What is Software Development Life Cycle (SDLC)?

SDLC is a process that produces software with the highest quality and lowest cost in the shortest time. There are many different models for SDLC, some of them are Incremental model, Iterative model and Agile model.

## Incremental Model

In the incremental model, the system development is divided into many builds. The highest priority requirement of the system development is tackled first. The incremental process includes the phases of Requirement Analysis, Design, Code and lastly Test. In the Requirement Analysis phase, the requirements and specifications of the software are collected. In the Design phrase, the developers will add designs and functions for the software. In the Code phrase, the software will be coded and lastly, in the Test phrase, the software is deployed and debugging occurs.

The advantages of using incremental model is that the software will be made quickly. This model is also not expensive to proceed with. It is flexible and not costly to change the requirement and the scope while developing. The customer can also give comment or approval to each build.

The big disadvantage of this model is that each iteration phrase is rigid and does not overlap with each other. This means that solving one mistake in one build will need to solve the same mistake in all other builds and a lot of time is consumed.

## Iterative model

The iterative model is a way that breaks down the software development of a large application into smaller pieces. It is used when then the requirements of the complete system are clearly understood. The first stage of the iterative model is the planning phase. This phase helps the team in mapping out the specifications documents, establish software or hardware requirements and generally prepare for the upcoming stages of the cycle. The next phase is the analysis and design phase. In this phase, analysis is done to point out the appropriate business logic, while design is done to meet the needs of the analysis stage. For the third phase, it is the implementation phase. This is when the actual implementation and coding starts. All planning, specifications and design documents are coded and implemented in this phase. The testing phase starts after the implementation. This phase is for testing and debugging the software. Finally, there is the evaluation phase. It is the final phase of the iterative model where the whole team and the client will evaluate and check if the software fulfil the requirements of the specifications.

The advantage of this model is that some working functions can be developed early in the SDLC. Another advantage of using the iterative model is that testing and debugging is easy. It is also more cost effective to change the scope of the iterative model.

The disadvantage of this model is more resources may be required. This model also requires highly skilled resources for the skill analysis and it is not suitable for small projects.

## Agile Model

Agile model is a type of incremental model. Software is developed in incremental, rapid cycles. This results in small incremental releases with each release building on previous functionality. Each release is thoroughly tested to ensure software quality is maintained. After developing each iteration, the client can see if he is satisfied with that iteration.

Other than the advantages mentioned above in the iterative model, another advantage of the agile model is that the project is divided by short and transparent iteration. Risks are also minimized due to the flexible change process. The first version release of the software can be released quickly.

The disadvantage of this model is that the team is needed to be highly professional and client-oriented. New requirements may clash with the existing architecture of the software. With many changes and corrections, the project may exceed the expected time needed to finish the project.