Java Assignment – Date: 8th November 2023

1. What is Java, and why is it popular in programming?

  Java is a widely-used programming language for coding web applications. It has been a popular choice among developers for over two decades, with millions of Java applications in use today. Java is a multi-platform, object-oriented, and network-centric language that can be used as a platform in itself.

2. What is the difference between JDK, JRE, and JVM in Java?

  JDK is the development platform, while JRE is for execution. JVM is the foundation, or the heart of Java programming language, and ensures the program's Java source code will be platform-agnostic. JVM is included in both JDK and JRE – Java programs won't run without it.

3. How do you declare a variable in Java, and what are the data types available?

  Declaring (Creating) Variablestype variableName = value; Where type is one of Java's types (such as int or String), and variableName is the name of the variable (such as x or name). The equal sign is used to assign values to the variable.
There are two types of data types in Java:

- Primitive data types: The primitive data types include boolean, char, byte, short, int, long, float and double.
- Non-primitive data types: The non-primitive data types include Classes, Interfaces, and Arrays.

4. What is the difference between 'int' and 'double' data types in Java?

The int is a 32 bit data type which can be used to store integer and double is 64 bit data type used to store floating point numbers that is numbers which has something after decimal point.

5. How do you write a basic "Hello, World!" program in Java?

```
Class HelloWorld
    {
        public static void main(String[] args)
            {

                System. out. println("Hello World!"); // Hello World!
            }
    }
```

6. What is a class in Java, and how do you define one?

  A class in Java is a logical template to create objects that share common properties and methods. Hence, all objects in a given class will have the same methods or properties.

7. How do you create an object from a class in Java?

    When we create an instance of the class by using the new keyword, it allocates memory (heap) for the newly created object and also returns the reference of that object to that memory. The new keyword is also used to create an array.
The syntax for creating an object is:

        ClassName object = new ClassName();

8. What is the purpose of the "public static void main(String[] args)" method in Java?

    The keyword public static void main is the means by which you create a main method within the Java application. It's the core method of the program and calls all others. It can't return values and accepts parameters for complex command-line processing.

9. How do you use if-else statements for conditional logic in Java?

Syntax:
 If(condition)
{
                // code if condition is true.
}
 Else
{
                //code if condition is false.
}

10. What is a for loop, and how do you use it to iterate over a collection or perform repetitive tasks in Java?

For loops in Java are used to repeat a block of code a certain number of times. The basic structure of a for loop includes an initialization, termination condition, and an increment or update statement. Increment statement is executed after each iteration.