

Week 9-Extra program

Create a package CIE which has two classes- Student and Internals. The class Student has members like usn, name, sem. The class Internals has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class External which is a derived class of Student. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the SGPA of n students.

1)

```
package CIE;
import java.util.Scanner;

public class Student
{
    public String name;
    public String usn;
    public int sem;
    public void display()
    {
        Scanner s=new Scanner(System.in);
        System.out.println("Name:");
        name=s.next();
    }
}
```

```
        System.out.println("USN:");
        usn=s.next();
        System.out.println("Semester:");
        sem=s.nextInt();
    }
}
```

2)

```
package CIE;
import java.util.Scanner;

public class Internals extends Student
{
    public int ciem[];

    public void display()
    {
        ciem=new int[5];
        Scanner t=new Scanner(System.in);
        System.out.println("CIE Marks for 5 subjects(out of 50):");
        for(int i=0;i<5;i++)
            ciem[i]=t.nextInt();
    }
}
```

3)

```
package SEE;
import java.util.*;
import CIE.*;

public class Externals extends CIE.Student
{
    public int seem[];

    public void display()
    {
        seem=new int[5];
        Scanner s=new Scanner(System.in);
        System.out.println("SEE Marks for 5 subjects(out of 100):");
        for(int i=0;i<5;i++)
            seem[i]=s.nextInt();
    }
}
```

4)

```
import CIE.*;
import SEE.*;
import java.util.Scanner;
public class Main
```

```

{
    public static void main(String args[])
    {
        int n;
        int tcp,tc;
        int credits[]=new int[5];
        int total[]=new int[5];
        Scanner s=new Scanner(System.in);
        System.out.println("Enter the number of students:");
        n=s.nextInt();
        CIE.Student st[]=new CIE.Student[n];
        CIE.Internals in[]=new CIE.Internals[n];
        SEE.Externals e[]=new SEE.Externals[n];
        for(int i=0;i<n;i++)
        {
            st[i]=new CIE.Student();
            in[i]=new CIE.Internals();
            e[i]=new SEE.Externals();
            st[i].display();
            in[i].display();
            e[i].display();
            System.out.println("Enter the credits for each
subject:");

            for(int k=0;k<5;k++)
            {
                credits[k]=s.nextInt();
                total[k]=in[i].ciem[k]+(e[i].seem[k]/2);
            }
        }
    }
}

```

```

        tcp=0;tc=0;
    for(int l=0;l<5;l++)
    {
        tc=tc+credits[l];
        if(total[l]>=50)
        {
            tcp=tcp+(((total[l]/10)+1)*credits[l]);
        }
        else if(total[l]>=40 && total[l]<50)
        {
            tcp=tcp+(4*credits[l]);
        }
    }
    System.out.println("SGPA of student "+st[i].name+" is:
    "+(double)tcp/tc);

    }

}
}

```

OUTPUT:

```
C:\Users\win10\Documents\Java lab programs>cd "Packages-Extra programs"

C:\Users\win10\Documents\Java lab programs\Packages-Extra programs>javac Student.java

C:\Users\win10\Documents\Java lab programs\Packages-Extra programs>javac Internals.java

C:\Users\win10\Documents\Java lab programs\Packages-Extra programs>javac Externals.java

C:\Users\win10\Documents\Java lab programs\Packages-Extra programs>javac Main.java

C:\Users\win10\Documents\Java lab programs\Packages-Extra programs>java Main
Enter the number of students:
2
Name:
Ajay
USN:
1BM19CS001
Semester:
3
CIE Marks for 5 subjects(out of 50):
49
50
46
47
49
SEE Marks for 5 subjects(out of 100):
56
56
56
56
56
Enter the credits for each subject:
4
5
3
4
4
SGPA of student Ajay is: 8.0
```

```
Name:
Sujay
USN:
1BM19CS002
Semester:
3
CIE Marks for 5 subjects(out of 50):
45
32
40
41
38
SEE Marks for 5 subjects(out of 100):
90
91
96
97
98
Enter the credits for each subject:
4
5
3
4
4
SGPA of student Sujay is: 8.95
```