Module:-1

Q.1 What is SDLC?

- 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 a number of different development models.
- PHASES OF SDLC:
  1. Requirement Gathering/Collection and Analysis
  2. Design
  3. Implementation
  4. Testing
  5. Deployment
  6. Ongoing Maintaince And Support.

Q.2 What is software testing?

- Software Testing is a process used to identify the correctness, completeness, and quality of developed computer software.
- It is an activity in which we check whether the actual output matches the expected output.
- It makes the software error free, defect free and bug free.
- It indentifies the errors, gaps and missing requirements in contrary to the actual requirements.
- It identifies the correctness, completeness and quality of the software product.
- It is a process of executing the program with the intent to find a software bug.

Q.3 **What is agile(done quick) methodology**?

- Agile Methodology is a combination iterative and increment model.
- It divides the software into small incremental builds, this build are provided in iterations, that means the big projects are divided into small chunks (iterations)
- Each iteration last about one to three weeks.
- Each iteration involves all the team members working simultaneously on areas like planning, requirement analysis, design, 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.
- If any enhancement i`s needed in the project then it's done and it's **re-released.**

Advantage of Agile method:

1. Frequent delivery
2. Face to face communication with the customer
3. Less time
4. Adaptability

Disadvantage of agile method:

1. Less documentation
2. Maintenance problem.

Q.4 What is SRS

- Software requirement specification:
- SRS is a complete description of an application which is to be developed.
- SRS contains use case diagram that describes all the interaction user will have with the software application.

Q.5 What is oops?

- Object oriented programming is way of writing the programs in organized way
- Objects are like a black box where data are hidden.

Q.6 Write Basic Concepts of oops

Basic Concept of oops:-

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

Q.7 What is object

Object gives the permission to access functionality of class.

Q.8 What is class

Class is a collection of data member and member function.

Q.9 What is encapsulation

The process wrapping the data in a single unit. To secure the data from outside world.

Q.10 What is inheritance

Making a class from an existing class. Deriving the attribute of some other class.

Q.11 What is polymorphism

- One name multiple form.

Type:

Overriding

Same name of function with same parameter but definition will be different.

Over loading

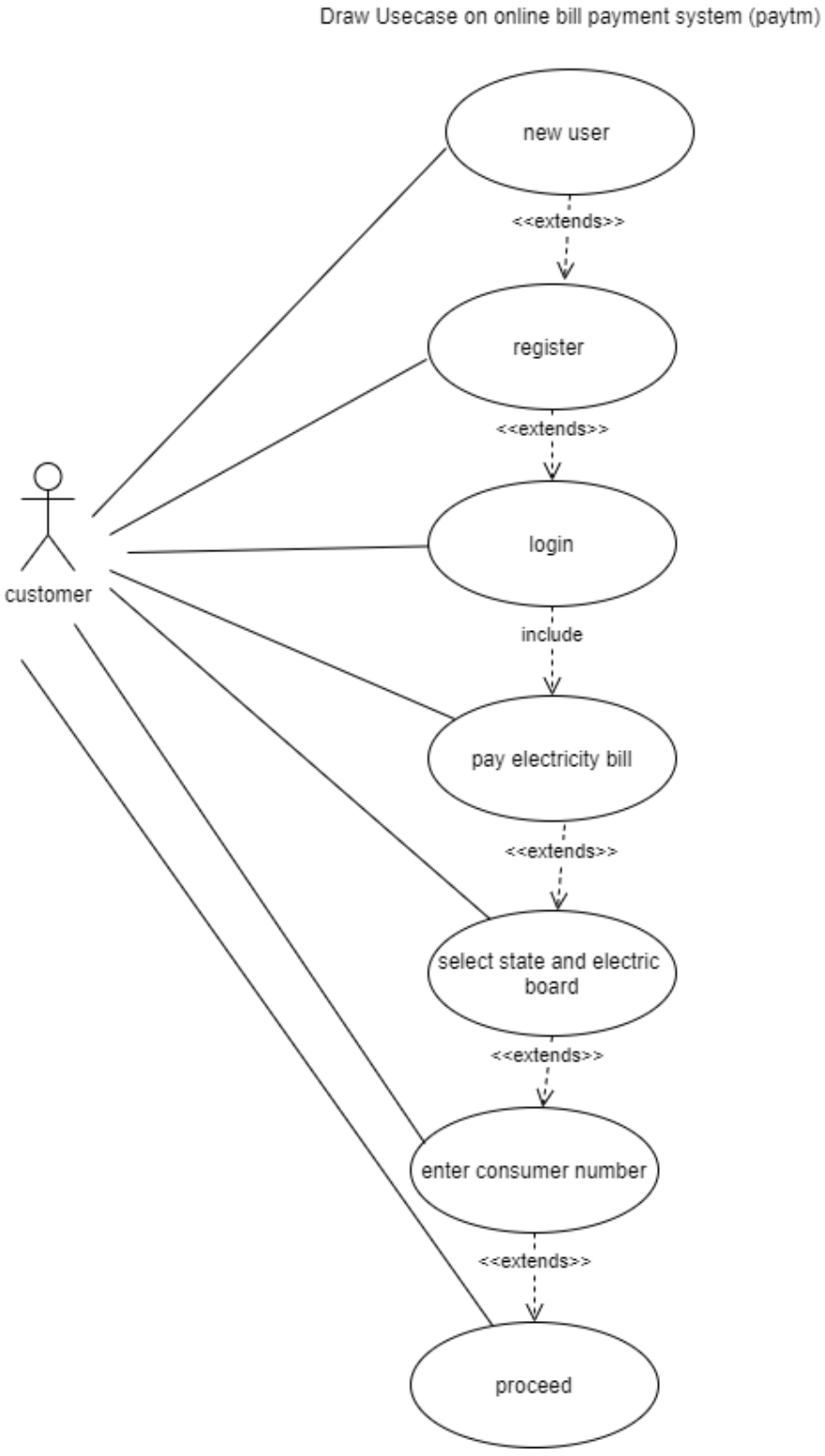
1.Function overloading: Same function name but different parameter.

