Ex No: 11

Unit Testing

<u>Aim:</u> To write a simple java program and perform unit testing.

Procedure:

Unit Testing is a type of software testing where individual units or components of a software are tested. The purpose is to validate that each unit of the software code performs as expected.

<u>JUNIT</u>

It is an open source unit testing framework for JAVA. It is useful for Java Developers to write and run repeatable tests. Erich Gamma and Kent Beck initially develop it.

JUNIT Installation

- Install JAVA
- Create "JAVA_HOME" environment variable that points to the java installation folder
- Add Java Compiler path to "System Path"
- Download junit-4.10.jar file
- Store it in the folder "c:\junit"

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JUNIT Environment Setup

- Create 'JUNIT_HOME' environment variable to point to the location where "junit-4.10" is stored.
- Create "CLASSPATH" variable that contain the given value

%CLASSPATH%;%JUNIT_HOME%\JUnit4.10.jar;.;

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Testing the Code

- Use Test, Assert and Test Runner of Junit framework is used.
- Implement Test and Assert class in the source code that is to be tested.
- Add test case using '@Test' directive
- Use 'assertEquals()' method to test a function
- Implement runner class in the code that runs the test.
- Use 'runClasses' method to execute the code
- Using returned value from 'runClasses' method get number of test runs and number of test failures

Result:

Thus Unit Testing is performed on a Java Program using JUNIT and the results are successfully verified.