Lab 9 - 14/12/2023 14-12-23

1. Develop a Java program to create a class Student with members usn, name, an array credits and an array marks. Include methods to accept and display details and a method to calculate SGPA of a student.

$$SGPA = \frac{\sum (\text{course credits})(\text{Grade Points})}{\sum (\text{course credits})}$$

```
public class Subject
{
  int subjectmarks;
  int credits;
  int grade;
}

import java.util.Scanner;
public class Student
{
Subject sub[];
String name;
String usn;
double sgpa;
Scanner scan=new Scanner(System.in);
Student()
{
sub = new Subject[8];
for(int i=0; i<8; i++)
{
 sub[i] =new Subject();
 scan= new Scanner(System.in);
```

```
}
public void getStudentDetails()
{
System.out.println("Enter name: ");
name = scan.nextLine();
System.out.println("Enter USN: ");
usn = scan.nextLine();
}
public void getMarks()
{
for(int i=0; i<8; i++)
{
System.out.println("Enter Subject "+(i+1)+"
sub[i].subjectmarks = scan.nextInt();          marks: ");
System.out.println("Enter Subject "+(i+1)+"credits:");
sub[i].credits = scan.nextInt();
if(sub[i].subjectmarks==100)
sub[i].grade = 10;
else if(sub[i].subjectmarks<40)
sub[i].grade = 0;
else
sub[i].grade = (sub[i].subjectmarks/10)+1;
}
}
public void computeSGPA()
{
int sumc=0;
double prod=0;
for(int i=0;i<8;i++)
{
```

```
sumc = sumc + sub[i].credits;
prod = prod + (sub[i].grade * sub[i].credits);
}
sgpa = prod / sumc;
}
}

public class ~~SGPT~~ Sgpa
{
public static void main (String args[])
{
 Student S1= new Student();
 S1.getStudentDetails();
 S1.getMarks();
 S1.computeSGPA();
 System.out.println("Name: "+ S1.name);
 System.out.println("USN:" + S1.usn);
 System.out.println("S.No \t Subject Marks \t Credits
                     \t Grade ");

 for (int i=0; i<8; i++)
 {
  System.out.println((i+1)+"\t"+S1.sub[i].subject-
                     marks+" \t"+ S1.sub[i].credits
                     +"\t"+S1.sub[i].grade);

 }
 System.out.println("SGPA =" + S1.~~grade~~ sgpa);
 System.out.println("- - - - - - - - - - -");
```

System.out.println("Sneha N Shastri - 1BM22CS283");

}

}

Output:

```
Enter name:
Sneha
Enter USN:
1BM22CS283
Enter Subject 1 Marks:
90
Enter Subject 1 Credits:
4
Enter Subject 2 Marks:
97
Enter Subject 2 Credits:
4
Enter Subject 3 Marks:
87
Enter Subject 3 Credits:
3
Enter Subject 4 Marks:
88
Enter Subject 4 credits:
3
Enter Subject 5 Marks:
89
Enter Subject 5 credits:
3
```

System.out.println("Sneha N Shastri - 1BM22CS283");

}

}

Output:

```
Enter name:
Sneha
Enter USN:
1BM22CS283
Enter Subject 1 Marks:
90
Enter Subject 1 Credits:
4
Enter Subject 2 Marks:
97
Enter Subject 2 Credits:
4
Enter Subject 3 Marks:
87
Enter Subject 3 Credits:
3
Enter Subject 4 Marks:
88
Enter Subject 4 credits:
3
Enter Subject 5 Marks:
89
Enter Subject 5 credits:
3
```

Enter Subject 6 Marks:
97
Enter Subject 6 credits:
3
Enter Subject 7 Marks:
90
Enter Subject 7 credits:
1
Enter Subject 8 Marks:
95
Enter Subject 8 credits:
1

Name: Sneha
USN: 1BM22CS283

S.No	Subject Marks	Credits	Grade
1	90	4	10
2	97	4	10
3	87	3	9
4	88	3	9
5	89	3	9
6	97	3	10
7	90	1	10
8	95	1	10

SGPA = 9.5909

Sneha N Shastri - 1BM22CS283