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Software testing assignment

Module-1 (Fundamental)

- **What is SDLC?**
  Ans: A software development life cycle is a series of steps or phases that provide a model for an application or software's development and life cycle management.
- **What is software testing?**
  Ans: Software testing is a process used to identify the completeness, correctness and quality of developed computer software.
- **What is agile methodology?**
  Ans: Agile model believes that every Project should be handled differently and the existing methods need to be tailored to best suit the project requirements. In agile the tasks are divided into time boxes to deliver specific features for a release.
- **What is SRS?**
  Ans: software requirements specification is a complete description of the behaviour of the system to be developed. It describes possible structures, desirable contents, and qualities of software
- **What is OOPS?**
  Ans: OOPs is a way of organizing code by thinking about real-world objects and how they interact. It

makes your code more modular, reusable, and easier to understand.

- **Write basic concepts of OOPs**
  Ans:
  -Objects
  -Class
  -Encapsulation
  -inheritance
  -polymorphism
   --Overriding
   --Overloading
  -abstraction

- **What is Object?**
  Ans: An object is an individual, identifiable item, unit, or entity, whether it is real or abstract. these objects can represent real-world entities like cars, people, or even more abstract concepts.

- **What is class?**
  Ans: Class is a collection of data member and member function. A class is like a blueprint or template for creating objects.

- **What is encapsulation?**
 Ans: Encapsulation is wrapping of data in a single unit.

- **What is inheritance?**
 Ans: Inheritance is deriving the attributes of some other class.

- **What is polymorphism?**

Ans: The ability to change form is known as polymorphism which allows objects of different classes to be treated as objects of common type There are two types of polymorphism

