**Assignment A2**

/\* Write C/C++ program to store marks scored for first test of subject 'Data Structures and Algorithms' for N students. Compute

I. The average score of class

ii. Highest score and lowest score of class

iii. Marks scored by most of the students

iv. List of students who were absent for the test

\*/

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**#include** <iostream>

**using** **namespace** std;

**class** Marks

{

**int** m[100],n;

**public** :

**void** **get**()

{

cout<<"\nEnter no. of students : ";

cin>>n;

cout<<"\nEnter the Dsa marks(-1 for absent students) : ";

**for**(**int** i=0 ; i<n ; i++)

{

cout<<"\nMarks of Roll No. "<<i+1<<" : ";

cin>>m[i];

}

}

**void** **repeated\_marks**()

{

**int** a[100];

**for**(**int** i=0 ; i<100; i++)

{

a[i]=0;

}

**for**(**int** i=0 ; i<n ; i++)

{

**for**(**int** j=0 ; j<100 ; j++)

{

**if**( m[i]==j)

a[j]++;

}

}

**int** max=a[0],temp=0;

**for**(**int** i=0 ; i<100; i++)

{

**if**(max<a[i])

{

max=a[i];

temp=i;

}

}

cout<<"\nmax="<<max;

cout<<"\nMarks scored by most of the students : "<<temp;

}

**void** **averrage**()

{

**int** sum,avg;

sum=0,avg=0;

**int** x=n;

**for**(**int** i=0 ; i<n ; i++)

{

**if**(m[i] != -1)

{

sum+=m[i];

}

**else**

**if**(m[i]==-1)

x--;

}

avg=sum/x;

cout<<"\nAverage Marks : "<<avg;

}

**void** **highest\_lowest**()

{

**int** max,min;

max=min=m[0];

**for**(**int** i=0 ; i<n ; i++)

{

**if**(m[i]!=-1)

{

**if**(m[i]<min)

min=m[i];

**if**(m[i]>max)

max=m[i];

}

}

cout<<"\nMaximum Marks : "<<max<<"\nMinimum Marks : "<<min;

}

**void** **absent**()

{

cout<<"\nStudents absent for test are : ";

**for**(**int** i=0 ;i<n ; i++)

{

**if**(m[i]==-1)

cout<<"\nRoll No. : "<<i+1;

}

}

};

**int** **main**()

{

Marks obj;

**int** ch;

**do**{

cout<<"\n\n1.Get Details \n2.Average \n3.Highest and lowest marks \n4.Marks scored by most students \n5.Absent Students \n6.EXIT";

cout<<"\nEnter your choice";

cin>>ch;

**switch**(ch)

{

**case** 1:obj.get();**break**;

**case** 2:obj.averrage();**break**;

**case** 3:obj.highest\_lowest();**break**;

**case** 4:obj.repeated\_marks();**break**;

**case** 5:obj.absent();**break**;

}

}**while**(ch!=6);

**return** 0;

}

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**Output:**

1.Get Details

2.Average

3.Highest and lowest marks

4.Marks scored by most students

5.Absent Students

6.EXIT

Enter your choice1

Enter no. of students : 10

Enter the Dsa marks(-1 for absent students) :

Marks of Roll No. 1 : 5

Marks of Roll No. 2 : 5

Marks of Roll No. 3 : 6

Marks of Roll No. 4 : 7

Marks of Roll No. 5 : 8

Marks of Roll No. 6 : 5

Marks of Roll No. 7 : -1

Marks of Roll No. 8 : -1

Marks of Roll No. 9 : 6

Marks of Roll No. 10 : 5

1.Get Details

2.Average

3.Highest and lowest marks

4.Marks scored by most students

5.Absent Students

6.EXIT

Enter your choice2

Average Marks : 5

1.Get Details

2.Average

3.Highest and lowest marks

4.Marks scored by most students

5.Absent Students

6.EXIT

Enter your choice3

Maximum Marks : 8

Minimum Marks : 5

1.Get Details

2.Average

3.Highest and lowest marks

4.Marks scored by most students

5.Absent Students

6.EXIT

Enter your choice4

max=4

Marks scored by most of the students : 5

1.Get Details

2.Average

3.Highest and lowest marks

4.Marks scored by most students

5.Absent Students

6.EXIT

Enter your choice5

Students absent for test are :

Roll No. : 7

Roll No. : 8

1.Get Details

2.Average

3.Highest and lowest marks

4.Marks scored by most students

5.Absent Students

6.EXIT

Enter your choice6