Lab – 6

Aim: Using JUNIT for conducting unit test over GIT-HUB

Description:

Visual Studio Code:

Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and Mac-OS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded GIT.

- Visual Studio Code features a lightning fast source code editor, perfect for day-to-day use. With support for hundreds of languages,
- VS Code helps you be instantly productive with syntax highlighting, bracket-matching, auto-indentation, box-selection, snippets, and more.
- Intuitive keyboard shortcuts, easy customization and community-contributed keyboard shortcut mappings let you navigate your code with ease.
- Customize every feature to your liking and install any number of third-party extensions.
- VS Code includes enriched built-in support for Node.js development with JavaScript and Type Script, powered by the same underlying technologies that drive Visual Studio.
- VS Code also includes great tooling for web technologies such as JSX/React, HTML, CSS, SCSS,, and JSON
- Architecturally, Visual Studio Code combines the best of web, native, and language-specific technologies.
- Visual Studio Code includes a public extensibility model that lets developers build and use extensions, and richly customize their edit-build-debug experience.

Installation of Visual Studio Code:

Step 1: Visit the official website of the Visual Studio Code using any web browser like Google Chrome, Microsoft Edge, etc.

Step 2: Press the "Download for Windows" button on the website to start the download of the Visual Studio Code Application.

Step 3: When the download finishes, then the Visual Studio Code icon appears in the downloads folder.

Step 4: Click on the installer icon to start the installation process of the Visual Studio Code.

Step 5: After the Installer opens, it will ask you for accepting the terms and conditions of the Visual Studio Code. Click on I accept the agreement and then click the Next button.

Step 6: Choose the location data for running the Visual Studio Code. It will then ask you for browsing the location. Then click on Next button.

Step 7: Then it will ask for beginning the installing setup. Click on the Install button.

Step 8: After clicking on Install, it will take about 1 minute to install the Visual Studio Code on your device.

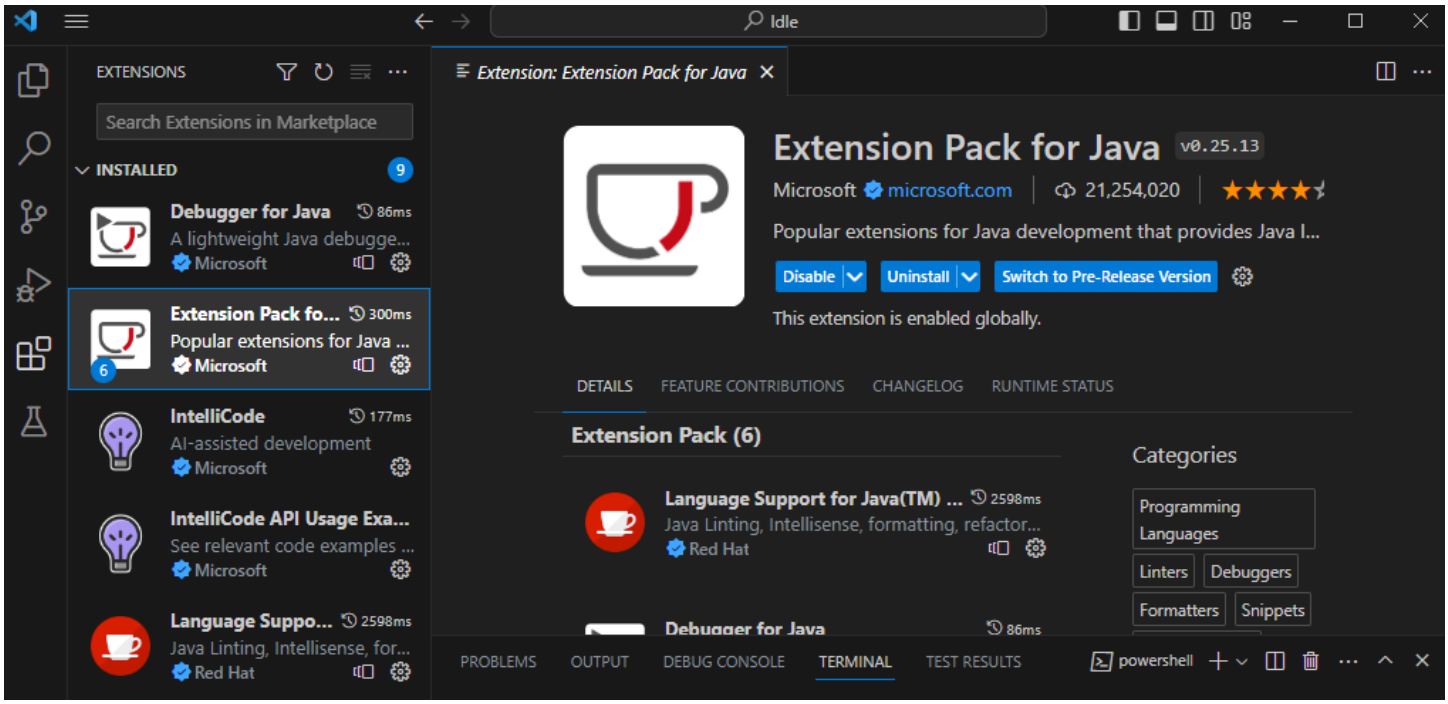
Step 9: After the Installation setup for Visual Studio Code is finished, it will show a window like this below. Tick the "Launch Visual Studio Code" checkbox and then click Next.

