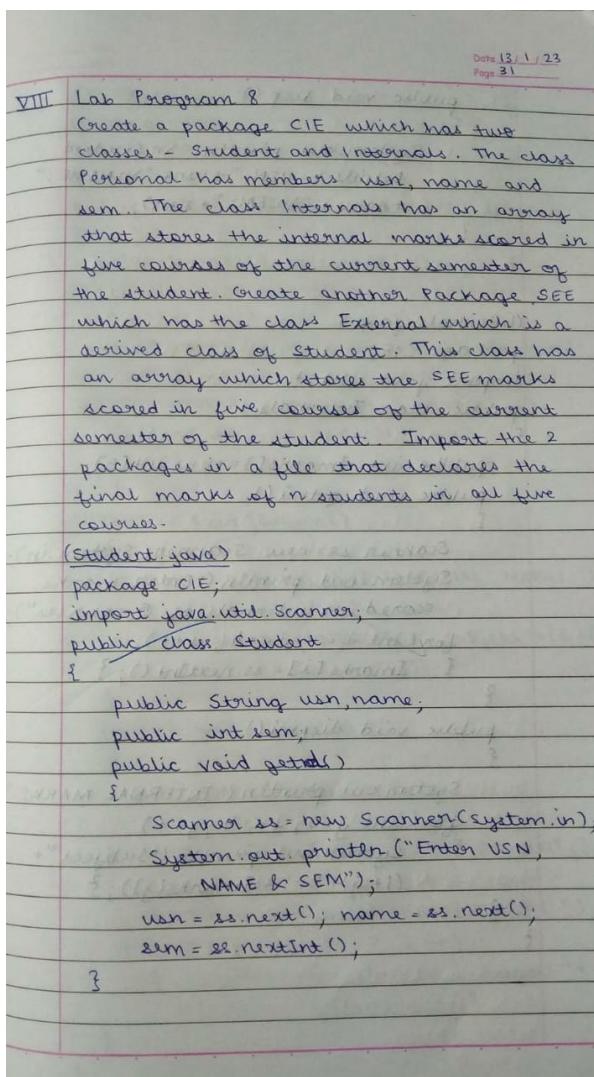


LAB PROGRAM 8:

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 final marks of n students in all five courses.

CODE:



```
public void disp()
{
    System.out.println("Student
Details: USN: " + usn + " NAME: "
+ name + " SEM: " + sem);
```

```
(Internals.java)
package CIE;
import java.util.*;
public class Internals
{
    public int Imarks[] = new int[5];
    public void getmi()
    {
```

```
Scanner ss = new Scanner(System.in);
System.out.println("Enter marks
scored in Internals of 5 courses");
for(int i = 0; i <= 4; i++)
{
    Imarks[i] = ss.nextInt();
}
```

```
public void dispmi()
{
    System.out.println("INTERNAL MARKS:");
    for(int j = 0; j <= 4; j++)
    {
        System.out.println("Subject" +
(1+j) + "=" + Imarks[j]);
    }
}
```

(External.java)

package SEE;

import java.util.Scanner;

import CIE.*;

public class External extends CIEInternals

{

int Smarks[] = new int[5];

public void getm()

{

Scanner ss = new Scanner(System.in);

System.out.println("Enter external

marks scored in 5 courses :");

for(int i=0; i<=4; i++)

{ Smarks[i] = ss.nextInt(); }

}

public void dispm()

{

System.out.println("EXTERNAL MARKS :");

for(int i=0; i<=4; i++)

{ System.out.println("Subject "+(i+1)+

" = " + Smarks[i]); }

}

public void finalcal()

{

int Final[] = new int[5];

for(int j=0; j<=4; j++)

{ Final[j] = Imarks[j] + (Smarks[j]/2);

}

System.out.println("FINAL MARKS :");

for(int i=0; i<=4; i++)

{ System.out.println("Subject "+

(i+1)+ " = " + Final[i]); }

}

}

(P-main.java)

```
import CIE.*;  
import SEE.*;  
import java.util.Scanner;  
class Pmain  
{  
    public static void main (String arg[])  
    {  
        Scanner ss = new Scanner(System.in);  
        System.out.println ("Enter the  
        number of students:");  
        int n = ss.nextInt();  
        Student s[] = new Student[n];  
        for (int i=0; i<n; i++)  
        {  
            s[i] = new Student();  
            s[i].gett(); s[i].disp();  
            External e = new External();  
            e.getmi(); e.dispmi(); e.getm();  
            e.dispm(); e.finalcal();  
        }  
    }  
}
```

OUTPUT:

Enter the number of students:

2

Enter USN, NAME & SEM

1BM21CS001 Alvin 3

Student Details:

USN: 1BM21CS001

NAME: Alvin

SEM: 3

Enter marks scored in intervals of 5 courses:

49 48 47 46 45

INTERNAL MARKS

Subject 1 = 49

Subject 2 = 48

Subject 3 = 47

Subject 4 = 46

Subject 5 = 45

Enter external marks scored in 5 courses

99 98 97 96 95

EXTERNAL MARKS

Subject 1 = 99

Subject 2 = 98

Subject 3 = 97

Subject 4 = 96

Subject 5 = 95

FINAL MARKS

Subject 1 = 98

Subject 2 = 97

Subject 3 = 95

Subject 4 = 94

Subject 5 = 92

Enter USN, NAME & SEM

IBM21CS002 Theo 3

8'

Student Details :

USN : IBM21CS002

NAME: Theo

SEM: 3

Enter marks scored in intervals of 5 courses:

45 46 47 48 49

INTERNAL MARKS

Subject 1 = 45

Subject 2 = 46

Subject 3 = 47

Subject 4 = 48

Subject 5 = 49

External marks scored in 5 courses:

95 96 97 98 99

EXTERNAL MARKS

Subject 1 = 95

Subject 2 = 96

Subject 3 = 97

Subject 4 = 98

Subject 5 = 99

FINAL MARKS

Subject 1 = 92

Subject 2 = 94

Subject 3 = 95

Subject 4 = 97

Subject 5 = 98

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

13/01/2023

OUTPUT:

```
c:\ Select C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.2364]
(c) Microsoft Corporation. All rights reserved.

C:\Users\bmsce\Desktop\bm21cs055>javac *.java

C:\Users\bmsce\Desktop\bm21cs055>java P_main
Enter the number of students:
2
Enter USN, NAME & SEM
1BM21CS001 Alvin 3

Student Details:
USN:1BM21CS001
NAME:Alvin
SEM:3
Enter marks scored in internals of 5 courses:
49 48 47 46 45
INTERNAL MARKS
Subject0=49
Subject1=48
Subject2=47
Subject3=46
Subject4=45
Enter external marks scored in 5 courses:
99 98 97 96 95
EXTERNAL MARKS
Subject0=99
Subject1=98
Subject2=97
Subject3=96
Subject4=95
FINAL MARKS
Subject1=98
Subject2=97
Subject3=95
Subject4=94
Subject5=92
```

```
Enter USN, NAME & SEM
1BM21CS002 Theo 3

Student Details:
USN:1BM21CS002
NAME:Theo
SEM:3
Enter marks scored in internals of 5 courses:
45 46 47 48 49
INTERNAL MARKS
Subject0=45
Subject1=46
Subject2=47
Subject3=48
Subject4=49
Enter external marks scored in 5 courses:
95 96 97 98 99
EXTERNAL MARKS
Subject0=95
Subject1=96
Subject2=97
Subject3=98
Subject4=99
FINAL MARKS
Subject1=92
Subject2=94
Subject3=95
Subject4=97
Subject5=98
```