Software Development Life Cycle(SDLC)

What is software development life cycle?

An SDLC model is a structured approach used in software development to plan,design,build,test,deploy,and maintain software systems.It provides a framework for managing the entire software development process, from the initial concept to the final product.

Factors that are to be considered while choosing a SDLC model

* Project requirements
* Team Size
* Development Timeline
* Level of Flexibility

Types Of SDLC models

WaterFall Model:This is a linear model and sequential model where each phase follows the previous one in a cascading manner. The phases typically include requirements gathering,design,implementation,testing,deployment, and maintenance.

Important Information:- Waterfall model is suitable for projects where the requirements are well defined and stable, and there is minimal possibility of changes during the development phase.It is commonly used for projects that have a clear scope and fixed timeline.

Agile Model:Agile methodologies,such as Scrum or Kanban, promote iterative and incremental development.The project is divided into short iterations called sprints,and each sprint delivers a working software increment.It emphasizes adaptability,collaboration,and customer feedback throughout the development process.

Spiral Model: The Spiral model combines elements of both the waterfall model and iterative development.It follows a spiral pattern, with each cycle involving activities like planning, risk analysis,prototyping.development and evaluation.

It allows for early risk identification and accommodates changes during development cycle.

Important Information:This model is used in software development projects when there is a high level of uncertainty,and the project requires a risk-driven approach.

V-Model: The V-model is an extension of the waterfall model.It emphasizes testing and verification at each phase,corresponding to the development phase.For each development phase, there is a corresponding testing phase,ensuring that each requirement is validated.

Important Information: V-model lacks flexibility and also it requires upfront investments in planning and design.V-model can work well in medium and small sized projects where the requirements are stable, and the project timeline allows for sequential development and testing phases.

Iterative Model: The iterative model involves repeating a set of activities in cycles,with each cycle building upon the previous one.It allows for the incorporation of feedback and changes during each cycle,resulting in an improved product with each iteration.

Important Infromation:Iterative model is usually used in building large scale projects.Iterative model requires active communication, close collaboration, and feedback loops between the development team and stakeholders.It also necessitates the ability to plan and manage the development process in iterations