

```
// Student.java in package CIE
```

```
package CIE;
```

```
public class Student {  
    private String usn;  
    private String name;  
    private int sem;  
  
    public Student(String usn, String name, int sem) {  
        this.usn = usn;  
        this.name = name;  
        this.sem = sem;  
    }  
  
    public String getUsn() {  
        return usn;  
    }  
  
    public void setUsn(String usn) {  
        this.usn = usn;  
    }  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String name) {  
        this.name = name;  
    }  
  
    public int getSem() {  
        return sem;  
    }  
  
    public void setSem(int sem) {  
        this.sem = sem;  
    }  
}
```

```
// Internals.java in CIE
```

```
package CIE;
```

```
public class Internals {  
    private int[] internalMarks;
```

```
  
    public Internals(int[] internalMarks) {  
        if (internalMarks.length == 5) {  
            this.internalMarks = internalMarks;  
        } else {  
            throw new IllegalArgumentException("Internal marks must be an array of size 5.");  
        }  
    }  
}
```

```
  
    public int getTotalInternalMarks() {  
        int total = 0;  
        for (int mark : internalMarks) {  
            total += mark;  
        }  
        return total;  
    }  
}
```

```
  
    public void displayInternalMarks() {  
        System.out.print("Internal Marks: ");  
        for (int mark : internalMarks) {  
            System.out.print(mark + " ");  
        }  
        System.out.println();  
    }  
}
```

```
// External.java in SEE
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```

```
package SEE;
```

```
import CIE.Student;
```

```
public class External extends Student {  
    private int[] externalMarks;
```

```
  
    public External(String usn, String name, int sem, int[] externalMarks) {  
        super(usn, name, sem);  
        if (externalMarks.length == 5) {  
            this.externalMarks = externalMarks;  
        } else {  
            throw new IllegalArgumentException("External marks must be an array of size 5.");  
        }  
    }  
}
```

```
  
    public int getTotalExternalMarks() {  
        int total = 0;  
        for (int mark : externalMarks) {  
            total += mark;  
        }  
        return total;  
    }  
}
```

```
  
    public void displayExternalMarks() {  
        System.out.print("External Marks: ");  
        for (int mark : externalMarks) {  
            System.out.print(mark + " ");  
        }  
        System.out.println();  
    }  
}
```

```
}
```

```
// Main.java in SEE

import CIE.Internals;
import SEE.External;

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();
        scanner.nextLine();

        External[] students = new External[n];

        for (int i = 0; i < n; i++) {
            System.out.println("\nEnter details for student " + (i + 1));

            System.out.print("Enter USN: ");
            String usn = scanner.nextLine();
            System.out.print("Enter Name: ");
            String name = scanner.nextLine();
            System.out.print("Enter Semester: ");
            int sem = scanner.nextInt();

            int[] internalMarks = new int[5];
            System.out.println("Enter Internal Marks for 5 courses: ");
            for (int j = 0; j < 5; j++) {
                internalMarks[j] = scanner.nextInt();
            }

            Internals internals = new Internals(internalMarks);

            int[] externalMarks = new int[5];
            System.out.println("Enter External Marks for 5 courses: ");
            for (int j = 0; j < 5; j++) {
                externalMarks[j] = scanner.nextInt();
            }
        }
    }
}
```

```

Internals internals = new Internals(internalMarks);

int[] externalMarks = new int[5];
System.out.println("Enter External Marks for 5 courses: ");
for (int j = 0; j < 5; j++) {
    externalMarks[j] = scanner.nextInt();
}

students[i] = new External(usn, name, sem, externalMarks);

System.out.println("\nStudent Details: ");
System.out.println("USN: " + students[i].getUsn());
System.out.println("Name: " + students[i].getName());
System.out.println("Semester: " + students[i].getSem());

internals.displayInternalMarks();

students[i].displayExternalMarks();

int totalInternalMarks = internals.getTotalInternalMarks();
int totalExternalMarks = students[i].getTotalExternalMarks();
int finalMarks = totalInternalMarks + totalExternalMarks;
System.out.println("Total Internal Marks: " + totalInternalMarks);
System.out.println("Total External Marks: " + totalExternalMarks);
System.out.println("Final Marks (Internal + External): " + finalMarks);
}

scanner.close();
}
}

```