

Assignment 1

1. What is JDK? JRE? JVM?

JDK – Java Development Kit, JRE- Java Running Environment, JVM– Java virtual Machine.

- 1. JDK is is a software development environment used for developing Java applications and applets.**
- 2. JRE provides the minimum requirements for executing a Java application; it consists of the Java Virtual Machine (JVM), core classes, and supporting files.**
- 3. JVM is specifically responsible for converting bytecode to machine-specific code and is necessary in both JDK and JRE. It is also platform-dependent and performs many functions, including memory management and security**

2. What is java compiler?

A special program that converts (translates) source code (. java file) into bytecode (. class file).

3. Why is java platform independent?

Java is platform-independent because it uses a virtual machine. The Java programming language and all APIs are compiled into bytecodes. Bytecodes are effectively platform-independent.

4. What is IDE? Why is it important for developers?

(IDE) is a software suite that consolidates basic tools required to write and test software. Developers use numerous tools throughout software code creation, building and testing.

5. Is java case sensitive?

Yes

6. What do the following key words do?

static, final, public, private, void, null, package, Class, new

Static:

The static keyword in Java is used with a variable, method or a block. It is used to share the same variable or a method within a class.

Final:

The final keyword in Java is used to restrict the variable, class, or methods in Java. If we declare a variable as final, then we can't change its value again.

If we use the final keyword with a class, then no other class can inherit the final class. When you declare a method as final then the method can not be overridden in the child

class:

The class keyword in Java is used to declare a class in Java. A class is a collection of methods and data members.

Public:

The public keyword in Java denotes the access specifier in Java. This keyword can be used with class, constructor, variable, interface or a method.

If we use the public keyword with any entity that it can be accessed from anywhere. It has the widest scope as compared to all the access specifiers of Java.

Private:

The private keyword in Java is another access specifier that can be used with a class, variable or a method.

Any entity declared as private can only be accessed within the class itself in which it has been declared. It can't be accessed from outside that class.

It has the narrowest scope and is the most restricted access specifier in Java.

void :

The void keyword in Java is useful with methods to specify that the method returns nothing. There is no return value of the method.

Null:

The null keyword in Java is used to indicate the null value. The null value represents a reference variable.

If we declare a reference variable as null then it refers to nothing. If we declare a variable as null then the object refers to nothing.

Package:

The package keyword in Java is used to create a package. A package is a collection of same type classes and interfaces for better readability and proper distribution of multiple classes.

To include a class in a package we write it on the very first line of the Java program.

Class:

The class keyword in Java is used to declare a class in Java. A class is a collection of methods and data members.

New:

The new keyword in Java is used when we instantiate a class or create objects of a class. Creating objects with a new keyword is the most common way of creating objects.

7. What is primitive type and reference type?

The primitive types are boolean , byte , char , short , int , long , float and double . All other types are reference types, so classes, which specify the types of objects, are reference types.

8. Is parameter passed by value or reference?

Pass by value.

9. What is the output: `System.out.println(1 > 0 : "A":"B");`

Error; it should be `System.out.println(1 > 0 ? "A":"B");`

10. How to define constants in java?

Use the word static and final.

11. What is String? Is it primitive type?

It is a sequence of characters. NO, it is an Object.

12. How to check if a String is representing a number?

Double. `parseDouble()`

13. Write a program to implement the following activity diagram:

```
import java.util.Scanner; // Import the Scanner class
```

```
class Main {
    public static void main(String[] args) {
        Scanner myObj = new Scanner(System.in);

        System.out.println("Enter your number");
        while(true){

            String userInput = myObj.nextLine();
            if (userInput.equals("q")){
                System.out.println("quit the game");
                System.exit(0);
            }

            int userNumber = Integer.parseInt(userInput.trim());
            if(userNumber > 0)
                System.out.println("Your input number is: " + userNumber);
            else
                System.out.println("Your input number is <= 0, try one more time!");
        }
    }
}
```

```
    }  
  }  
}
```

14. Write a program to merge two array of int.

```
public int[] mergeArr(int[] a, int[] b ){  
    int a1 = a.length;  
    int b1 = b.length;  
    int[] c = new int[c1];  
    System.arraycopy(a, 0, c, 0, a1);  
    System.arraycopy(b, 0, c, a1, b1);  
    return Arrays.toString(c);  
}
```

15. Write a program to find the second largest number inside an array of int.

```
public int secondLargest(int[] arr){  
  
    int size= arr.length;  
    Arrays.sort(arr);  
  
    return arr[ size -2];  
}
```