Assignment-1: Theory

1. What is Abstraction?

A: Abstraction is the process of taking away or removing characteristics from something in order to reduce it to a set of essential characteristics. Abstraction is related to both encapsulation and data hiding.

2. What is Encapsulation?

A: Encapsulation in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit.Declare the variables of a class as private. Provide public setter and getter methods to modify and view the variables values.

3. What is JDK?

A: The **Java Development Kit (JDK)** is a software development environment that offers a collection of tools and libraries necessary for developing Java applications. You need the JDK to convert your source code into a format that the Java Runtime Environment (JRE) can execute.

4. What is JVM?

A: A Java Virtual Machine(JVM) is a [virtual machine](https://en.wikipedia.org/wiki/Virtual_machine" \o "Virtual machine) that enables a computer to run [Java](https://en.wikipedia.org/wiki/Java_(software_platform)" \o "Java (software platform)) programs as well as programs written in [other languages](https://en.wikipedia.org/wiki/List_of_JVM_languages" \o "List of JVM languages) that are also compiled to [Java bytecode](https://en.wikipedia.org/wiki/Java_bytecode" \o "Java bytecode). The JVM is detailed by a [specification](https://en.wikipedia.org/wiki/Specification_(technical_standard)" \o "Specification (technical standard)) that formally describes what is required in a JVM implementation. Having a specification ensures interoperability of Java programs across different implementations so that program authors using the [Java Development Kit](https://en.wikipedia.org/wiki/Java_Development_Kit" \o "Java Development Kit) (JDK) need not worry about idiosyncrasies of the underlying hardware platform.

5. Define Inheritance

A: Inheritance in Java is a mechanism in which one object acquires all the properties and behaviors of a parent object. ... The idea behind inheritance in Java is that you can create new classes that are built upon existing classes. When you inherit from an existing class, you can reuse methods and fields of the parent class.

6. How java achieved platform independence?

A: Since every Java program runs on Java virtual machine, same byte code can be run on any platform. key is byte code is not machine instruction they are platform independent instruction to JVM.In summary combination of byte code and JVM makes Java program platform independent.

7. Write the syntax of main function.

A: public static void main(String[] args)

{

//body

}

1. What is conditional operator?

A: The conditional operator is a ternary operator (it has three operands) and is used to evaluate boolean expressions, much like an if statement except instead of executing a block of code if the test is true, a conditional operator will assign a value to a variable.

9. How many data types in java?

A: There are eight primitive data types in java and they are: byte, short, int, long, float, double, boolean, and char. The java.lang.String class represents character strings.

10. What is constant? How it is declared?

A: A constant is a variable whose value cannot change once it has been assigned. Java doesn't have built-in support for constants, but the variable modifiers static and final can be used to effectively create one. Constants can make your program more easily read and understood by others.