- Method overloading

- Method overriding

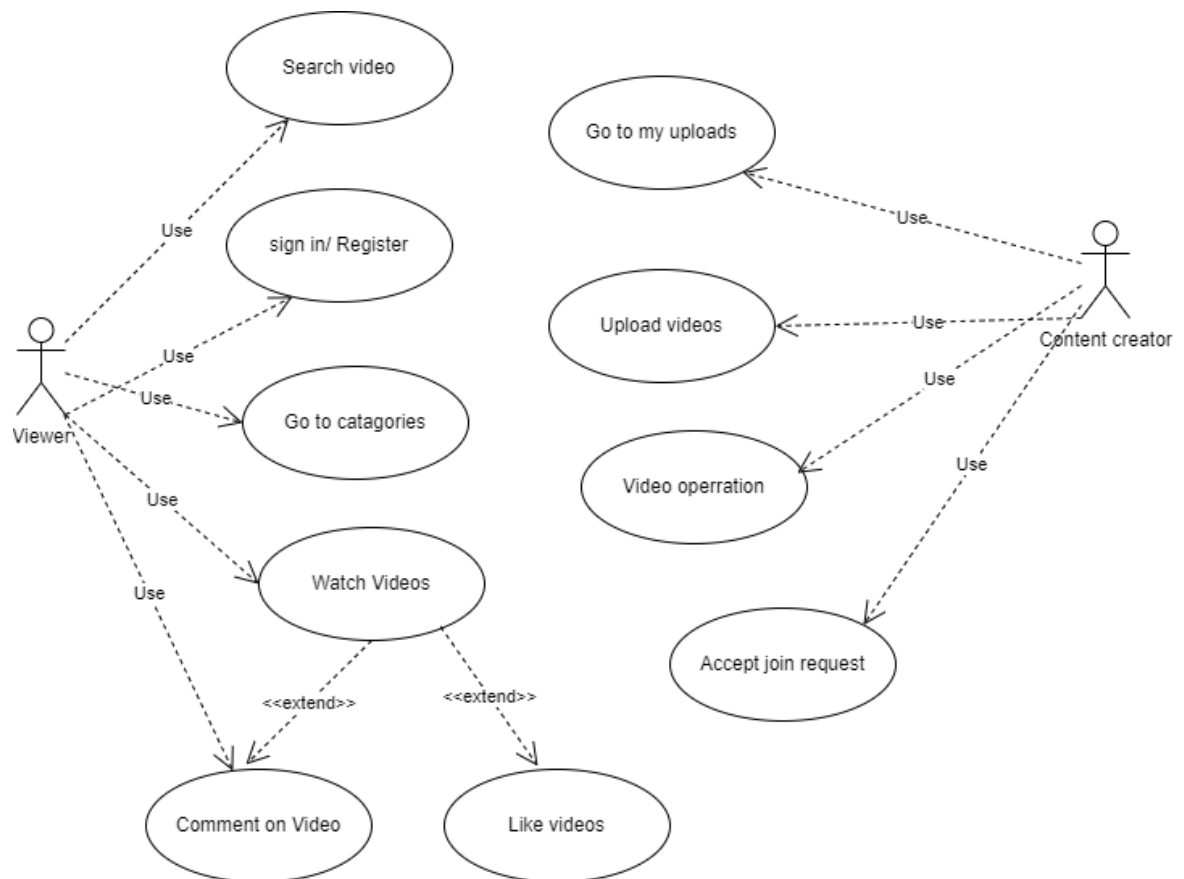- Draw use case on online bill payment system (paytm)
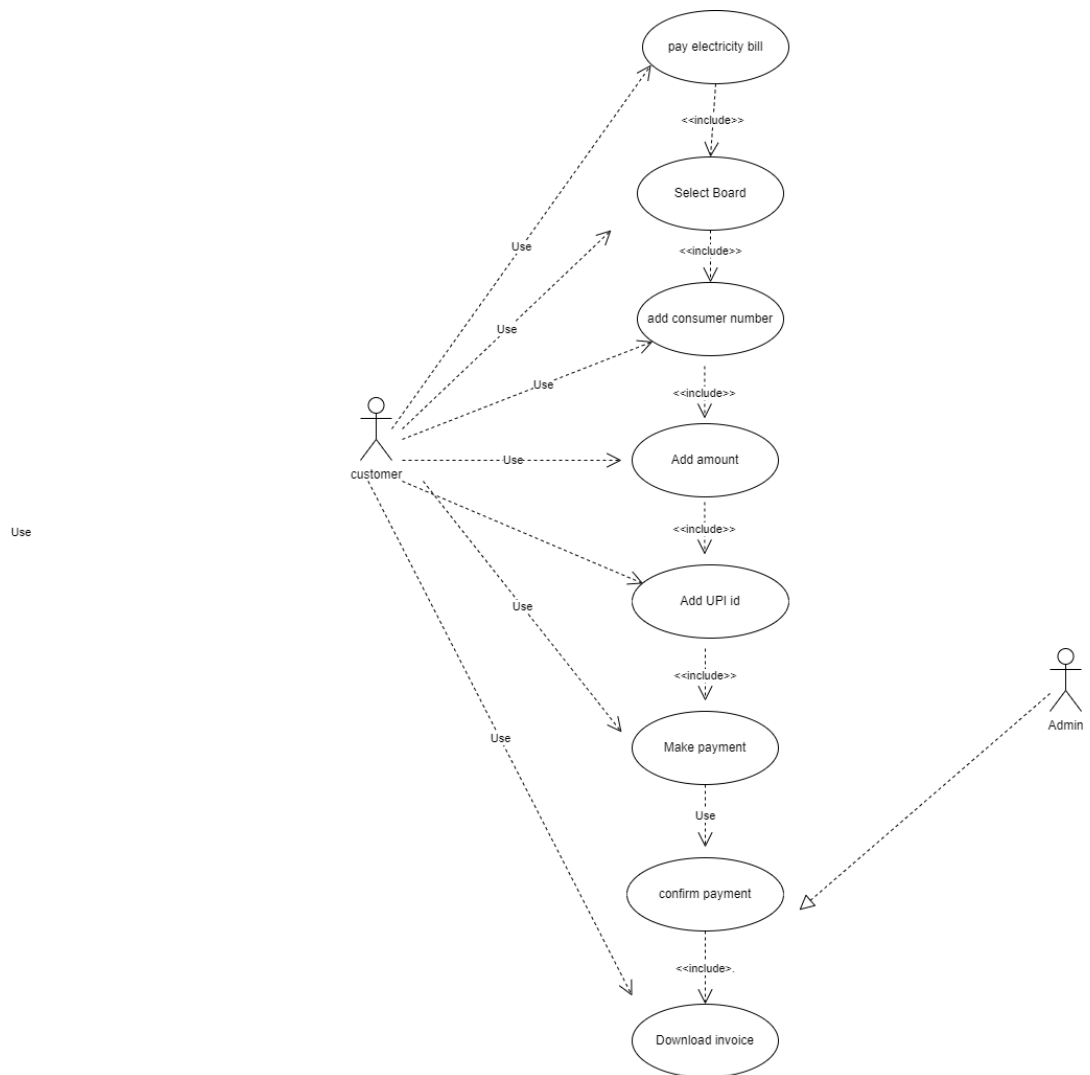
