Assignment 1

1. What is JDK? JRE? JVM?
   JDK: java development kit. It is a software development environment used for developing java applications. It includes the JRE, an interpreter, a complier, an archiver, a documentation generator.

   JRE: Java runtime environment is a set of components to create and run a java application. It contains JVM, Java class libraries and the java class loader.

   JVM: Java virtual machine enables a compute to run Java program that are compiled to java bytecode.

2. What is java compiler?
   It is a program that takes source file and compiles it into to bytecode file.

3. Why is java platform independent?
   The JVM executes Java code. Java program and all APIs are compiled into bytecodes, and bytecodes are effectively platform-independent. The JVM takes care of the differences between the bytecodes for the different platforms.

4. What is IDE? Why is it important for developers?
   integrated development environment is a software suite that consolidates basic tools required to write and test software.
   It increases programmer productivity by combining common activities of writing software into a single application: editing source code, building executables and debugging.

5. Is java case sensitive?
   Yes, java is case sensitive.

6. What do the following key words do?
   static: it is a non-access modifier used for methods and attributes. Static method can be called without instantiating a class object. Static variable get created when the first instance of the class gets created. There is only a copy of it and all the instances of this class share it.

   Final: used on class method and variable. A final class cannot be inherited. A final method cannot be overridden by subclass, and a final variable cannot be change value.

   Public: used on attributes, method and class. Can be accessed anywhere

   Private: access modifiers like public, can be accessed only within class

Void: method declared as void have no return value

Null: keyword for literal values

Package: used to specify a directory structure to which the current source file must

belong. Declares a name space for the java class

Class: class keyword is used to declare a new java class

New: used to create an instance of the class.

7. What is primitive type and reference type?
Primitive types are basic types of data and the variable store the actual value.
Non-primitive data types are reference types. It points to an object of a class. It contains the address of dynamically created objects.

8. Is parameter passed by value or reference?
   By value

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

10. How to define constants in java?
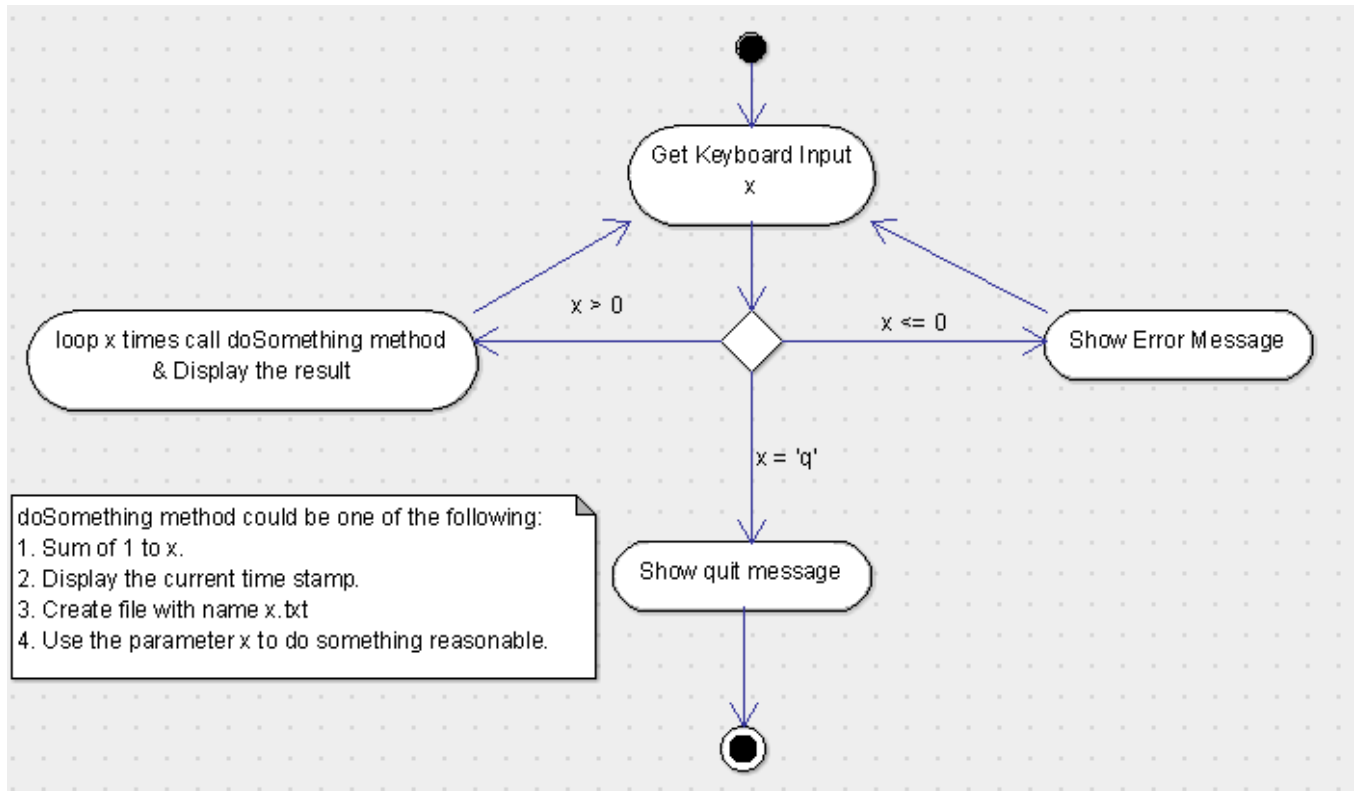   Use final keyword to declare a variable.

11. What is String? Is it primitive type?
    String is an object represents a sequence of Characters. And it is immutable the char[] was declare as final. It is not a primitive type.

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

```
public static boolean isdigit(String s){
    try{
        Integer.parseInt(s);
        return true;
    }catch (NumberFormatException e){
        return false;
    }
}
```

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

Get Keyboard Input
x

x > 0

loop x times call doSomething method
& Display the result

x <= 0

Show Error Message

x = 'q'

Show quit message

doSomething method could be one of the following:
1. Sum of 1 to x.
2. Display the current time stamp.
3. Create file with name x.txt
4. Use the parameter x to do something reasonable.

see Program1.java in programs folder

14. Write a program to merge two array of int.
see Program2.java in programs folder

15. Write a program to find the second largest number inside an array of int.
see Program3.java in programs folder