**Software Testing 03-02-2025**

**Testing:**

* Testing is done to identify the bugs/errors of the product/project.
* Testing is done to check whether the project/product meets the requirements of the customer.

**Objectives of the testing:**

* We have to ensure the quality of the product/project.
* To ensure whether the software meets the specific requirements or not.
* To ensure the product/project is user-friendly or not.
* To minimize the risk of failures in production.
* To validate the software functionality, reliability and robustness.
* To detect errors/bugs.

**What is the need of the testing?**

* To ensure the quality of the product/project.
* **Quality:** Here, the quality defined as whether the developed software meets the requirements of the customer.
* To ensure the system is secure from potential threats.
* Fixing the bugs after release of the product/project is more expensive.

**Software Testing:**

* It is the part of the SDLC (Software Development Life Cycle).
* Software testing is done to identify the bugs/errors in the developed software.

**Need for Software Testing?**

* We have to deliver the good quality software product/project.
* To check whether it is satisfying the needs of the customer or not.
* To check whether the developed software is user-friendly or not.
* To minimize the maintenance cost.
* To avoid the negative feedbacks.
* To reduce the risk of failures in production

**Quality Software:**

* The quality software is ensured, when it is completely error free/bug free.
* And, we have to deliver the software in-time.
* We have developed a user-friendly software.
* The developed software should be maintainable.
* To build a quality software, we have to meet the specific requirements of the customer.

**Difference between Product and Project:**

**Product:**

If the software is developed based on the requirements of the multiple customers to ensure the quality of the product in the market is the product.

**Project:**

If the software is developed based on the requirements of the single customers to ensure the quality of the project in the market is the project.

**Error:** An incorrect human action. Error raises due to several reasons like design issues, coding issues, or system specification issues and leads to issues in the application.

**Bugs/Defects:** Deviation from expected behaviour to actual behaviour of the product/project. The most common type of bug is crash.

**Failure:**  If any bug/error raised during the execution of the product/project at the end-user side is called failure.Failure is detected by the end-users.

**Why the software has the bugs?**

* Due to programming errors.
* Changing requirements frequently.
* Software complexity
* Due to Unskilled testers.