Assignment-3 Theory

1. What is Inheritance?

A: Inheritance in Java is a mechanism in which one object acquires all the properties and behaviors of a parent object. It is an important part of OOPs (Object Oriented programming system). The idea behind inheritance in Java is that you can create new classes that are built upon existing classes.

2.What is Multiple Inheritance?

A: Object Oriented Programming provides a user the feature of multiple inheritance, wherein a class can inherit the properties of more than a single parent class. In simpler terms, multiple inheritance means a class extending more than one class.The programming language of java is unable to utilise this feature directly. It can be achieved indirectly through the usage of interfaces.

3. What is the use of Super keyword?

A: The super keyword refers to superclass (parent) objects. It is used to call superclass methods, and to access the superclass constructor. The most common use of the super keyword is to eliminate the confusion between superclasses and subclasses that have methods with the same name.

4. What is abstract method?

A: A method that is declared using the keyword abstract is called an abstract method. Abstract methods are declaration only and it will not have implementation. It will not have a method body. A Java class containing an abstract class must be declared as abstract class. An abstract method can only set a [visibility modifier](https://javapapers.com/core-java/access-modifiers-in-java-explain/" \o "Access Modifiers In Java), one of public or protected. That is, an abstract method cannot add [static](https://javapapers.com/core-java/explain-the-java-static-modifier/" \o "Java Static) or [final](https://javapapers.com/core-java/explain-the-final-keyword-in-java/" \o "Java Final Keyword) modifier to the declaration.

5. What is abstract class?

A: A Java class that is declared using the keyword abstract is called an abstract class. New instances cannot be created for an abstract class but it can be extended. An abstract class can have abstract methods and concrete methods or both. Methods with implementation body are concrete methods. An abstract class can have static fields and methods and they can be used the same way as used in a concrete class.

6. What is the use of final modifier?

A: When a final modifier is used with a class then the class cannot be extended further. This is one way to protect your class from being subclassed and often sensitive classes are made final due to security reason.

7. What is interface? Write the syntax interface.

A: An interface is an abstract "class" that is used to group related methods with "empty" bodies: To access the interface methods, the interface must be "implemented" (kinda like inherited) by another class with the implements keyword (instead of extends ).

Syntax:

interface <interface\_name>

{

// declare constant fields

// declare methods that abstract

// by default.

}

8. What is package?

A: A package is a namespace that organizes a set of related classes and interfaces. Because software written in the Java programming language can be composed of hundreds or thousands of individual classes, it makes sense to keep things organized by placing related classes and interfaces into packages.

9. What is exception?

A: An exception is an unwanted or unexpected event, which occurs during the execution of a program i.e at run time, that disrupts the normal flow of the program’s instructions.

10. What is the use of finally block?

A: Java finally block is a block that is used to execute important code such as closing connection, stream etc. Java finally block is always executed whether exception is handled or not. Java finallyblock follows try or catch block.