2.Constructor overloading: Same constructor name but different parameter.

3.Operator overloading. Using the operator to add the object instead of variable operands.

Q.12 Draw Usecase on Online book shopping

Q.13 Draw Usecase on online bill payment system (paytm)



Q.14 Write SDLC phases with basic introduction

- Software development life cycle.
- Phases:
  1. Requirement gathering and analysis:- This phases involves gathering information about the software requiements from stakeholders such as customers, end-user, and Business analysts.
  2. Design:- In this Phase, the software design is created which includes the overall architecture of the software, data structure, and interfaces.
  3. Implementation:- The design is then implemented in code, usually in several iterations, and this phase is also called as Development.
  4. Testing: The Software is thoroughly tested to ensure that it meet the requirements and work correctly.
  5. Deployment: To release the project in market
  6. Maintenance and support : to provide the support for any future defect, bug and error and adapt any new feature as per the requirement

Q.15 Explain Phases of the waterfall model

- Waterfall Model has six phases:
  1. Requirements Gathering and Analysis: The first phase involves gathering requirements from stakeholders and analyzing them to understand the scope and objectives of the project.
  2. Design Phase: Once the requirements are understood, the design phase begins. This involves creating a detailed design document that outlines the software architecture, user interface, and system components.
  3. Implementation and Unit Testing: The implementation phase involves coding the software based on the design specifications. This phase also includes unit testing to ensure that each component of the software is working as expected.
  4. Integration and System Testing: In the testing phase, the software is tested as a whole to ensure that it meets the requirements and is free from defects.
  5. Deployment: Once the software has been tested and approved, it is deployed to the production environment.
  6. Maintenance: The final phase of the Waterfall Model is maintenance, which involves fixing any issues that arise after the software has been deployed and ensuring that it continues to meet the requirements over time.

Q.16 Write phases of spiral model

- 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. Planning:- The first phase of the Spiral Model is the planning phase, where the scope of the project is determined and a plan is created for the next iteration of the spiral.

  2. Risk Analysis:- In the risk analysis phase, the risks associated with the project are identified and evaluated.

  3. Engineering:- In the engineering phase, the software is developed based on the requirements gathered in the previous iteration.

  4. Evaluation:- In the evaluation phase, the software is evaluated to determine if it meets the customer's requirements and if it is of high quality.

  5. Planning:- The next iteration of the spiral begins with a new planning phase, based on the results of the evaluation.

Q.17 Write agile manifesto principle

- General Testing Principles:-
  1. Testing shows presence of Defects
  2. Exhaustive Testing is Impossible!
  3. Early Testing
  4. Defect Clustering
  5. The Pesticide Paradox
  6. Testing is Context Dependent
  7. Absence of Errors Fallacy

Q.18 Explain working methodology of agile model and also write pros and cons

- 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.
- Each iteration typically lasts from about one to three weeks.
- Every iteration involves cross functional teams working simultaneously on various areas like planning, requirements analysis, design, coding, unit testing, and acceptance testing.

  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 or changing requirements
- Delivers early partial working solutions.
- Good model for environments that change steadily.

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.
- 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.

Q.19 Draw Usecase on Online shopping product using COD.

Q.20 Draw Usecase on Online shopping product using payment gateway