- Draw a use case on a banking system for customers
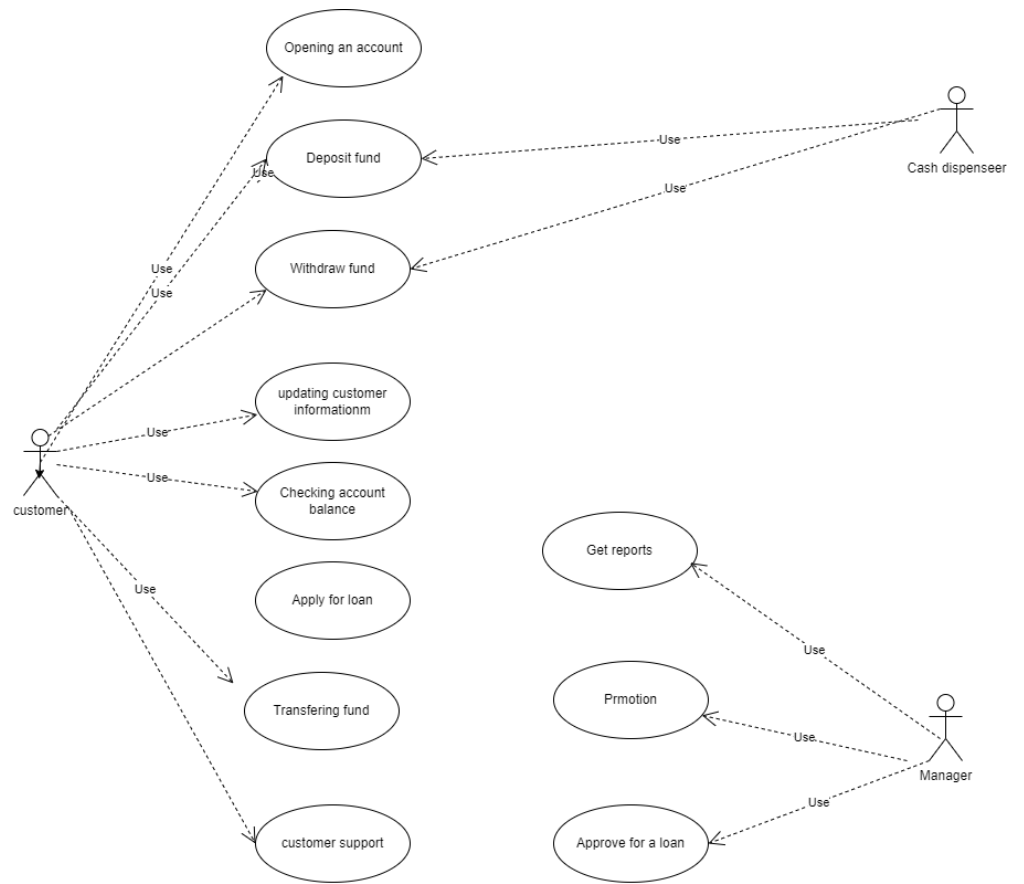
- **Draw a use case on broadcasting system**

