Module 1

1) What is SDLC?

- Software development life cycle is a series of steps or phases that provides the model of development.
- It is the life cycle management for the piece of software or application.

2) What is software testing?

- Software testing is a process of evaluating a system or its component with the intent to find that whether it satisfies the specific requirements or not.

  Or

- Software testing is a process used to identify correctness, completeness and quality of developed computer software.

3) What is Agile Methodology?

- It is a combination of iterative and incremental 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.
- Each iteration last about one to four weeks.
- Each iteration involves all the team members working simultaneously on areas like planning, requirement analysis, design, coding, unit testing and acceptance testing.
- All 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 is needed in the project then its re- released.

4) What is SRS?

- Software Requirement Specification
- Software is an complete description of an application which is to be developed.
- SRS is a complete use case diagram that describes all the interaction user will have with the software application.
- It is also called as FRS,BRS,FRD.

5) What is OOPS?

- Object oriented programming way of writing the program in organized way
- Objects like a blackbox where data are hidden.

6) Write basic concepts if OOPS?

a) Class
b) Object
c) Inheritance
d) Polymorphism
e) Encapsulation
f) Abstraction

7) What is Class?

Class is a collection of data member and member function

```
IntA=10, B=20
Void func(intR,intY){

A+B
}
```

Example: School is a class

Data members are students, Teachers Parents

8) What is Object?

Object gives a permission to access functionality of class.

9) What is Encapsulation

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

10) What is Inheritance

Making class from an existing class deriving the attribute of some other class

11) What is Polymorphism ?

One name multiple form

1) Overriding: Same name of function with same parameter but definition will be different.

   Sum (inta, initb)

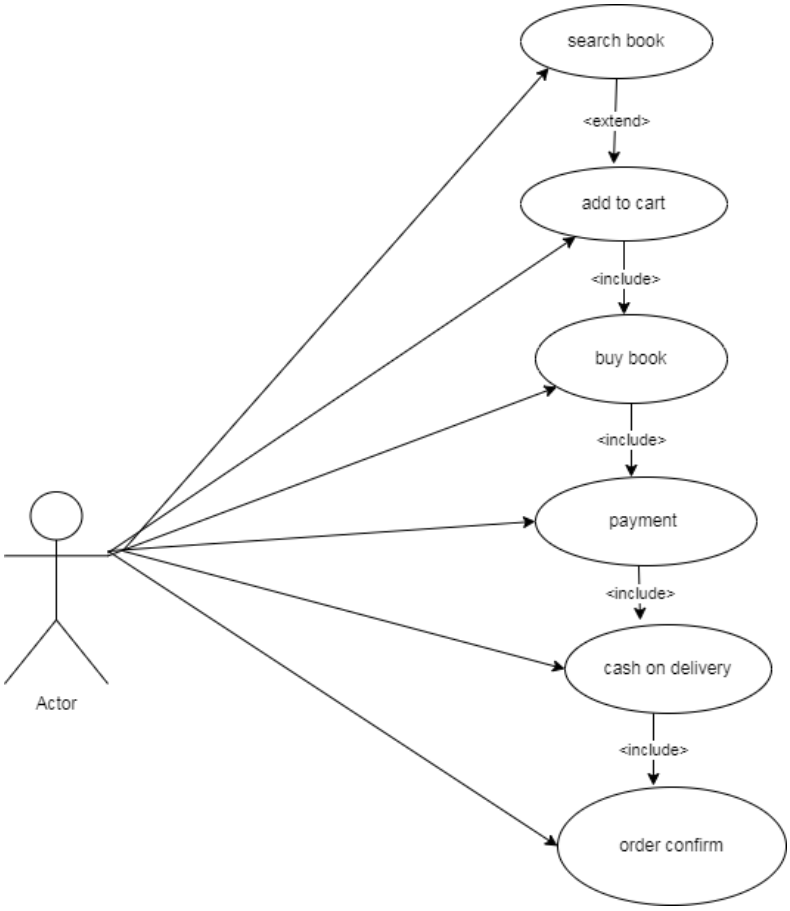
   Sum (inta, intb)

2) Overloading: Same function same name but different parameter.

