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**Software Development Life Cycle**

Software Development Life Cycle (SDLC) is a framework that defines the steps involved in the development of software at each phase, SDLC defines the complete cycle of development i.e. all the tasks involved in planning, creating, testing, and deploying a Software Product.

### Planning stage

The planning or feasibility stage is the stage where professional software developers plan for an upcoming project. Carrying out a feasibility study, is the project worth developing and does it require lower costs and increase the profits.

During this planning stage, the experienced software engineers define the problem and scope of the existing systems and determine the objectives for building new systems

The idea to create an effective outline for the upcoming development cycle is to catch problems before they affect development.

Another major objective of the planning stage is to secure funding and resources needed to materialize the plan. The most important objective that the planning stage accomplishes is that it provides a timeline and cost of the project.

**Analysis**

During this phase, all the relevant information is collected from the customer to develop a product as per their expectation. Any ambiguities must be resolved in this phase only.

 Information like what the customer wants to build, who will be the end-user, what is the purpose of the product should be understood before building the project

This is also the stage where the first prototype ideas are discussed.  
In the analysis stage, the experienced software application engineers ;

* Define system requirements for prototypes
* Find the alternatives for existing prototypes
* Determine the user requirements

Once the requirement is clearly understood, the SRS (Software Requirement Specification) document is created. The SRS document will include all the specifications of software, hardware, and network requirements that will be required in the custom software to be built.

**Design**

In this phase, the requirement gathered in the SRS document is used as an input and software architecture that is used for implementing system development is derived. The list of software requirements developed in the previous software development phases is used to make design choices.

In the custom software design phase, one or more designs are created to achieve the desired result. Depending on the subject of the project, the design phase can include diagrams, flow charts, sketches, and schemas. Usually, once the design is finalized in this stage, it is hard to make changes in the later stage.

In the SDLC design stage, the dedicated software developers will first outline the details of the overall application along with the specific aspects of design like

* Databases
* User interface
* System interface
* Network and network requirements

The custom software development team will begin its work once the design is approved.

### Implementation or Coding

Implementation/Coding starts once the developer gets the Design document. The Software design is translated into source code. All the components of the software are implemented in this phase.

### Testing

Testing starts once the coding is complete and the modules are released for testing. In this phase, the developed software is tested thoroughly and any defects found are assigned to developers to get them fixed.

Retesting, regression testing is done until the point at which the software is as per the customer’s expectation. Testers refer SRS document to make sure that the software is as per the customer’s standard.

### Deployment

Once the product is tested, it is deployed in the production environment or first [UAT (User Acceptance testing)](https://www.softwaretestinghelp.com/what-is-user-acceptance-testing-uat/) is done depending on the customer expectation.

In the case of UAT, a replica of the production environment is created and the customer along with the developers does the testing. If the customer finds the application as expected, then sign off is provided by the customer to go live.

### Maintenance

After the deployment of a product on the production environment, maintenance of the product i.e. if any issue comes up and needs to be fixed or any enhancement is to be done is taken care by the developers.