- **Write SDLC phases with a basic introduction**
  Ans: There are 7 phases in SDLC –
  1) Requirement gathering

  In this first phase they gather detailed information about features and functional-non-functional requirements of the software to be developed. A business analyst meets clients to gather requirements as per client business needs.

  2) Analysis phase
  The data analysis refers to the stage in the process of transforming collected data into a usable form. The architecture defines the components, their interfaces and behaviours.

3) Design phase

In this phase software architecture and UI/Ux designer works together. The architecture team also converts the typical scenarios into a test plan.

4) Implementation phase

In the implementation phase, the team builds the components either from scratch or by composition. the implementation phase deals with issues of quality, performance, baselines, libraries, and debugging.

5) Testing phase

In this phase, they test the software as per the client's requirements and make sure that the software is defect-free and quality is the most important.

6) Deployment

It involves deploying the application and planning support and maintenance.

7) Maintenance phase

It is one of the activities in software engineering. the developing organization or team will have some mechanism to document and track defects and deficiencies.

- Explain phases of waterfall model
The classical software lifecycle models the software development as s step-by-step "waterfall" between the various development phases.

There are 7 phases of waterfall model

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In this waterfall model we can't go back to previous phase we have to move forward so it is sometimes high risked and uncertainty.

- Write phases of spiral model so it is sometimes high risked and uncertainty.

In spiral model there are four main phase

1) Planning

This phase involves defining the goals and objectives of the project. it includes identifying stakeholders, gathering requirements, and creating a sample model.

2) Risk analysis

In this phase, potential risks are identified and analysed. Risk management strategies and minimize possible problems.

