1. **What is SDLC?**

* SDLC means Software development life cycle.
* The SDLC is a structured process that enables the production of high quality, low-cost software in the shortest possible production time. SDLC is to produce superior software that meets customer expectations and demand.
* SDLC enhance development speed and minimizes project risks and costs associated with alternative methods of production.
* SDLC is a process followed for a software project within a software Organization. it consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software.
* The life cycle defines a methodology for improving the quality of software and the overall development process.

**2. What is software testing**?

* Software testing is the process of assessing the functionality of a software program.
* It can also be stated as the process of validating and verifying that a software program or application or product.
* Testing is the process of demonstrating that errors are not present.

1. **What is agile methodology**?

* Agile SDLC model is a combination of iterative and incremental process model 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.

**PROS**:

* It is a very realistic approach to software development.
* Promotes teamwork and cross training.
* Resource requirements are Minimum.

**Cons:**

* More risk of sustainability, maintainability and extensibility.
* There is very high individual dependency, since there is minimum documentation generated.
* Problem with workflow coordination.

1. **What is SRS?**

* Software Requirement Specification.
* A software requirement specification is a complete description of the behavior of the system developed.

**Types of requirement:**

* Customer Requirement
* Functional Requirement
* Non-Functional Requirement

**Customer Requirements:**

* The customers are those that perform the eight primary functions of systems engineering, with special emphasis on the operator as the key customer. Operational requirements will define the basic need and at a minimum answer the questions posed in the following listing.

**Functional Requirement:**

* Functional Requirements are very important system requirement in the system design process. These requirements are the technical specifications, system design parameters and guidelines, data manipulation, data processing and calculation modules etc.

**Non-Functional Requirements:**

* Non-functional requirement are requirement that specify criteria that can be used to judge the operation of a system, rather than specific behaviors.

1. **What is Oops?**

* Object oriented programming
* Messages are received by the methods of an object.
* An object is like a black box.
* Identifying objects and assigning responsibilities to these objects.
* Object of a program interact by sending messages to each others.

1. **Write Basic Concepts of oops.**

* Object
* Class
* Abstraction
* Overloading
* Overriding

**7. What is class?**

* Class is collection of Data and Function

**8. What is object?**

* Object gives permission to access the functionality of class

**9. What is encapsulation?**

* Wrapping of Data

**10. What is inheritance?**

* Creating a class from an existing class

**11. What is polymorphism?**

* One name multiple from

1) Over ridding

2) Over loading

**12. Write SDLC phases with basic introduction**

* Phases of SDLC
* Requirements
* Analysis
* Design
* Implementation
* Testing
* Maintenance

1. **Requirement**

* Collect the requirement from the customer and once they get the requirement they prepare some kind of document that is called SRS document (Software Requirement Specification)

1. **Analysis**

* Ideally this document states in a clear and praise fashion what is to be built.

1. **Design**

* Based on the requirement document the designer will prepare the design document.

4. **Implementation**

* Implementation in the sense of development(coding)

5. **Testing**

* Tester will test the software.

6. **Maintenance**

* Customer Start using the software so that is a maintenance phase. Repair defects and adapt the solution to the new requirement.

1) **Adaptive maintenance**

* Adapting the existing solution of the new platforms

2) **Corrective maintenance**

* Identifying and repairing defect

3) **Perfective maintenance**

Implementing the new requirements

**13**. **Write agile manifesto principles**

* The 12 agile principles

### 1)  Satisfy Customers through Early & Continuous Delivery

### 2) **Welcome Changing Requirements Even Late in the Project**

### 3) **Deliver Value Frequently**

### 4) **Break the Silos of Your Project**

### **5) Build Projects around Motivated Individuals**

### 6) **The Most Effective Way of Communication is Face-to-face**

### 7)**Working Software is the Primary Measure of Progress**

### 8) **Maintain a Sustainable Working Pace**

### 9)**Continuous Excellence Enhances Agility**

### 10) **Simplicity is Essential**

### 11)**Self-organizing Teams Generate Most Value**

### 12)**Regularly Reflect and Adjust Your Way of Work to Boost Effectiveness**

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

* It is combination iterative and increment model.
* It is divides the software into small incremental builds are provided in iterations that means the big projects are divided into small chunks.
* Each iteration last about one to three weeks.
* Each iteration involves all the team members to working simultaneously analysis, coding, unit testing and acceptance testing.
* At the end of the iteration the working product is displayed to the customer or the important stake holder and it is released in the market
* After the release we check for the feedback of the deployed software
* It any enhancement is needed in the projects then it’s re-released

**Advantage**.

* Frequent delivery
* Face to face communication with the customer
* Less time
* Adaptability

**Disadvantage.**

* Less documentation
* Maintenance problem

**15. Explain Phases of the waterfall model**

**1) Unit testing** Unit tests designed in module design phase are executed on the code during this validation phase unit testing is the testing at code level and helps eliminate bags of an early stage, though all defects cannot be uncovered by unit testing.

