Module–1(Fundamental)

* What is sdlc?

**SDLC** stands for **Software Development Life Cycle.**

Key Phases of the SDLC:

1)Request analysis and information gathering

-it is possible or not it means Understand and document what the users need from the software

-team and resource it means

-deadline and costing

-team prepare

-technology and database

2)Design

-architecture of project

2 framework database use readymade architecture ex. mysql postgres mongodb - api , shema model - table 3) development - coding frontend developer will develop the software

4) testing 5)deployment - live - hosting 6)maintance – free it means client can make some changes during the process but not add anything extra

* What is software testing?

**Software testing** is the process of involves executing the software to identify bugs or errors.

**4)** pillar of software testing-

1 unit testing- single fun test- ex. Add to cart, remove testing in flipkart application

2 integration testing- ex. Merge voice call and video call then testing

3 system testing- test website from start to end

1. uat(user acceptance testing)- client check the website

* What is agile methodology?

-In agile methodology we can divide our project into multiple sprints,

- And we can run multiple sprints simultaneously

- The benefit of this methodology is that developers, testers, and designers can work in parallel on the same project

- And in this methodology, there is a scrum meeting at the end of the day and in this meeting, we represent the work we have done throughout the day to the client.

* What is oops

OOPS, which stands for Object-Oriented Programming

In this, the compiler of any language can compile the code not from top to bottom but from the middle also

For ex, java, php,python

* Write Basic Concepts of oops

Classes

Objects

Inheritance

Polymorphism

Encapsulation

Abstraction

* What is object

Object is a type of variable where we can store only one data at a time in a variable whereas we can store multiple data at a time in an object

* What is class

class is the collection of method, object, data types, constructor and variable

* What is encapsulation

-Data wrapping

-In this the data is wrapped in method and class

-If the data needs to be unwrapped, then the class first needs to be unwrapped and then the method

* What is inheritance

-child class can use the functionality of parent class using extends keyword

-This means if the parent class has 100 lines of code then the child class can use that code by using inheritance functionality

Advantages 1)Code reusebility

2) Code optimization

Types

1. Single- 1 child and 1 parent
2. Multiple- 1 child and multiple parent
3. Multilevel- we don’t have to skip any class use it sequence wise
4. Hybrid- combination of any 2 inheritance
5. Hierarchical- 1 parent and multiple child

* What is polymorphism

-One interface multiple implementation

Types

1. Method overloading- 1 class, more than one method, name same and data different
2. Method overriding- 1 class , more than one method, name same and data same

* Explain Phases of the waterfall model

Water fall model is similar to SDLC so its phases are

1. Required analysis and information gathering

* It is possible or not
* Gather team and resource
* Deadline and costing – ex, client gives 6 months to complete the project and its cost is 6 lakh so we have to complete the project under 6 months
* Then we have to prepare the team for project
* Then choose technology and database for project

1. Design

* Architecture of project

There are many ready made architecture ex, mysql, postgrey, mongodb

1. development – coding developer will develop software

4)- testing – tester will test the product

5)- deployment- after product will be test it will release to end user

6) maintenance free – if client want to change anything during the project it will be in maintenance free or client want to add anything in project than it will not be in maintenance free so we have to again follow sdlc from phase 1

* Write SDLC phases with basic introduction.

1. Required analysis and information gathering

* It is possible or not
* Gather team and resource
* Deadline and costing – ex, client gives 6 months to complete the project and its cost is 6 lakh so we have to complete the project under 6 months
* Then we have to prepare the team for project
* Then choose technology and database for project

1. Design

* Architecture of project

There are many ready made architecture ex, mysql, postgrey, mongodb

1. development – coding developer will develop software

4)- testing – tester will test the product

5)- deployment- after product will be test it will release to end user

1. maintenance free – if client want to change anything during the project it will be in maintenance free or client want to add anything in project than it will not be in maintenance free so we have to again follow sdlc from phase 1