Internet and Java Programming

Assignment 2

Aumrudh Lal Kumar TJ

B.Tech IT 2nd Year

1)

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| Abstract Class | Interface |
| It can have both abstract and non-abstract methods. | It can only have abstract methods. |
| It doesn’t Support multiple inheritance. | It supports Multiple Inheritance. |
| It can have final, non-final, static and no static variables. | It Has only static and final variables. |
| Abstract keyword is used | Interface keyword is used. |
| Can have static method, constructor and main method. | Can’t have static method, constructor and main method. |

2)  In Java, the programmer need not to care for all those objects which are no longer in use. Garbage collector destroys these objects. Main objective of Garbage Collector is to free heap memory by destroying unreachable objects.

3)

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| Java Constructor | Java Method |
| A constructor is used to initialize the state of an object. | A method is used to expose the behavior of an object. |
| It has No return Type. | It must have Return Type. |
| It is invoked implicitly | It is invoked explicitly. |
| Java compiler provides default constructor if no constructor is declared. | The method is not provided by the compiler |
| The constructor name must be same as class name | The method name may or may not be same as class name |

4) The object cloning is a way to create exact copy of an object. The clone() method of Object class is used to clone an object. The java.lang.Cloneable interface must be implemented by the class whose object clone we want to create. If we don't implement Cloneable interface, clone() method generates CloneNotSupportedException.

5)Yes, it is possible to have multiple class with main methods. But the method must differ in arguments else invoking may be used using JVM.

6)Yes, it is possible to have multiple main methods in same class. But they must differ in arguments.

Eg:

class Sum {

int add(int a, int b) {

return (a+b);

}

public static void main (String args[]) {

System.out.println(" using Sum class");

Sum a = new Sum();

System.out.println("Sum is :" + a.add(5, 10));

}

public static void main (int i) {

System.out.println(" Using Sum class main function with integer argument");

Sum a = new Sum();

System.out.println("Sum is :" + a.add(20, 10));

}

}

7)

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| Serialization | Deserialization |
| It is process of converting object into persistent file. | It is process of reconstructing the object of the serialized state. |
| FileOutputStream out = new FileOutputStream("a.txt"); ObjectOutputStream obj = new ObjectOutputStream(out); obj.writeObject(new String ()); obj.close (); | FileInputStream in = new FileInputStream("abc.txt"); ObjectInputStream obj = new ObjectInputStream(in); String s = (String) obj.readObject(); obj.close(); |

8) Short-circuit operators, are logical operators (they can only be applied on boolean operands) that might not evaluate the right-hand-side operand, cause the left-hand-side gives a clue that tells the other hand-side doesn’t need to be evaluated. They are && and ||.

9) Transient keyword will not serialize data members of class. The id will not be serialized. So while deserialization value of id is not got. It returns Default value.

Eg:

Class Employee implement Serializable {

Transient int id;

String name;

}

Here returns 0 because datatype of id is int;

10) A JAR is a package file format used to aggregate many Java class files. It is also associated metadata and resources into one file for distribution. They are built on the ZIP format .They have a .jar file extension.

11) Yes, There is method called join() in java .Thread class provides the join() method which allows one thread to wait until another thread completes its execution. If t is a Thread object whose thread is currently executing, then t. join() will make sure that t is terminated before the next instruction is executed by the program.

12)

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| throw | throws |
| It is used to explicitly throw an exception. | It is used to declare an exception. |
| It is followed by an instance. | Throws is followed by class. |
| Checked Exception cannot be propagated using throw only. | Checked Exception can be propagated with throws. |
| It is used within method. | It is used within method signature. |
| Cannot throw multiple exception. | Can declare multiple exceptions. |
| Eg:  throw new ArithmeticException(“A”); | Eg:  public void m() throws ArithmeticException{  // code  } |

13)

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| Checked Exception | Unchecked Exception |
| Classes that extend Throwable class except Runtime Exception and Error are known as checked exception. | Classes that extend Runtime Exception are known as unchecked Exception. |
| They are the exceptions that are checked at compile time. | They are exceptions the exceptions that are not checked at compiled time |
| Eg: I/O Exception,SQL Exception | Eg: ArithmeticException, NullPointerException,  ArrayIndexOutOfBound Exception |

14) Yes,switch case can accept strings.

Eg:

String s=”abc”;

Swtich(str){

Case “abc”:

System.out.println(“abc”);

}

15) Yes, Interface can be inherited from another interface. It is done by using extends keyword.

Eg:

Interface A{}

Interface B extends A{}

16)It is used to deal with type-safe objects. It makes the code stable by detecting the bugs at the compile time. The advantages are type-safety, typecasting not required, compile-time checking.

Syntax:

Class<Type>

Eg:

ArrayList<String>

17) Abstraction is a process of hiding the implementation details and showing only functionality to the user. Real time example is call. While we call some other person, we talk to other instantly. But we don’t know wat process is going on internally.

18) Platform independent means once compiled you can execute the program on any platform (OS). Java is platform independent. Because the Java compiler converts the source code to bytecode, which is Intermediate Language. Bytecode can be executed on any platform (OS) using JVM(Java Virtual Machine).

19) The repaint() requests an erase and redraw (update) after a small time delay. The repaint() method is used to cause paint() to be invoked by the AWT painting thread.

20)

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| Applet | Servlets |
| A Java applet is a small application which is written in Java and delivered to users in the form of bytecode. | A servlet is a Java programming language class used to extend the capabilities of a server. |
| Applets are executed on client side. | Servlets are executed on server side. |
| Life cycle of Applets init(), stop(), paint(), start(), destroy(). | Lifecycle of servlets are:- init( ), service( ), and destroy( ) |
| Packages available in Applets are :- import java.applet.\*; and import java.awt.\*. | Packages available in servlets are:- import javax.servlet.\*; and import java.servlet.http.\*; |