**2) Integration testing**

Testing is associated with the architectural design phase. Integration tests are performed to test the coexistence and communication of the internal modules within the system.

**3) System testing**

System testing is directly associated with the system design phase. System tests check the entire system functionality and the communication of the system under development with external system. Most of the software and hardware compatibility issues can be uncovered during system test executing.

**4) Acceptance testing**

Acceptance testing is associated with the business requirement analysis phase and involves testing the product in user environment Acceptance testing the compatibility issue with the other system available in the user environment. It also discovered the non-functional issue as load and performance defects in the actual user environment.

**16. Write phases of spiral mode**

1. **Determine objectives and find alternate solutions**

 This phase includes requirement gathering and analysis. Based on the requirements, objectives are defined and different alternate solutions are proposed.

1. **Risk Analysis and resolving**

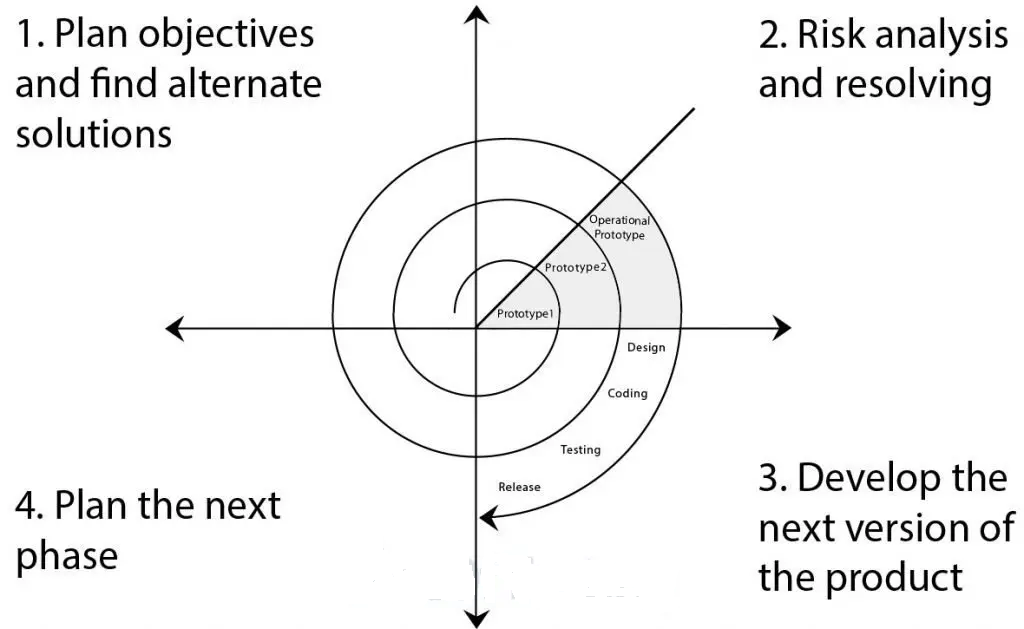
In this quadrant, all the proposed solutions are analyzed and any potential risk is identified, analyzed, and resolved.

1. **Develop and test**

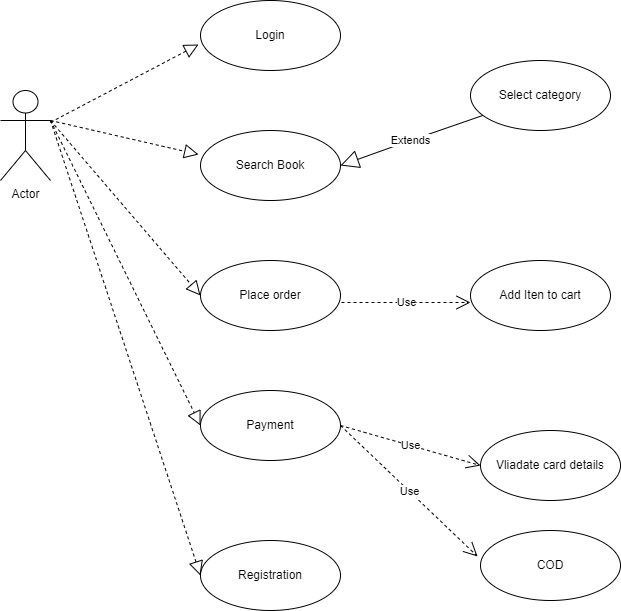
 This phase includes the actual implementation of the different features. All the implemented features are then verified with thorough testing.

