**Types of SDLC model :**

Classic waterfall

Iterative model

Incremental model

Spiral model

RAD model

Agile model

V Models

Scrum Model

Common phases of SDLC that are in every model :

Planning

Analysis

Design

Coding/implementation

Testing

Deployment/Maintenance

1. **Classic waterfall Model** :

This is called classic model because once we start work on this model we can not change our planning, After go to every stage of model we can not back to previous stage for any changes that we want to make.

This is use when we want to complete projects in small period of time

Ex. This model is used when we have small project and time is limited and customers want their order quickly with some fixed perticular requirements.

Phases of waterfall Model is – Feasibility Study, Requirements Analysis and specifications, Design, Coding and Unit Testing, System Testing and Integration, Maintenance

* Feasibility study is planning that what we can/want to build , simple study for that project.
* Requirement analysis is an analysis of Time ,our Team, Team capability, every estimation of the project with Documents (ex. SRS)
* Design is a design stage that we want to create design of our product after completion of analysis.
* Coding stage is an implementation stage that we are implement in our project for creating our product
* System Testing and Integration is stage of testing of whole system that we made.
* Maintenance stage is for maintain the problem of product and update it at the end.

Advantages : it is a Base model so it is simple and easy to apply

This is Good for small projects

Disadvantages : No feedback system

No parallelism

High risk at the end

No flexibility

1. **Iterative Model :**

It is an updated version of classic model with the use of this model we can go to the previous stage to make any minor changes in the project , so we can fix our previous mistakes.

Ex. This model is used when customer want simple project with less bugs and time is not meter.

Advantages – Feedback System

Good for every simple project

We can fix bugs of previous stage

Disadvantages – No changes in requirement

Time consuming and extra work load

1. **V shaped Model :**

This is Verification and Validation Model and Model design is like in V shaped so we are calling V model

In this model we verify our work step by step and every stage is connected to the testing stage And Validation mean Testing stages that we test on our product

For Example :: we want to build a new Building

So for that system Design is here building design

Architecture design is like design of floors

Module design is like a design of Blocks/flats on every floor

After this kind of design’s we implement that project/Building.

Advantages- Time saving

Testing is in every stage

Disadvantages- No feedback system

No Risk Analysis

Not Good for Big projects

1. **Spiral model :**

This model is divided in four stages , we can not go previous stage but after complete four stage we can Re-start this cycle so this cycle is designed like a spiral ,that reason we call this is spiral model

Ex. This is used when project is risky and we test/update the project multiple times before release it.

Stages- Objective Deterioration and identify alternative solution, identify and Resolve risk , Develop next version of product, Review and plan for phases

Here , Radias of spiral = cost

Angle of Dimension= progress

Advantages- Good Risk handling

Good for Large projects

Flexible for all products

Customer satisfaction

Disadvantages- Complex , Expensive, Time consuming.

1. **Agile Model :**

This is most famous and mostly used in IT. Industry. This means Move quickly.

Ex. Most of E-commerce related companies use this.

This model is for every complex projects Because agile is divided large project in small chunks.

Every chunk is for that single development

This is a try to develop one iteration

After release of the project we take feedbacks of users and customers .

And Based on Feedback we enhanced the product and update/Re-release it.

And this feedback system is continued till the product is in the Market.

Advantages- Frequently Delivery

Face to face communication with clients,

Change Requirements are based on time.

Disadvantages- Maintenance problem

More risk of sustainability, extensibility