

## Programming Fundamentals – Assignment 01

### 1. Fill in the blanks in each of the following sentences

about the Java environment:

- a. The **java** command from the JDK executes a Java application.
- b. The **javac** command from the JDK compiles a Java program.
- c. A Java program file must end with the **.java** file extension.
- d. When a Java program is compiled, the file produced by the compiler ends with the **.class** file extension.
- e. The file produced by the Java compiler contains **bytecode** that are executed by the Java Virtual Machine.

### 2. What is the task of the compiler in programming languages?

- The Source code given in a Java or any programming language is converted to Byte code.

### **3. What is the difference between C and Java languages?**

C is a low level language and can do more and perform faster because it is close to machine code. Java is a high level language that is Interpreted and is in Java where the code is first transformed into Byte code and the executed by Java interpreter (JVM).

### **4. If we compile a Java program in the Windows environment, can we run that program in any other operating system? Explain your answer briefly.**

- Yes.
- The class file is created to run in JVM in any OS.

### **5. What is the difference between Java interpreter (in JVM) and O/S interpreter (Command Interpreter)?**

- Java interpreter is a computer program (system software) that implements the Java virtual machine and runs java application.
- A command interpreter is the part of a computer operating system that understands and executes commands that are entered interactively by a human being or from a program.

**6. What is the meaning of “Compile” in Java language? And why is that necessary?**

- A Java compiler is a program that takes the text file work of a developer and compiles it into a platform independent Java file.

**7. What are the steps needed to create and run a Java program in a Linux environment?**

1. Open the Linux terminal.
2. Request a source code file (Using a text editor)
3. Type the Source code and save.
4. Compile the Source code file (javac Example.java).
5. Run the Program (java Example).

**8. Akila creates a Java program in his HP laptop machine. He gave the compiled code (Class File) to Manoj to run that program in his computer. But Manoj’s laptop brand is Dell. When Manoj tries to run the program, it didn’t work. What can be the reason for that?**

- The difference of the laptop brand is not an issue.
- It may be because Manoj may not have installed JVM and Java runtime in his laptop.

**9. Explain the command “java Example” that we write in Terminal.**

- Java : means (JVM) Java virtual machine.  
Example : means the Byte code.

**10. Which of the following main method declarations are valid (Runs without errors) ?**

- A. `public static void main(String args[]){ }`  **Run**
- B. `public void main(String args[]){ }` **Error**
- C. `static void main(String args[]){ }` **Error**
- D. `public static void main(String args){ }` **Error**
- E. `void main(String args[]){ }` **Error**
- F. `public static void main(){ }` **Error**
- G. `static public void main(String args[]){ }` **Run**
- H. `void main(String args){ }` **Error**
- I. `public static main(String args){ }` **Error**
- J. `public static void main(String []){ }` **Error**
- K. `static void public main(String args){ }` **Error**