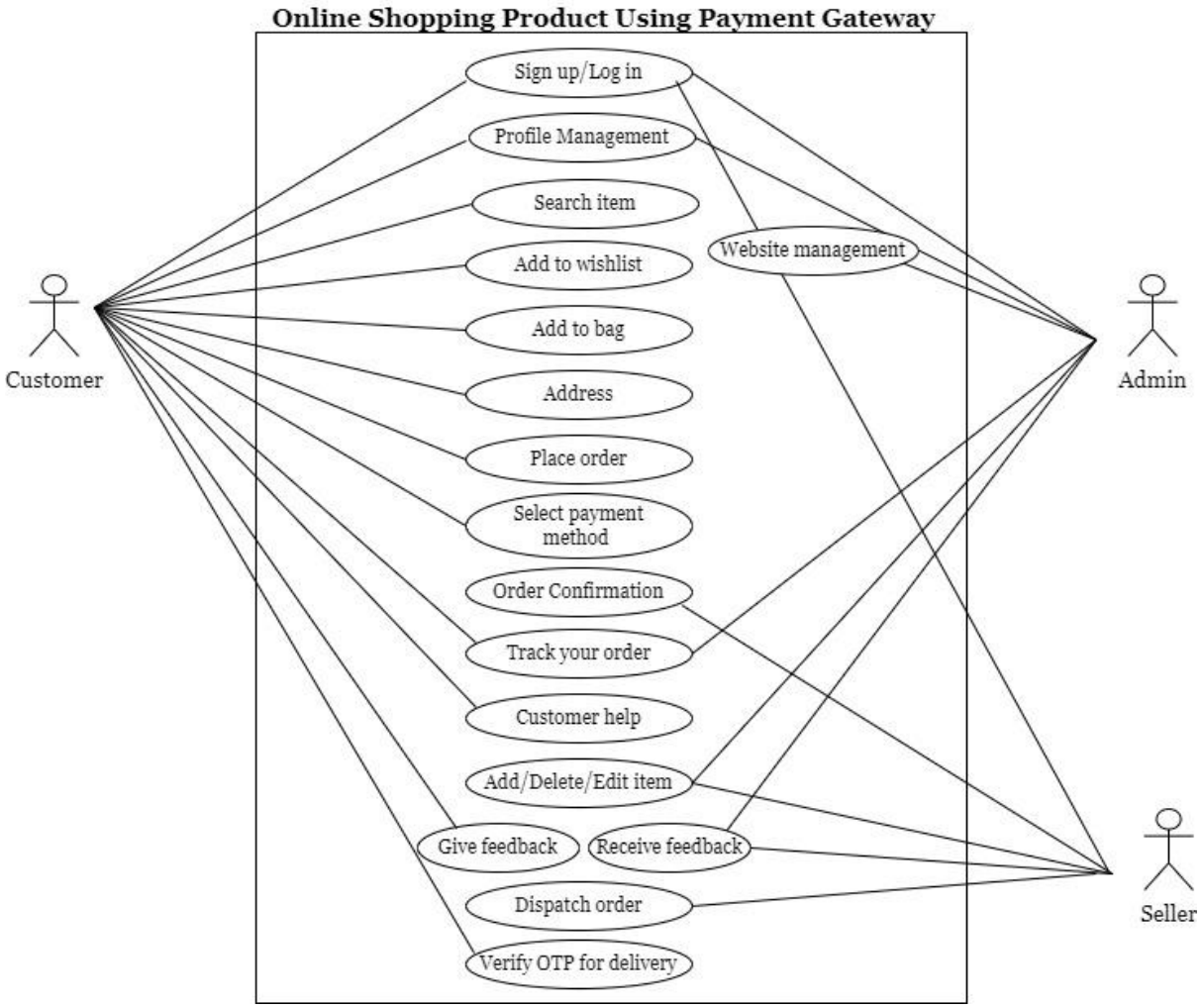
Q. Draw usecase on online shopping product using payment gateway.

Ans :



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