Assignment – 1

Q1 What is SDLC?

ANS: SDLC or Software Development Life Cycle is essentially a series of steps or phases that provides a module for the development and life cycle management of an application or piece of software.

Q2 What is Software Testing?

ANS: Software Testing is a Process of Evaluating Software to Identify Defects and ensure it meets requirements. It involves components or systems under specific conditions to validate functionality & improve quality. Testing is integral throughout the development lifecycle to mitigate risk & deliver reliable, satisfactory software products.

Q3 What is Agile Methodology?

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.

Q4 What is SLR?

ANS: SRS or Software Requirement Specification is a detailed document that outlines the functional and non-functional requirements of a software project. It serves as a blueprint for

developers, stakeholders and testers providing a clear understanding of what the software should accomplish and how it should behave.

Q5 What is OOPS?

ANS: OOPS or Object-Oriented Programming it is a programming paradigm based on the concept of “Objects”, which can contain data in the form of fields (attributes or properties), & code, in the form of procedures (methods or functions). Objects are instances of class, which serve as blueprints for creating objects. Classes define the properties & behaviors that objects can have. Encapsulations, Inheritance, Polymorphism, & Abstraction are the four fundamental principles of OOPS.

Q6 Write a Basic Concept of OOPs?

ANS: Object-Oriented Programming (OOP) is a programming paradigm based on the concept of objects, which contain data & methods. Classes define the blueprint for creating objects, encapsulating their attributes & behaviors. Inheritance allows classes to inherit properties and methods from other classes, promoting code reuse. Polymorphism enables objects to be treated as instances of a common superclass, with methods behaving differently based on the object. Abstraction hides implementation details, focusing on essential features of objects for easier development & maintenance.

Q7 What is Object?

ANS: An Object is a fundamental concept that represents a real-world entity or concept. An object is an instance of a class and embodies the properties (attributes) and behaviors (method or function) defined by that class.

Q8 What is Class?

ANS: A class in OOPS acts as a blueprint for creating objects. Its defines the properties (attributes) and behaviors (methods) that objects of that classes will have. Classes encapsulate data and methods related to specific entities or concepts, facilitating code organization & reuse.

Q9 What is Encapsulation?

ANS: Encapsulation refers to the bundling of data & methods that operate on the data into a single unity or class. It helps in hiding the internal state of an object and only exposing the necessary functionality.

Q10 What is Inheritance?

