Roll no. B055

Experiment No. 1

Date:

Aim: To install java on windows 10, set system variable and test it by making a sample program.

Theory: Java is a high-level, class-based, object oriented programing language that is designed to have as few implementation dependencise as possible. It is a genral-purpose programing language intended to let programmers write once, run anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without the need of recompilation. Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of the underlying computer architect The syntax of Java is similar to c and c++, but has fewer low-level facilities than either of them. The Java runtime provides dynamic capabilities (such as reflection and runtime code modification) that are typically not available in traditional compiled languages.

☆ It is used for:

- Mobile application
- Desktop application
- Web servers and application servers
- Games
- Database connection

Oracle Procedure:

☆ Check if Java is Installed

- Multiple java versions on the same system can cause conflicts, as applications may attempt to use different versions. Additionally it poses significant security risks over time.

To check version:

Step 1: Type cmd in Windows search bar.

Step 2: Open the command prompt.

Step 3: Enter the following command to check the Java version in Windows:

java - version

Procedure:

★ Download Java for Windows 10:

Step 1: Open a browser and navigate to the Oracle Java Downloads page.

Step 2: Select the latest JDK version. In this example, the latest available version is JDK 21.

Step 3: Access the Windows tab.

Step 4: Click the x64 Installer download link.

★ Install Java on Windows 10:

Step 1: Double-click on the downloaded Java file to start the installation.

Step 2: Once the installation wizard welcome screen appears, select Next to proceed.

★ Set Environmental Variables in Java:

Step 1: Add Java to system Variable

This step ensures that Java is accessible from the command line in any directory.

1. Open the start menu and search for environment variable
2. Select Edit the system enviroment variables.
3. Select Advanced in the System Properties window.

4. Click Envieronment Variables.
5. Select the Path variable in the System variables category and click edit.
6. Click New
7. Enter the path to the Java bin directory.
8. Click OK to save the changes and exit the variable editing window.

Step2: Add JAVA_HOME Variable

- Some applications require the Java_Home variable to point to the JDK installation directory. Follow the step below to create a the variable:

1. Click New under the System variables category to create a new variable.
Create a new JAVA_HOME variable in Windows.

2. Name the variable JAVA_HOME

3. Enter the path to your Java JDK directory in the variable value field.

4. Click OK

★ Test Java Installation

- Verify that Java is installed by entering the Java -version command in the command prompt:

If installed correctly, the command outputs the Java version. To ensure everything works, write and compile a simple Java program by following the steps the sections below.

Step 1: Write Test Java Script:

1. Open a text editor like Notepad or Notepad++ and create a new file.
2. Enter the following code and click Save:

```
class HelloWorld {
    public static void main (String args[]) {
        System.out.println("Hello World!");
    }
}
```

Step 2: Compile Test Java Script:

Access the windows command prompt and complete the following steps:

1. Navigate to the directory where your Java file is saved.

2. Use the following command to compile the program:

javac myprogram.java

Replace my.program.java with your file name.

After a successful compilation, the program generates a.class file in the same directory.

Run the progaram using the following syntax:
java HelloWorld

Conclusion: