

/*Create a package CIE which has two classes - Personal and Internals. The class Personal 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 Personal. 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 final marks of n students in all five courses */

cie/Internals.java

```
package cie;

public class Internals {

    public int[] internalMarks = new int[5];


    public Internals(int[] marks) {
        for (int i = 0; i < 5; i++) {
            internalMarks[i] = marks[i];
        }
    }
}
```

cie/Personal.java

```
package cie;

public class Personal
{
    public String usn;
```

```
public String name;

public int sem;


public Personal(String usn,String name, int sem)
{
    this.usn=usn;
    this.name=name;
    this.sem=sem;
}

}
```

see/External.java

```
package see;

import cie.Personal;

public class External extends Personal {
    public int[] seeMarks = new int[5];


    public External(String usn, String name, int sem, int[] see) {
        super(usn, name, sem);
        for (int i = 0; i < 5; i++) {
            this.seeMarks[i] = see[i];
        }
    }
}
```

```
}
```

Finalmarks.java

```
import java.util.*;
```

```
import cie.*;
```

```
import see.*;
```

```
public class Finalmarks {
```

```
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.print("Enter number of students: ");
```

```
        int n = sc.nextInt();
```

```
        Personal[] p = new Personal[n];
```

```
        Internals[] in = new Internals[n];
```

```
        External[] ex = new External[n];
```

```
        for (int i = 0; i < n; i++) {
```

```
            System.out.println("\nEnter details for Student " + (i + 1));
```

```
            System.out.print("USN: ");
```

```
            String usn = sc.next();
```

```

System.out.print("Name: ");

String name = sc.next();


System.out.print("Semester: ");

int sem = sc.nextInt();


int[] internalMarks = new int[5];

System.out.println("Enter Internal Marks for 5 courses:");

for (int j = 0; j < 5; j++)

    internalMarks[j] = sc.nextInt();


int[] seeMarks = new int[5];

System.out.println("Enter SEE Marks for 5 courses:");

for (int j = 0; j < 5; j++)

    seeMarks[j] = sc.nextInt();


p[i] = new Personal(usn, name, sem);
in[i] = new Internals(internalMarks);
ex[i] = new External(usn, name, sem, seeMarks);
}


System.out.println("\n--- FINAL MARKS OF STUDENTS ---");


for (int i = 0; i < n; i++) {

    System.out.println("\nStudent: " + p[i].name + " | USN: " + p[i].usn);

```

```

        for (int j = 0; j < 5; j++) {

            int finalMarks = in[i].internalMarks[j] + (ex[i].seeMarks[j] / 2);

            System.out.println("Course " + (j + 1) + ": " + finalMarks);

        }

    }

    sc.close();

}

```

OUTPUT:-

The screenshot shows an IDE with a project named 'Finalmarks'. The Explorer view on the left lists various Java files, including 'Bank.java', 'BankSystem.class', 'BankSystem.java', 'Book.class', 'Bookdemo.class', 'Bookdemo.java', 'Circle.class', 'CurAcct.class', 'Finalmarks.java', 'import java.util.java', 'Rectangle.class', 'SavAcct.class', 'Shape.class', 'ShapeTest.class', 'ShapeTest.java', 'tempCodeRunnerFile.java', and 'Triangle.class'. The Terminal view on the right displays the output of the program, which prompts the user to enter details for two students and calculates their final marks for five courses.

```

PS C:\Users\Admin\Desktop\1M24CS181\java> & "C:\Program Files\Java\jdk-21\bin\java.exe" "-XX:+ShowCodeDetailsInExceptionMessages" "-cp" "C:\Users\Admin\AppData\Roaming\Code\User\workspaceStorage\1a7b91b2a83725f6c2da4cc4b5df88b\redhat_java\jdk_ws\java_78cd28f\bin" "Finalmarks"
Enter number of students: 2

Enter details for Student 1
USN: 1w24cs181
Name: ninad
Semester: 3
Enter Internal Marks for 5 courses:
38
38
37
28
32
37
Enter SEE Marks for 5 courses:
98
98
85
72
36

Enter details for Student 2
USN: 1w24cs182
Name: nischal
Semester: 3
Enter Internal Marks for 5 courses:
38
28
40
38
35
Enter SEE Marks for 5 courses:
98
86
92
99
87

--- FINAL MARKS OF STUDENTS ---

Student: ninad | USN: 1w24cs181
Course 1: 75
Course 2: 87
Course 3: 79
Course 4: 64
Course 5: 50

Student: nischal | USN: 1w24cs182
Course 1: 79
Course 2: 71
Course 3: 86
Course 4: 87
Course 5: 78
PS C:\Users\Admin\Desktop\1M24CS181\java>

```