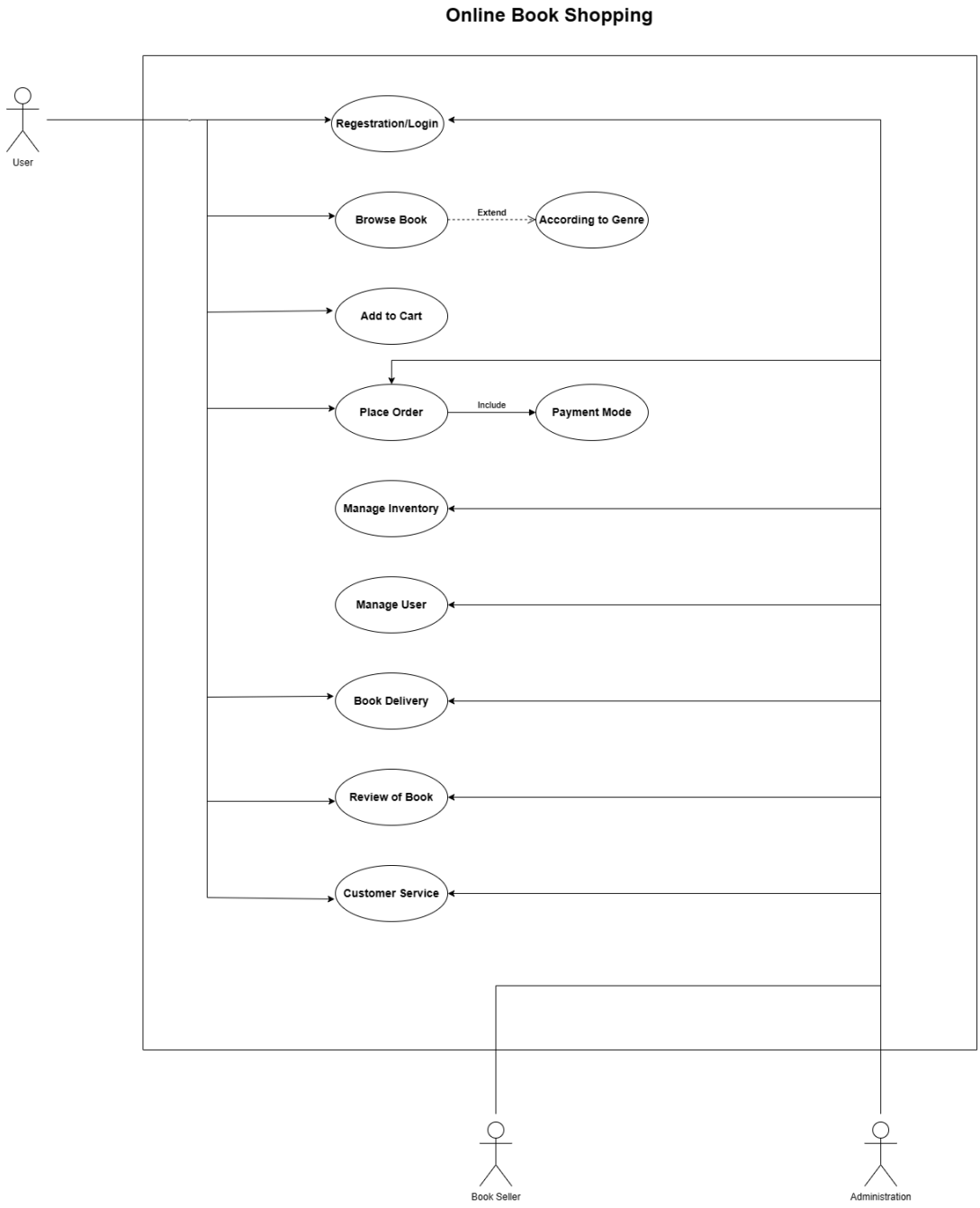
ANS: Inheritance allows a class (subclass or derived class) to inherit properties and methods from another class (superclass or base class). It promotes code reusability & facilitates the creation of hierarchical relationships between classes.

Q11 What is Polymorphism?

ANS: Polymorphism enables objects of different classes to be treated as objects of a common superclass. It allows methods to behave differently based on the object they are called upon. Polymorphism can be achieved through method overloading and method overriding.

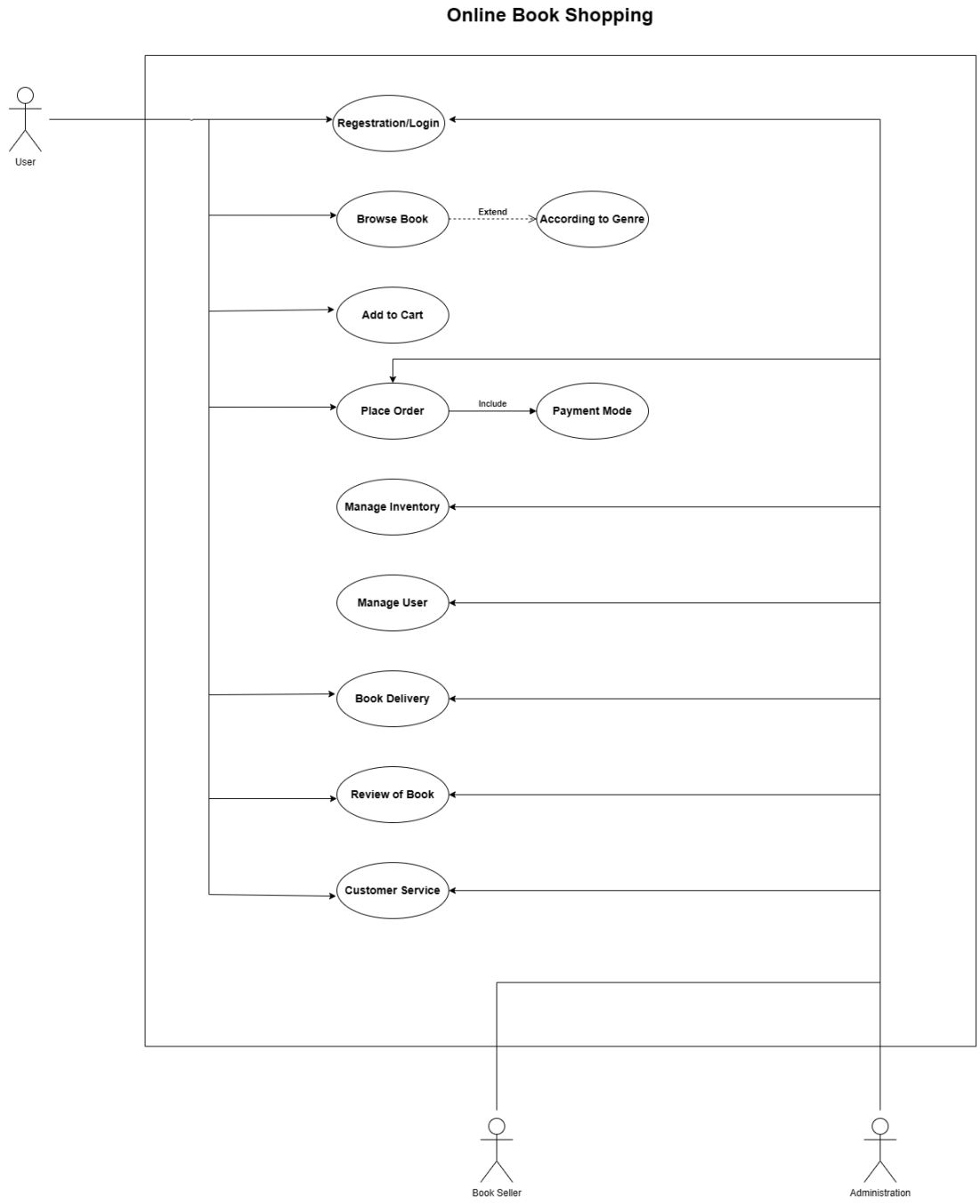
Q12 Draw Use-Case on Online Book Shopping?

