* What is software Testing

Software testing is a part of software development process. Software testing is an activity to identify and detect the defects in the software. The objective of software testing is to deliver a quality product to the customer/client.

* What is software quality

Bug free

Delivered on time

Within budget

Meet requirement or expectations

Maintainable

* Project vs Product

If software application is developed for specific customer based on the requirement, then it’s called project.

If software application is developed for multiple customers based on the market requirement, then it’s called product.

* **Waterfall Model**

Advantages: -

Quality of the product will be good

Since requirement changes are not allowed, chances of finding bugs will be less.

Initial investment is less since testers are hired at the later stage of the process.

Preferred for small project where requirements are frozen.

Disadvantages: -

Requirement changes are not allowed.

If there is a defect in requirements that will be continued in later phases also.

Total investment is more because the time taking for rework on defect is time consuming which leads to high investment.

Testing phase will start only after coding phase.

* **Spiral model**

Spiral model is iterative model, and it will overcome drawbacks of waterfall model.

We follow spiral model whenever there is dependency on modules.

In every cycle new software/version will release to the customer.

Software will be released in multiple versions, so it is also called version control model.

* Static Testing vs Dynamic Testing

**Static Testing** is a type of software testing in which software application is tested without code execution. Static testing is done by Manual or automated reviews of code, requirement documents and document design are done to find the errors. The main objective of static testing is to improve the quality of software applications by finding errors in early stages of software development process.

* Verification vs Validation
* **System Testing**

1. GUI Testing
2. Useability Testing
3. Functional Testing
4. Non-Functional Testing

**c) Functional Testing**

* + 1. Object Properties Testing
    2. Database Testing / Backend Testing
    3. Error Handling Testing
    4. Calculations / Manipulations Testing
    5. Links existence and links execution
    6. Cookies & Sessions

1. **Object Properties Testing**

Object Properties testing: - Check the properties of object present on the application Example: - Enable, disable, visible, focus etc.…

1. **Database Testing / Backend Testing**

DML Operations (Data Manipulation Language – Select, insert, update, delete)

Data base testing is a grey box testing because we are sending data through GUI and doing validation that is a black box testing and in the data base we are validating the data through DML command so it is a white box testing so we can say data base testing includes both black and white box testing.

Proper Database Testing includes the following testing: -

Table and Column level validation (Column type, column length, number of columns etc.)

Relation between the tables (Normalization)

Functions

Procedures

Triggers, Indexes, Views etc.

1. **Error Handling Testing**

Tester verifies the error message is correctly displaying while doing some incorrect actions on the application

Error messages should be in simple and readable language

1. **Calculations / Manipulations Testing**

Tester should verify the calculations are working with positive and negative data.

1. **Links existence and links execution**

Where exactly the links are placed – Link Existence

Links are navigating to proper page or not – Links execution

Links are 3 types

Internal Links – Navigating to the same page

External Links – Navigating to a different page or window.

Broken Links – It doesn’t have any target page

1. **Cookies & Sessions**

Cookies – Temporary files created by browser while browsing the page through internet.

Cookie Testing is defined as a Software Testing type that checks Cookie created in your web browser.

Sessions – Sessions are time slot created by server. Session will be expired after some time of inactivity.

1. **Non-Functional Testing**

Following are the most common Types of Non-Functional Testing:

* Performance Testing
* Load Testing
* Failover Testing
* Compatibility Testing
* Usability Testing
* Stress Testing
* Maintainability Testing
* Scalability Testing
* Volume Testing
* Security Testing
* Disaster Recovery Testing
* Compliance Testing
* Portability Testing
* Efficiency Testing
* Reliability Testing
* Baseline Testing
* Endurance Testing
* Documentation Testing
* Recovery Testing
* Internationalization Testing
* Localization Testing