19BQ1A05J3
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CSE-C

Set-5.

Assignment -I

1. List and explain Java buzzwords. Which factors are making Java famous language.

Ans: Simple: Java is really easy for any developer to learn with little programming experience because it inherits most of the features from programming languages like C++, C.

Secure: When Java programs are executed they don't instruct commands to the machine directly. Instead Java Virtual Machine (JVM) reads the program and convert it into the machine instructions. This way any program tries to get illegal access to the system will not be allowed by the JVM.

Portable: Java programs are portable because of its ability to run the program on any platform and no dependency on the underlying operating system.

Object Oriented Programming: The object oriented model in Java is simple and easy to extend and also the primitive types such as integers, are retained for high performance.

Interpreter: The compiled code of Java is not machine instructions but rather its a intermediate code called Byte-code. JVM interprets the Bytecode into Machine instructions during runtime.

Java is used to develop android applications using API, build web applications, software tools and scientific tools. Java is used in many fields making it a famous language.

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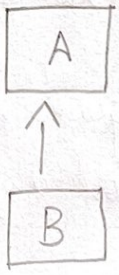
2. What are the benefits of inheritance? Explain various forms of inheritance with suitable code segments.

Ans The process by which one class acquires the properties and functionalities of another class is called inheritance.

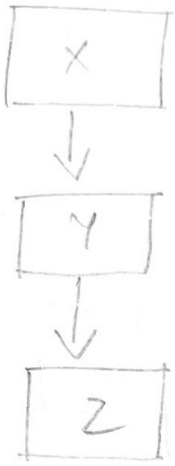
Single Inheritance: It refers to a super and sub class relationship where a class extends the another class.

Eg:
```
class A {
    int i;
    String a;
}
class B extends A {
    public void setValues()
    {
        i = 5;
    }
}
```



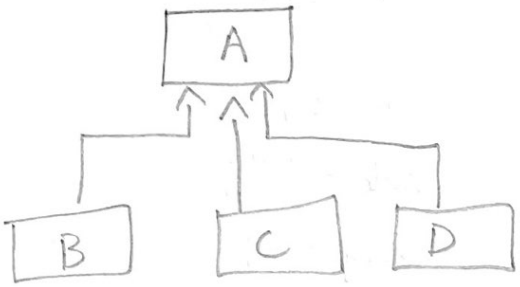
Multilevel inheritance: It refers to super and sub class relationship where a class extends the sub class.

Eg:
```
class X {
    public void methodX() {
        System.out.println("X");
    }
class Y extends X {
    public void methodY {
        System.out.println("Y");
    }
class Z extends Y {
    public void methodZ {
        System.out.println("Z")
    }
}
```



Hierarchical Inheritance: It refers to a super and sub class relationship where more than one classes extend the same class.

```
class A {
    ----
}
class B extends A
{  -----
}
class C extends A
{  ----
   ---
}
```



Hybrid Inheritance: Combination of more than one type of inheritance in a single program. (4)

Advantages of inheritance:

=> Inheritance promotes reusability. When a class inherits another class, it can access all the functionality of inherited class.

=> Reusability enhances reliability.

=> It helps reduce code redundancy and supports code extensibility.

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3) Program 1: Movie.

```
import java.util.Scanner;
class movieMagic
{
   int year;
   String title;
   float rating;
   movieMagic()
   {
      year = 0;
      title = "";
      rating = 0;
   }
   Void accept()
   {
     Scanner sc = new Scanner(System.in);
```

```
System.out.println("Enter title:");
title = sc.nextLine();
System.out.println("Enter release year:");
year = sc.nextLine();
System.out.println("Enter rating:");
rating = sc.nextline();
}
Void display()
{
System.out.println("Title:"+title);
if(rating >=0.0 && rating <=2.0)
{
    System.out.println("Flop");
}
else if(rating >=2.1 && rating<=3.4)
{
  System.out.println("Semi hit");
}
else if(rating >=3.5 && rating <=4.5)
{
    System.out.println("Hit");
}
else if(rating >=4.6 && rating <=5.0)
{  System.out.println("Super hit");
}
else { system.out.println("Rating should be blw 0.0 and 5.0");
```

```
}
public static void main(String args[])
{
    movieMagic ob = new movieMagic();
    ob.accept();
    ob.display();
}
}
```

4 Program 2: overloading function num-calc.

```
import java.io.*;
import java.util.*;
class calc
{
  void num_calc(int num, char ch)
  {
     int a=0;
     if (ch == 's')
       a= num * num;
     else
       a = num * num * num;
     System.out.println("a*= " + a);
  }
  void num-calc(int a, int b, char ch)
  {
     int q=0;
     if (ch == "p")
```

```
        q = a * b;
    else
        q = a + b;
    System.out.println("q = " + q);
}

Void num_calc(String s1, String s2)
{
    if (s1.equals(s2))
        System.out.println("Both Strings are equal");
    else
        System.out.println("Both strings a not equal");
}
public static void main(String args[])
{
    Scanner calc ob = new calc();
        ob.num_calc(10, 's');
        Ob.num_calc(20, 30, 'q');
        ob.num_calc("Java", "Program");
}
}
```

Output:

a = 100

q = 50

Both strings are not equal.

Resources:.

1) Https://j4school.wordpress.com/java-tutorials/

2) Https://beginnersbook.com/2013/03/inheritance-in-java/.