ANS:



Q13 Draw a Use-Case of Online Bill Payment?

ANS:



Q14 Write SDLS Phases with basic introduction?

ANS: SDLC is a structure imposed on the development of a software product that defines the process for planning implementation, testing, documentation deployment and ongoing maintenance and support. There are several different development models.

SDLC Phases:

Requirements Collection/Gathering	Establish Customer Needs
Analysis	Model & Specify the Requirements-" What"
Desigin	Model & Specify a Solution-" Why"
Implementation	Construct a Solution in Software
Testing	Validate the solution against the requirement
Maintenance	Repair defect and Adapt the solution to the new requirement.

Q15 Explain Phases of the Waterfall Model?

ANS: Waterfall Model or Classical Software Lifecycle model is a Model that requirement is well documented, clear and fixed, Product definition is stable, and technology is understood and is not dynamic there are no ambiguous requirements ample resources with required expertise are available to support the product and project is short.

Q16 Write Phases of Spiral Model?

ANS: The Spiral Model is a Risk Driven Model, meaning that the focus is on managing risk through multiple iterations of the software development process. It consists of the following phases:

1. **Determine objectives and find alternate solutions:** its requirement gathering and analysis. Based on the requirements, objectives are defined, and different alternative solutions are proposed.
2. **Risk analysis and resolving:** All proposed solutions are analyzed, and any potential risk is identified analyzed and resolved.
3. **Develop and Test:** The actual implementation of the different feature. All the implementation features are then verified through testing.
4. **Review and Planning of the next Phases:** The software is evaluated by the customer. It also includes risk identification and monitoring like cost overrun or schedule slipping and after that planning of the next phases is started.

Q17 What is Agile Manifesto Principle?

ANS:

1. **Individuals & Interactions:** in agile development, self-organization and motivations are important as are interaction like co-location & pair programming.
2. **Working Software:** Demo working software is considered the best means of communication.
3. **Customer Collaboration:** As the Requirement cannot be gathered completely in the beginning.
4. **Responding to Change:** agile development is focused on quick responses to change and continuous development.

Q18 Explain Working Methodology of Agile Model & also write Pros & Cons?