1. **Review and planning of the next phase**

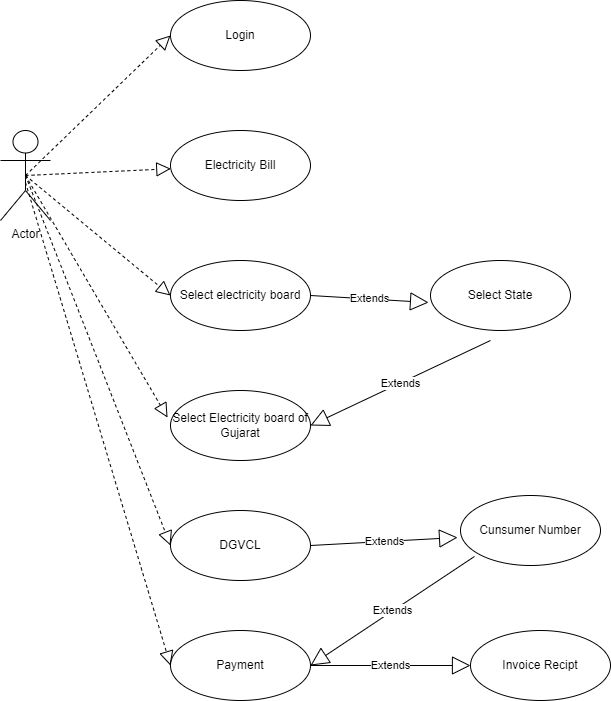
In this phase,the software is evaluated by the customer. It also includes risk identification and monitoring like cost overrun or schedule slippage and after that planning of the next phase is started.



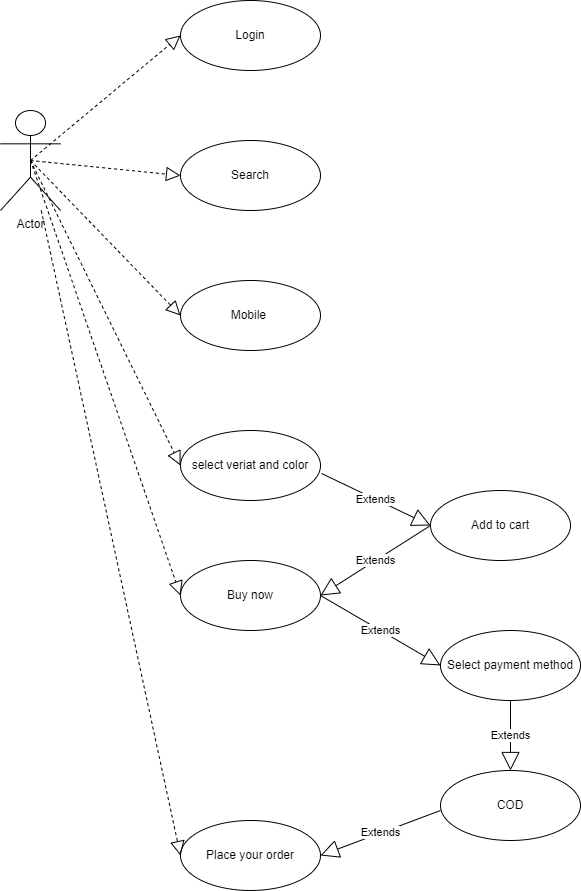
**17. Draw Use case on Online book shopping**



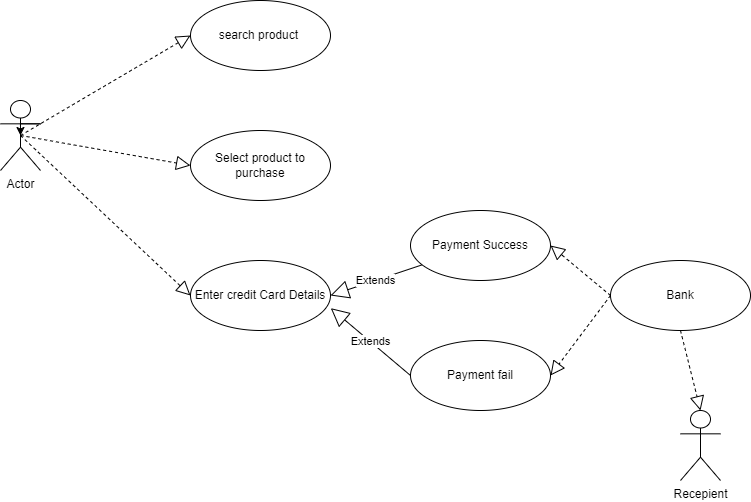
**18. Draw Use case on online bill payment system (Pay tm)**

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**19. Draw use case on Online shopping product using COD**.

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**20. Draw use case on Online shopping product using payment gateway.**

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