**SOFTWARE TESTING –TASK-1: SDLC AND PROJECT AND PRODUCT DIFFERENCE**

**SDLC -SOFTWARE DEVOLPEMENT LIFE CYCLE**

The SDFC or Softwaredevelopment lifecycle is a methodology that explains the entire process of software development step by step. It gives the overview of entire process of software Develpment. The software development life cycle basically has six steps in it.

The above are six steps of the software development lifecycle which explain the entire process of the software development in an overview.

REQUIREMENT GATHERING:

The requirement gathering is the initial step of the software development lifecycle in which the requirement analysis is done and identify what are the requirements needed for the project or software and all the requirements needed for the project are collected before beginning of the project.

PLANNING:

In planning we plan about the entire scope of the project, what kind of output we need from the project, what are the goals of the project, in which way we need to use our resources all these things are done in planning phase. After the planning we enter the designing phase.

DESIGNING:

In the designing phase, the entire architecture of the project is designed which includes both low level and high-level designing. Software requirement specifications help the software developers to come up with the best architecture. Various designs are prepared by the developers in which the one which is most profitable is taken forward.

DEVELOPMENT:

The software development begins after the planning of the architecture. The development includes developing a standard code which can give the required output and review the code and make the required chances needed to make in code.

TESTING:

After development Testing is necessary for the smooth execution of the project. A minimum amount of testing is done in all steps of the cycle. Therefore, here all the errors or bugs need to be found out and fixed before deployment. The testing needs to be done so that all the errors can be removed. All the two different kinds of testing are done in this step-Manual Testing, Auto machine Testing.

The verification is done to check if the output is correct or not. Verification is a static process in which the code is not checked, just the working of the software is checked.

Validation is the process in which the project's product is checked, whether it is giving what is required or not. Validation is the dynamic process in which the code is also checked along with the product's working.

The mistake made by humans is an error and when the required output differs from the obtained output it is called a defect. The error leads to a defect which causes a failure of the system.

They are various Software testing technologies and methodologies which are:

* + Static testing
  + White box Testing
  + BlackBox Testing
  + Grey Box Testing

In Dynamic Testing they are four Levels-

* + Unit/compound/module testing
  + Integration testing
  + System Testing
  + User Acceptance testing

The unit testing and integration testing is done on system code and the system testing and the user acceptance testing is done after the execution.

* + UNIT TESTING:

In this testing every small component of the system is evaluated, and errors are detected individually. A unit is the smallest testable part in a program.

* + INTEGRATION TESTING:

In these two or more modules which are unit tested are tested together. After interaction of two units, we need to check whether the system is working properly or not.

* + SYSTEM TESTING:

The System testing is done to check whether the integrated component is working well on various systems and does it any more modifications.

* + USER ACCEPTANCE TESTING:

The user acceptance testing is a type of testing in which the testing is done based on user requirements and before deployment whether the product is working well at user level.

DEPLOYMENT:

Deployment is the final step of software development lifecycle. After completion of testing and removing all the bugs, erasing all the errors and making sure no defect is present, the project is deployed to the customer.

SDLC MODELS:  
They are basically two kinds of software development lifecycle models.

* + Sequential
  + Iterative

In sequential model all the steps are done one after the other the models which come under the sequential models are:

* + Waterfall model
  + V model

In iterative models, a few steps are repeated repeatedly as required, so they are called iterative models. Few of iterative models are:

* + Rad
  + Prototype
  + Spiral
  + Agile

**PROJECT AND PRODUCT DIFFERENCE:**

The software application developed is called a project if developed for a single customer. A project is only developed once as per the customer requirements. Some real time examples of a project are building a mobile app, website designing etc.

The software application which is developed for multiple users is called a product. The product is developed repeatedly as it is not for a specific user. Some real time examples of products are smart watches, AR-VR glasses.