3) Engineering

This is the development phase where the software is designed, codded, and tested. Product may be created to validate designs and gather feedback.

4) Evaluation

This is the final phase which involves reviewing the progress in the current cycle and planning for the next iteration. Customer feedback is gathered and incorporated into the next cycle

- **Explain working methodology of agile model and also write pros and cons**

   Ans: Agile is a modern way of doing projects, specially in tech. instead of planning everything in advance and sticking to that plan no matter what, agile is more flexible. Agile breaks down a project into small, manageable parts called "Iteration". The team works on these smaller tasks in short cycles, typically 2-4 weeks, and continuously improves the product based on feedback. this allows for faster delivery of valuable features, better responsiveness to changing what the customer truly needs.

   PROS:

- Very realistic approach to software development

- promotes team work and cross training

- functionality can be developed rapidly developed

- suitable for fixed or changing requirements

- Good model for environments that change steadily

- Easy to manage.

- Gives flexibility to developers

CONS:

-Budgets can become unpredictable if the project needs to go in another direction.

- the many agile meetings can take up a lot of time

- Depends heavily on customer interaction, so if a customer is not clear, team can be driven in the wrong direction.

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

- it can be harder to find new employees who are experienced with agile methods.

- **Draw use case on OTT platform**
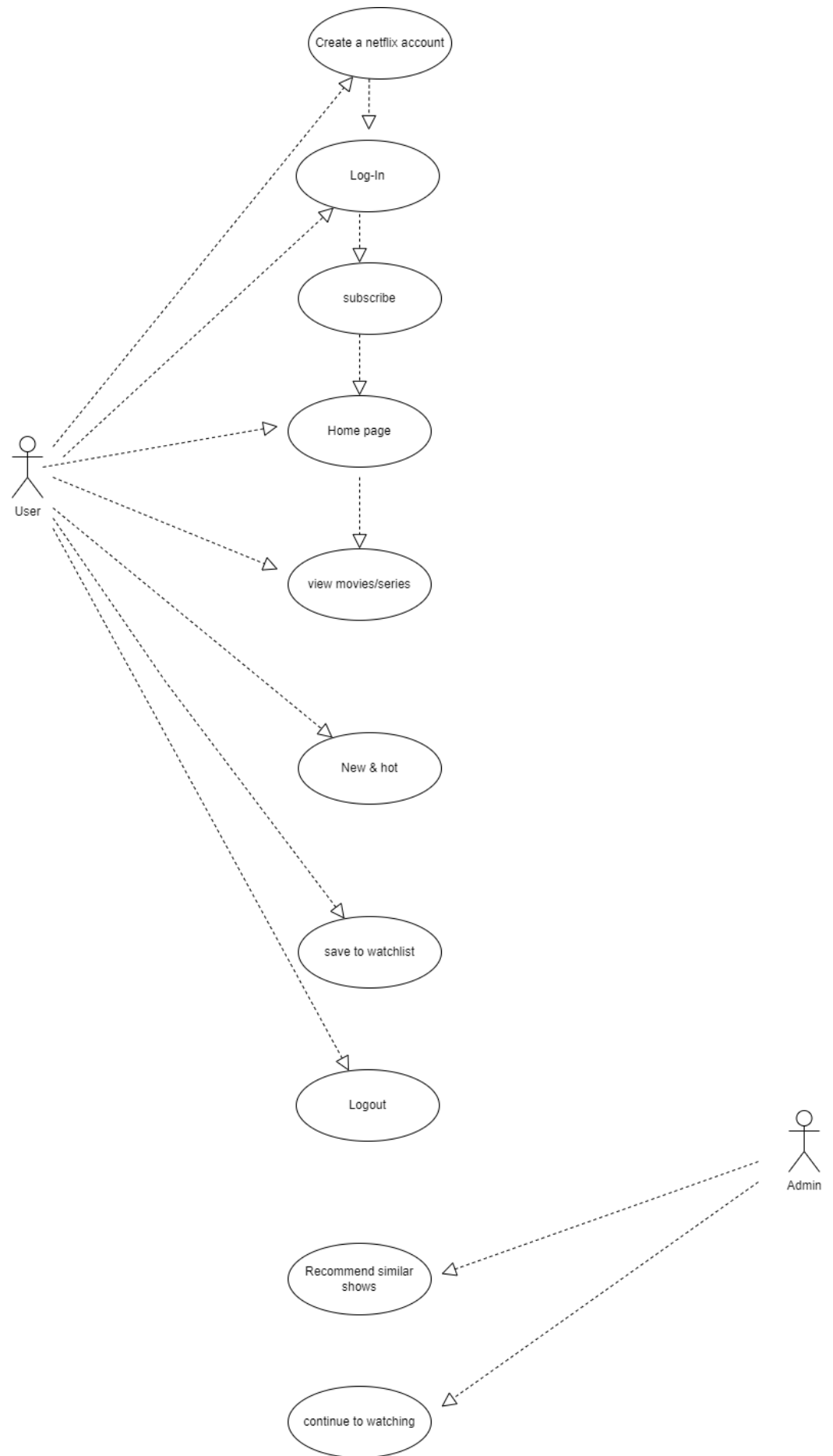
- **Draw use case on E-commerce application**
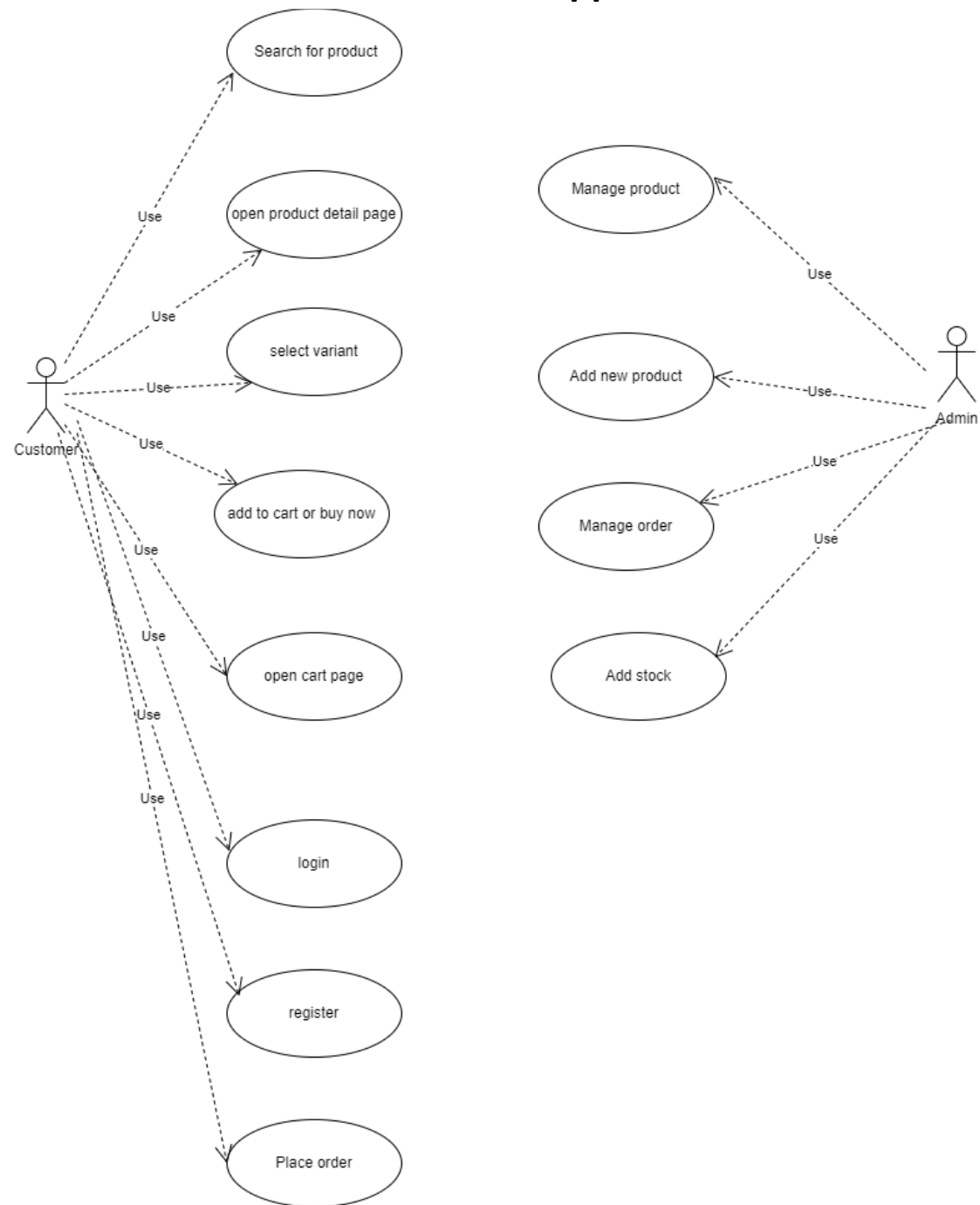
- **Draw use case on online shopping a product using payment gateway**