

(a) What is system development life cycle?

The system development life cycle is a project management model that defines the stages involved in bringing a project from inception to completion. Software development teams, for example, deploy a variety of systems development life cycle models that include - waterfall, spiral and agile processes.

System development life cycle can apply to technical and non-technical system.

In the most used cases, a system is an IT technology such as hardware and software projects program managers typically take part in SDLC, along with system and software engineers development team & end users.

Every hardware and software system will go through a development process which can be thought as an iterative process with multiple steps. SDLC is used to give a rigid structure

\$ framework to define the phases and steps involved in development of system.

(b) Explain the SDLC concept and model.

It is also called application development life cycle. This term is used in system engineering, information system and software engineering to apply to a range of hardware and software configuration. as a system can be composed of hardware only, software only or a combination of both.

\* Different types of SDLC models are :

1. Waterfall model
2. Spiral model
3. Iterative model
4. V-Model.

(a) Waterfall model :-

This SDLC model is the oldest and most straightforward. with this methodology, we finish one phase and then start the next. Each phase has its own mini-plan and each phase "waterfalls" into the next. The biggest drawback of this model is the small details left incomplete can hold up the entire process.

## 2. Spiral model :

The most flexible of SDLC models, the Spiral model is similar to the iterative model in its emphasis on repetition. The Spiral model goes through the planning, design, build and test phases over and over, with gradual improvements at each pass.

## 3. Iterative model :-

The iterative model is repetition incarnate. Instead of starting with fully known requirements, you implement a set of software requirements, then test, evaluate and pinpoint further requirements. A new version of software is produced with ease phase, over iteration. Rinse and repeat until the complete system is ready.

## 4. V-Shaped Model :-

Also known as the Verification and Validation model. The V-shaped model grew out of waterfall and is characterized by a corresponding testing phase for each development stage. Like waterfall, each stage begins only after the previous one has ended.