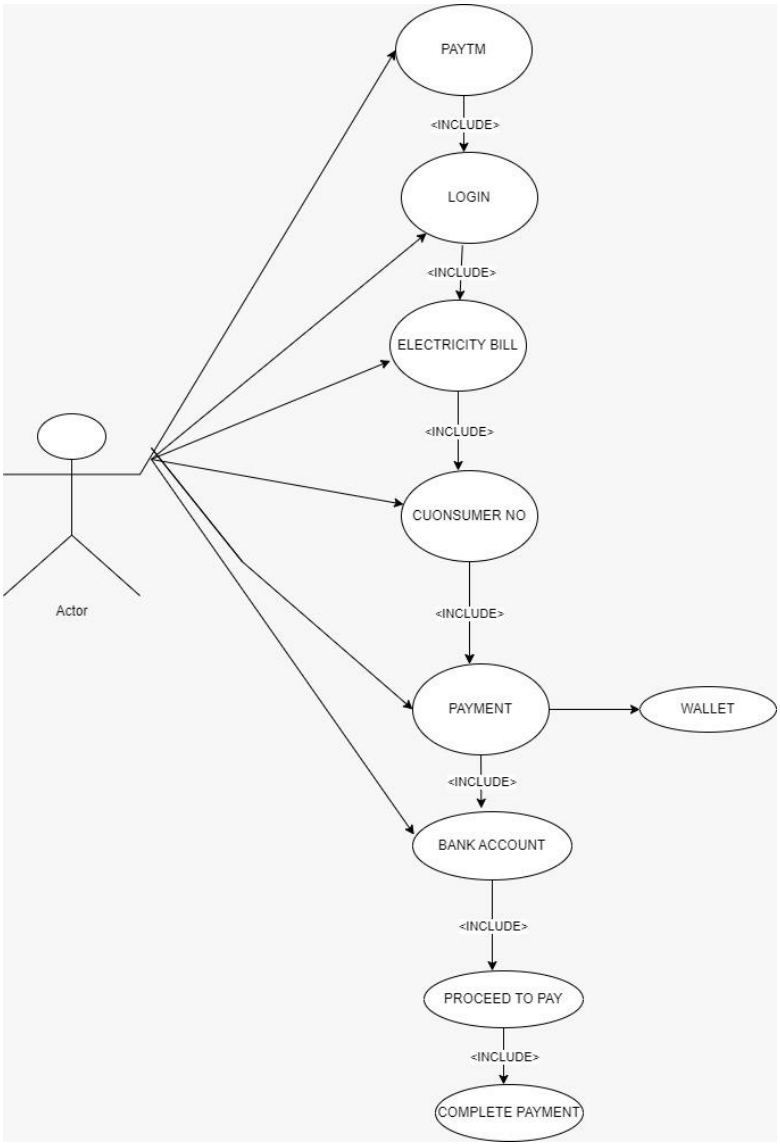
   Sum (int a, int b)

   Sum (int u)

12) Draw the usecase on Online book shopping



13) Draw the usecase of online bill payment system(paytm)



14) Write SDLC phases with basic introduction?

Phases of SDLC:

1) **Requirement Gathering:**
    - Customer needs
    - Requirement from stakeholder, client, customer, ceo,etc.
    - Improvement in current software
    - Where the system will deploy
    - What will be the duration of the project
    - What will be the operation(eg .signup/signin ,search, filters, add/remove from the cart/to the cart, payment, etc.)
2) **Planning/ Analysis**
    - Details on computer programming languages and environment, machines,packages, application architecture, distributed architecture layering,memory size, platform, algorithms, data structure,global type definitions, interfaces and many other engineering details are established.
3) **Design**
    - Design architecture document
    - Implementation plan
    - Critical priority analysis
    - Performance analysis
    - Notification navigation component eg. Search bar,slides, etc.
    - Elements (button, dropdown, textbox, checkbox, radiobutton, link, etc.
4) **Implementation**
    - In the implementation phase, the team builds the components either from scratch or by composition
    - Implement code
    - Critical error removal
5) **Testing**
    - We test the build to check for defect.
    - We report the defect and get it fixed.
    - We retest the build until it fulfill customer requirement.

6) Deployment

- Project live then it became a product(release).

7) Maintainance:

1) **Corrective maintainance:** Identifying and repairing defects.
2) **Adaptive maintainance:** Adapting the existing solution to the new platforms.
3) **Perfective maintainance**: Implementing the new requirement.