ANS: PROS:

- It is a very realistic approach to software development.
- Promotes teamwork & cross training.
- Functionality can be developed rapidly and demonstrated.
- Resources requirements are minimum.
- Suitable for fixed or changing requirements
- Delivers early partial working solutions.
- Goods model for environment that changes steadily.
- Minimal rules, documentation easily employed.
- Enables concurrent development & delivery within an overall planned context.
- Little or no planning required

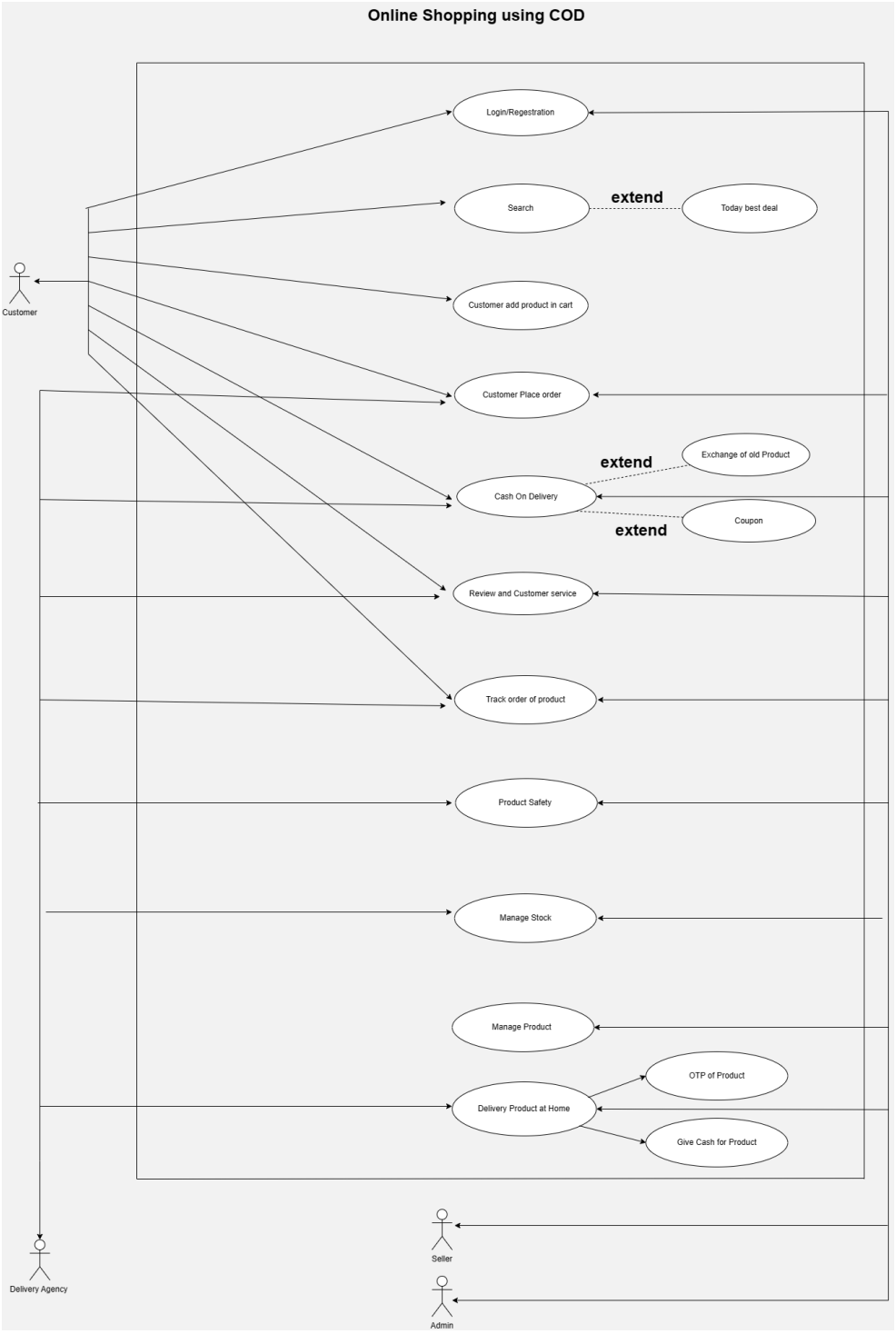
- Easy to manage.
- Gives flexibility to developers.

CONS:

- Not suitable for handling complex dependencies.
- More risk of sustainability 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.
- There is very high individual dependency, since there is minimum documentation generated.

Q19 Draw a use-case on Online Shopping Product using COD (Cash on Delivery)?

ANS:



Q20 Draw a Use-Case on Online Shopping Using Payment gateway?

ANS: