INTERNALS.JAVA

```
package CIE;
import java.util.Scanner;
public class Internals extends Student {
  protected int[] marks = new int[5]; // Marks for 5 courses
  public void inputCIEmarks() {
    Scanner scanner = new Scanner(System.in);
    System.out.println("Enter Internal marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
       System.out.print("Enter marks for Course " + (i + 1) + ": ");
       marks[i] = scanner.nextInt();
    }
  }
  public void displayCIEmarks() {
    System.out.println("Internal Marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
       System.out.println("Course " + (i + 1) + ": " + marks[i]);
    }
}
```

STUDENT.JAVA

```
package CIE;
import java.util.Scanner;
public class Student {
  protected String usn;
  protected String name;
  protected int sem;
  public void inputStudentDetails() {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter USN: ");
    usn = scanner.nextLine();
    System.out.print("Enter Name: ");
    name = scanner.nextLine();
    System.out.print("Enter Semester: ");
    sem = scanner.nextInt();
  }
  public void displayStudentDetails() {
    System.out.println("USN: " + usn);
    System.out.println("Name: " + name);
    System.out.println("Semester: " + sem);
  }
}
```

EXTERNALS.JAVA

```
package SEE;
import CIE.Internals;
import java.util.Scanner;
public class Externals extends Internals {
  protected int[] externalMarks = new int[5];
  protected int[] finalMarks = new int[5];
  public Externals() {
    marks = new int[5];
    externalMarks = new int[5];
    finalMarks = new int[5];
  public void inputSEEmarks() {
    Scanner scanner = new Scanner(System.in);
    System.out.println("Enter External marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
       System.out.print("Enter marks for Course " + (i + 1) + ": ");
       externalMarks[i] = scanner.nextInt();
    }
  }
  public void calculateFinalMarks() {
    for (int i = 0; i < 5; i++) {
       finalMarks[i] = marks[i] + externalMarks[i];
    }
  }
  public void displayFinalMarks() {
    displayStudentDetails();
    displayCIEmarks();
    System.out.println("Final Marks (Internal + External) for 5 courses:");
    for (int i = 0; i < 5; i++) {
      System.out.println("Course " + (i + 1) + ": " + finalMarks[i]);
    }
  }
MAIN.JAVA
import SEE.Externals;
import java.util.Scanner;
public class Main {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter the number of students: ");
    int n = scanner.nextInt();
    Externals[] students = new Externals[n];
```

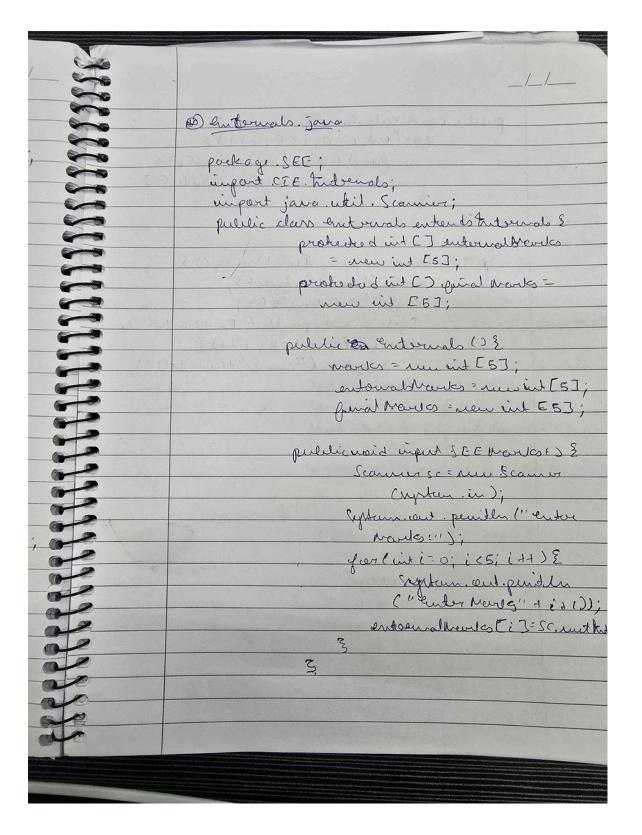
```
for (int i = 0; i < n; i++) {
    students[i] = new Externals();

    System.out.println("Enter details for student " + (i + 1));
    students[i].inputStudentDetails();
    students[i].inputClEmarks();
    students[i].inputSEEmarks();
    students[i].calculateFinalMarks();
}
for(int i=0; i<n; i++){
    students[i].displayFinalMarks();
    System.out.println();
}
}</pre>
```

```
D:\1BM23CS321\Package>java Main.java
Enter the number of students: 1
Enter details for student 1
Enter USN: 1BM23CS316
Enter Name: Shonal
Enter Semester: 3
   Enter Internal marks for 5 courses:
  Enter marks for Course 1: 45
Enter marks for Course 2: 43
Enter marks for Course 3: 48
Enter marks for Course 4: 50
Enter marks for Course 5: 39
Enter External marks for 5 courses:
Enter marks for Course 1: 45
Enter marks for Course 2: 50
Enter marks for Course 3: 44
Enter marks for Course 4: 34
Enter marks for Course 5: 41
USN: 1BM23CS321
Name: Shonal
Semester: 3
  Internal Marks for 5 courses:
Course 1: 45
Course 2: 43
 Course 3: 48
 Course 4: 50
 Course 5: 39
   Final Marks (Internal + External) for 5 courses:
Course 1: 90
 Course 2: 93
Course 3: 92
 Course 4: 84
 Course 5: 80
```

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