FALL SEM – (2020 -21)

CSE2005

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LAB NO : 3

Write a program using java multilevel inheritance to create 4 classes for 4 semesters like Sem1, Sem2, Sem3 and Sem4. Each class should contain member variables to store 4 subjects mark. All marks in all classes should be initialized through a default constructor and also average mark should be calculated inside the constructor. Finally, in Sem4 class total average should be calculated by using all average marks in all semesters. In main method display all semester average marks and final average mark.

CODE:

```
import java.util.*;
class Sem1{
    static Scanner scan=new Scanner(System.in);
   double cse1002 ;
   double ece1004;
   double mat1002;
   double eng1001;
   double avg1;
  public Sem1(){
    System.out.println("4 Subject Marks of Sem - 1 :");
    cse1002 = scan.nextDouble();
    ece1004 = scan.nextDouble();
    mat1002 = scan.nextDouble();
    eng1001 = scan.nextDouble();
    avg1 = (cse1002 + ece1004 + mat1002 + eng1001)/4;
  }
}
```

```
class Sem2 extends Sem1{
     double CSE2002;
     double ECE1003;
     double STS1008;
     double MAT2002;
     double avg2;
     public Sem2(){
      System.out.println("4 Subjects Marks of Sem - 2 :");
      CSE2002 = scan.nextDouble();
      ECE1003 = scan.nextDouble();
      STS1008 = scan.nextDouble();
      MAT2002 = scan.nextDouble();
      avg2 = (CSE2002 + ECE1003 + STS1008 + MAT2002)/4;
    }
}
class Sem3 extends Sem2{
   double CSE2005;
   double CSE2006;
   double MAT2005;
   double MAT2003;
   double avg3;
  public Sem3(){
    System.out.println("4 Subjects Marks of Sem - 3 :");
    CSE2005 = scan.nextDouble();
    CSE2006 = scan.nextDouble();
    MAT2005 = scan.nextDouble();
    MAT2003 = scan.nextDouble();
    avg3 = (CSE2005 + CSE2006 + MAT2005 + MAT2003)/4;
  }
}
class Sem4 extends Sem3{
   double MGT1001;
   double MGT1002;
   double STS2002;
   double ECE1004;
   double avg4;
   double Taverage;
  public Sem4(){
    System.out.println("4 Subject Marks of Sem - 4 :");
    MGT1001 = scan.nextDouble();
    MGT1002 = scan.nextDouble();
    STS2002 = scan.nextDouble();
```

```
    ECE1004 = scan.nextDouble();
    avg4 = (MGT1001 + MGT1002 + STS2002 + ECE1004)/4;
    Taverage = (avg1 + avg2 +avg3 + avg4)/4;
  }
}
class Main {
  public static void main(String[] args) {
    Sem4 Obj = new Sem4();
    System.out.println("Printing Semester-Wise Average
Marks");
    System.out.println("Sem1's Average : "+
Obj.avg1+"\nSem2's Average : "+ Obj.avg2+"\nSem3'Average :
"+Obj.avg3+"\nSem4's Average : "+Obj.avg4+"\n");
    System.out.println("The Total Average is : "
+Obj.Taverage);
  }
}
```

OUTPUT:

```
javac -classpath .:/run_dir/junit-4.12.jar:target/dependency/* -d . Main.java
java -classpath .:/run_dir/junit-4.12.jar:target/dependency/* Main
4 Subject Marks of Sem - 1 :
43.56
35.5
45.2
40.0
4 Subjects Marks of Sem - 2 :
42.8
34.6
40.5
35.6
4 Subjects Marks of Sem - 3 :
35.76
42.34
35.5
34
4 Subject Marks of Sem - 4 :
46
41
41.76
43.7
Printing Semester-Wise Average Marks
Sem1's Average : 41.065
Sem2's Average : 38.375
Sem3'Average : 36.9
Sem4's Average : 43.114999999999995

The Total Average is : 39.863749999999996
```