JAVA Assignment

1) JVM: JVM stands for Java Virtual Machine, It is basically an interpreter which interprets the compiled Java code and converts it into **java byte code**. JVM is a software which was created in C language, It plays a huge role in making java platform independent as instead of converting source code into machine understandable binary language the JVM converts the source code into java byte code which can be interpreted on any platform.

2) Modifiers: There are several types of modifiers such as:
   a) Access Modifiers:
      i) Public: This class can be accessed by any other class.
      ii) Private: Contents of the class can only be accessed by the class in which it is declared.
      iii) Default: This type of content is only accessible in the package where it is declared.
      iv) Protected: Contents of this class can only be accessed in the same package, classes and sub classes.
   b) Non – Access Modifiers:
      (1) For classes:
         (a) Final: When used this modifier restricts any other class to inherit the original class.
         (b) Abstract: When used it restricts the user to create any object with this class.
      (2) For attributes and methods:
         (a) Final: Attributes and methods mentioned inside this cannot be modified or overridden
         (b) Static: Attributes and methods belong to a class rather than an object.
         (c) Abstract: In this case the main class does not contain any methods, instead the methods are called off and a subclass is inherited which has defined the method.

3) Wrapper class: Wrapper classes allow to use the primitive data types as objects. Following table contains the primitive data types and their wrapper classes-

Primitive Data Types	Wrapper Class
Byte	Byte
Short	Short
Int	Int
Long	Long
Float	Float
Double	Double
Boolean	Boolean
Char	Character

Sometimes you need to use the wrapper objects in wrapper class for collections like array list where primitive types cannot be used.

4) OOPS Concepts:
   a) Object: An object is an instance of a class. It takes up some memory and can be refereed to any entity that has a state.
   b) Class: Collections of one or more than one objects can be referred to as class.
   c) Inheritance: When an object acquires all the properties of its parent object, it is known as inheritance.
   d) Polymorphism: When one task is performed in different ways it is known as polymorphism. Polymorphism can be achieved with methods like overloading and overriding.
   e) Abstraction: Hiding the inner details and performing a task, also showing functionality is known as abstraction.
   f) Encapsulation: Storing code and data inside a single unit is known as encapsulation
   g) Coupling: When a class has the information about another class, it is known as a strong coupling.
   h) Cohesion: It refers to the level of a component which is used to perform a certain task.

i) Association: It represents the relationship between different objects. There are four types of association method mentioned below:
    i) One to One
    ii) One to Many
    iii) Many to One
    iv) Many to Many