SDLC Models

-There are various software development life cycle models defined and designed which are followed during software development process. These models are also referred as "Software Development Process Models".

-Process for software development are as below

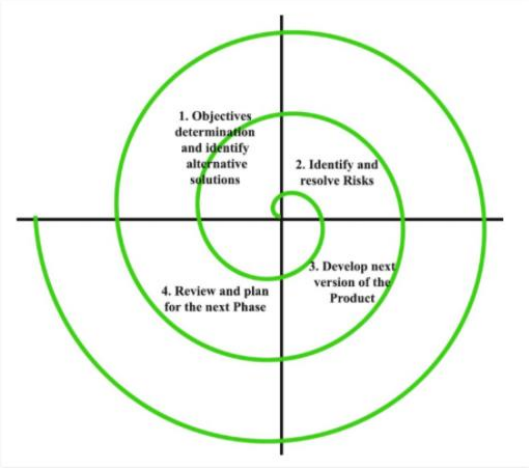
1. Waterfall Modell / Linear Sequential Model / Traditional Model
2. Spiral Model
3. V Model
4. Prototype Model
5. Agile

Spiral Model

-The spiral model is a risk-driven process model.
-This is also called as incremental risk oriented life cycle model
- This is called meta-model because it uses all other life cycle **models**(Waterfall and Prototype **models)**.

-The **spiral model** is suitable for **development** of technically challenging software products that are prone to several kinds of risks.

- As this is used for complex and critical projects then defiantly to implement any requirement Risk analysis requires through specific expertise.
-Example- Evolution of Microsoft Windows operating system.



Four main phases are: (four quadrants)

1. In the first phase , the requirements will be gathered.

2. Risks and alternative solutions will be identified

3. Third step will be software and software test are produced in the Development and Test phase

4. Finally in the fourth phase , the output of the project so far is evaluated and the next iteration is planned

Phases in detail-

Planning Phase/Determine objectives: Requirements are gathered during the planning phase. Requirements like ‘BRS’ that is ‘Business Requirement Specifications’ and ‘SRS’ that is ‘System Requirement specifications’.

Risk Analysis: In the **risk analysis phase**, a process is undertaken to identify risk and alternate solutions. A prototype is produced at the end of the risk analysis phase. If any risk is found during the risk analysis then alternate solutions need to be suggested.

Identify Risk : lack of experience , new technology

Engineering Phase/Development and Test : In this phase software is developed, along with testing.

Typical activities :

1. Design
2. Implementation
3. Testing
4. Maint

Evaluation phase/Plan for next iteration: In this phase customer review the developed requirement and continues to the next spiral.

Typical activities :
1.Develop project plan
2.Develop a test plan

When to use the Spiral-SDLC Model?

- When the project is large, complex and critical.
- When risk and costs evaluation is important.

Advantages:

- Because of Risk analysis phase, there is less chances of project to fail
- Functionality can be added in the next phase because of iterative nature of the process
- Good for critical/complex projects .
- Strong approval and documentation control.

Disadvantages:

- Risk analysis requires highly specific expertise
- Risk analysis has to be done right
- Costly to implement

- Time management may be difficult. Usually, the end date of a project is not known at the first stages