Step 10: After the previous step, the Visual Studio Code window opens successfully. Now you can create a new file in the Visual Studio Code window.

Performing Unit Test using JUNIT in VS-Code:

- Open Visual Studio Code editor
- Select Extensions icon from left tool bar or use short cut key (Ctrl + Shift + X)
- A Tab opened after tool bar displaying Extensions Installed button, Recommended button
- Also text bar for searching installed extensions with filter and refresh options

- Select “Extension Pack for Java” from recommended list
- Select “Install” button to download extension pack as built in library for VS-Code
- The pack includes features as
    - Extension pack includes
    - Java Language Library
    - Java Debugger
    - Test Runner for JUNIT/TestNG tool
    - Maven for Java
    - Project Manager for Java
    - IntelliCode-AI assisted



Testing using JUNIT:

Create a folder on desktop named "IDLE"

open explorer with IDLE folder selction

use popup window to add new file with name "Myprg.java"

enter the following code in Myprg.java

```
public class bvr1
{
   public String pword()
   {       return ("Hello");}
}
```

save the file

select testing tool in tool bar ...currently no testing tool associated

select enable java tests button

The installation of JUNIT package begins automatically

wait until installation finished

Now you can watch LIB folder under your directory"IDLE" with library added

junit-platform-console-standalone-1.10.0.jar

Now create a file named "MyprgTest.java" begin typing code as

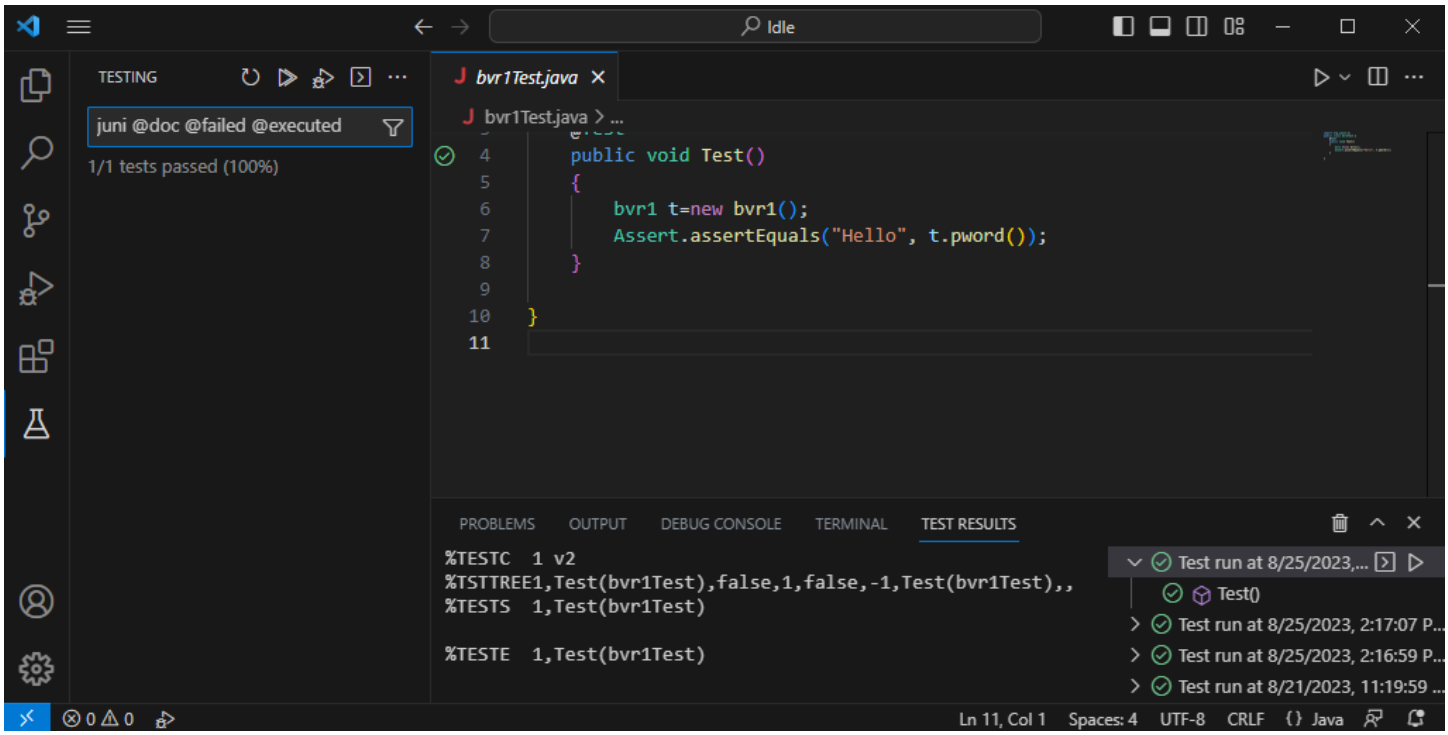
```
import org.junit.*;
public class bvr1Test {
   @Test
   public void Test()
   {
      bvr1 t=new bvr1();
      Assert.assertEquals("Hello", t.pword());
   }

}
```

