output:

```
enter the roll no : 15
enter the name : nawaf
Roll number : 15
Name : nawaf
Marks obtained :
Marks obtained in sub 1 : 10
Marks obtained in sub 2 : 11
Marks obtained in sub 3 : 12
sports marks : 3
total marks : 33
```

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Design the class student having data members like student name & role numbers & method called show to display the name & role number. Derive a class called test form student class having three subjects marks as a data members & methods show marks to display the marks. Create an interface called sports contains constant sports marks & method show sports. Derive a class result from test class & implement interface sports. Calculate total marks by considering sports marks by considering sports marks. then display the total in Result class.

```
import java.util.Scanner;
class student
{
    int rollno;
    String studentname;
    void read()
    {
        Scanner s = new Scanner(System.in);
        System.out.println("enter the rollno:");
        rollno = s.nextLine();
        s.nextLine();
        System.out.println("enter the name");
        studentname = s.nextLine();
    }
```

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```
void show()
{
System.out.println("Rollnumber:"+rollno);
System.out.println("Name:"+studentname);
}
}
class test extends Student
{
float sub1, sub2, sub3;
void getmarks(float m1, float m2,
float m3)
{
sub1 = m1;
sub2 = m2;
sub3 = m3;
}
void showmarks()
{
System.out.println("marks obtained:");
System.out.println("marks obtained in
sub1:"+sub1);
System.out.println("marks obtained
in sub2:
sub2);
System.out.println("marks obtained
in sub3:"+
}
}
```

Teacher's Signature.....

```
interface sports
{
    int sportsmarks = 3;
    void show_sportswt();
}
class result extends test implements sports
{
    float total;
    void display()
    {
        show();
        show_marks();
        System.out.println("sports marks:" +sportsmarks);
        total = sub1 + sub2 + sub3 +sportsmarks;
        System.out.println("total marks:" +total);
    }
}
public class javaapplication
{
    public static void main(String[] args)
    {
        result r = new result();
        r.read()
        r.getnotes(10.0F, 11.0F, 12.0
        r.display();
    }
}
```

Teacher's Signature.....

output:

enter the number of elements:

5

enter 5 elements:

40 20 10 30 50

enter the scale element:

2

Minimum element in the array: 10

after Scale(), the array is:

80 40 20 60 100

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Develop a set of methods, which work with an integer array. the methods to be implemented are :-
i) min
ii) scale place this in a package called p1. write a main method in separate file to use the methods of package p1.

```
package p1;

public class methods{
    public void min(int a[]){
        int minNo = a[0];
        for(int i=0; i<a.length; i++)
        { if(a[i]<minNo)
            minNo=a[i];
        }
        System.out.println("Minimum element in the array"
                                    +min(No));
    }

    public void scale(int a[], int s)
{
    for(int i=0; i<a.length; i++)
        a[i] = a[i]*s;
        System.out.println("after Scale(), the array i
            for(int i=0; i<a.length; i++)
                {
                    System.out.print(a[i]+" ");
                }
    }
}
```

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```
import java.util.Scanner;
import p1.methods;
public class program{

    public static void main(String[] args)
{
        int a[], n, ele;
        Scanner s = new Scanner(System.in);
        System.out.println("enter the Number of elements:");
        n = s.nextInt();
        a = new int[n];
        System.out.println("enter "+n+" elements:");
        for(int i=0; i<n; i++)
            a[i] = s.nextInt();
        System.out.println("enter the scale element");
        ele = s.nextInt();
        methods m = new methods();
        m.min(a);
        m.scale(a, ele);
    }
}
```

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