15) Explain the phases of waterfall model?

- The waterfall is unrealistic for many reasons especially.
- Requirements must be “frozen” to early in the life cycle.
- Requirements are validated too late

Applications :

- Requirements are very well documented clean and fixed.
- Product definition is stable.
- Technology is understood and is not dynamic.
- There are no ambigious requirements.
- The project is too short.

Pros :

- Simple and easy to understand and use
- Clearly defined stages
- Well understood milestones.
- Easy to arrange tasks.
- Process and results are well documented.

Cons:

- No working software is produced until late during the life cycle.
- High amounts of risk and uncertainty.
- Not a good model for complex and object oriented projects.
- Poor model for long and ongoing projects.
- Cannot accommodate changing requirements.

16) Write the phases of spiral model

- When costs there are a budget constraint and risk evaluation is important.
- For medium to high risk projects.
- Customer is not sure of their requirements which are usually the case.
- Requirement are complex.

Prons :

- Changing requirements can be accommodated.
- Requirements can be captured more accurately.
- Users are see the systems early.
- Development can be divided into smaller parts and more risky parts can be developed earlier which helps better risk management.

Cons :

- Management is more complex
- Not suitable for small or low risk projects and could be expensive for small projects.
- Process is complex

17) Write Agile manifesto principles

Agile model believes that every project needs to be handled differently and the existing methods need to be tailored to best suit the project requirements. In agile the tasks are divided to time boxes(small time frame) to deliver specific features for release

Agile thought process had started early in the software development and started becoming popular with time due to its flexibility and adaptability.

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

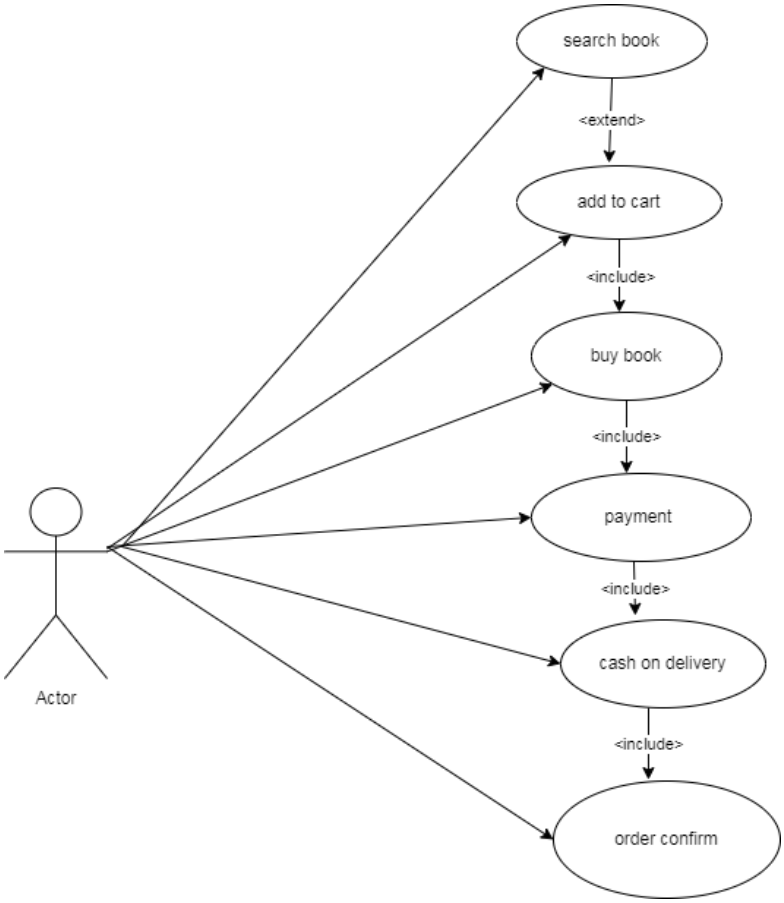
- It is a combination of Iterative and Incremental model.
- It divides the software into small incremental builds, this build are provided in iterations, that means the big projects are divided into small chunks.
- Each iteration last about one to four weeks
- Each iteration involves all the team members 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.

Pros :

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

Cons: Less documentation
Maintainance problem

19) Draw the usecase on online product using COD.



20) Draw usecase on online shopping product using payment gateway.