VSCode assists you with opening methods automatically

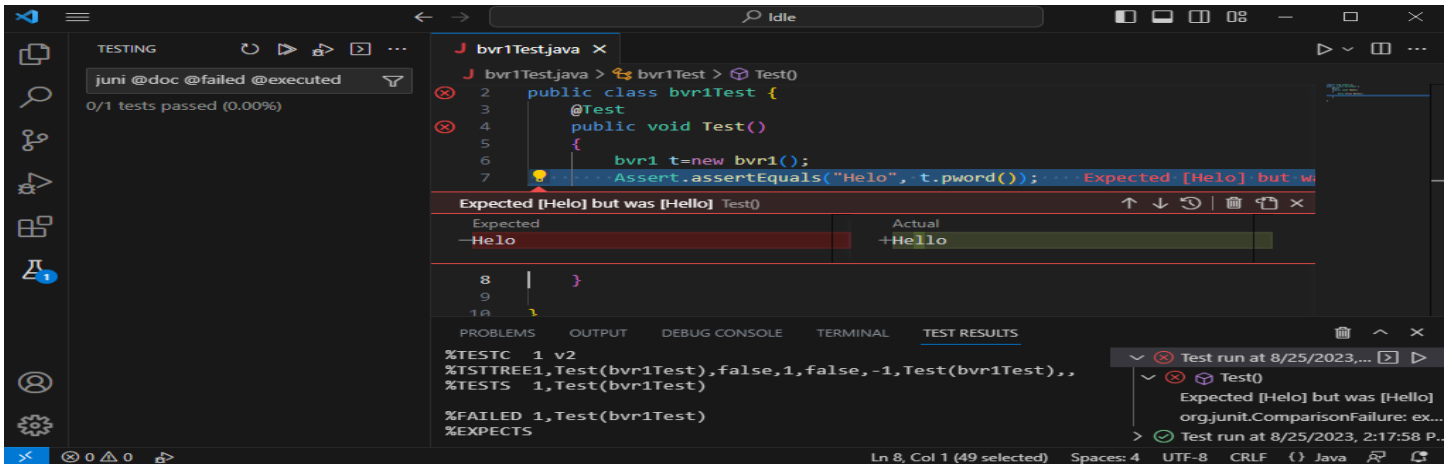
Select testing tool in toolbar markers appear in your MyTest.java file

Choose only Test() method block and click process begins and reports status of results



Now go to MyTest.java file and change argument value “Hello” to “Helo”

Perform testing again JUNIT detects and reports errors in code as follows



Generating Test failed report at console.

Similarly we can check any java project module in this environment effectively.