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PRACTICAL No:- 2

Description:- Unit testing is a level of software testing where individual units/components of software are tested.

Aim: To write a test case for unit testing.

Unit Testing is done during the development of an application by the developer. The purpose is to validate that each unit of software code performs as expected. It is a first level of testing done before integration testing in SDLC, STLC, and V Model. It is a white box testing technique that is usually performed by the developer.

Unit Testing are important because:

- Its help to fix bugs early in the development cycle and save costs.
- It helps the developer to understand the code base and enables them to make changes quickly.
- Good unit testing serve as project documentation.
- It also help with code re-use and migrate both code and your test to your new project. Tweak the code until the test run again.

Unit testing are of two types Manual and Automated. Unit testing is commonly automated but may still be performed manually.

Unit Testing techniques ~~include~~ are used in unit testing that are listed below:

- Statement Coverage
- Decision Coverage
- Branch Coverage
- Condition Coverage
- Finite State Machine Coverage

There are several ~~etc~~ automated tools available to assist with unit testing.

- JUnit
- NUnit
- JMockit
- EMMA
- PHPUnit

Some of the benefits of unit testing they are:

- It increase confidence in changing/maintaining code.
- Codes are more reusable.
- Development is faster and debugging is easy.
- Codes are more reliable and the cost of fixing a defect detected during unit testing is lesser compare to defect at higher level.