

OOP ---- Lab Task 1

Question 1:

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File Edit Selection View Go Run Terminal Help
Lab > @ Q1.cpp x @ Q1.cpp
1 #include <iostream>
2 #include <iomanip>
3
4 using namespace std;
5 void funSwap(int *ptr1, int *ptr2);
6 void calcRange(int *ptr1, int *ptr2, float *range);
7 void calcMean(int *ptr1, int *ptr2, float *mean);
8 void calcNorm(int *ptr1, int *ptr2);
9
10 int main()
11 {
12     int num1 = 100, num2 = 20, norm;
13     float mean = 0, range = 0;
14     cout << "Before Swap: " << num1 << " " << num2 << endl;
15     funSwap(&num1, &num2);
16     cout << "After Swap: " << num1 << " " << num2 << endl;
17     calcRange(&num1, &num2, &range);
18     calcMean(&num1, &num2, &mean);
19     cout << "Normalizing num1: " << norm << endl;
20     calcNorm(&num2, &norm);
21     cout << "Normalizing num2: " << norm << endl;
22     cout << "Mean: " << mean << endl;
23     cout << "Range: " << range << endl;
24     return 0;
25 }
26
27 void funSwap(int *ptr1, int *ptr2)
28 {
29     int temp = *ptr2;
30     *ptr2 = *ptr1;
31     *ptr1 = temp;
32 }
33
34 void calcRange(int *ptr1, int *ptr2, float *range)
35 {
36     int max = 0, min = 1000;
37     if(*ptr1 < *ptr2)
38     {
39         max = *ptr2;
40     }
41     else
42     {
43         max = *ptr1;
44     }
45     if(*ptr1 > *ptr2)
46     {
47         min = *ptr2;
48     }
49     else
50     {
51         min = *ptr1;
52     }
53     *range = max - min;
54 }
55
56 void calcMean(int *ptr1, int *ptr2, float *mean)
57 {
58     *mean = float(*ptr1 + *ptr2) / 2;
59 }
60
61 void calcNorm(int *ptr1, int *norm)
62 {
63     *norm = *ptr1 / *ptr1;
64 }
```

```
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Before Swap: 100 20
After Swap: 20 100
Normalizing num1: 1
Normalizing num2: 1
Mean: 7.5
Range: 5
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Before Swap: 100 20
After Swap: 20 100
Normalizing num1: 1
Normalizing num2: 1
Mean: 15
Range: 10
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Before Swap: 100 20
After Swap: 20 100
Normalizing num1: 1
Normalizing num2: 1
Mean: 60
Range: 80
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$
```

Question 2:

```
File Edit Selection View Go Run Terminal Help
Lab > @ Q1.cpp x @ Q1.cpp
1 #include <iostream>
2 #include <iomanip>
3
4 using namespace std;
5 void calcTotal(int *ptr1, int *ptr2, int *ptr3, int *total);
6 void calcPercent(int *ptr1, int *ptr2, int *ptr3, int *total, float *percent);
7
8 int main()
9 {
10     int sub1, sub2, sub3, total = 0;
11     float percent = 0;
12     cout << "Enter marks of 3 Subjects: ";
13     cin >> sub1 >> sub2 >> sub3;
14     cout << sub1 << " " << sub2 << " " << sub3 << endl;
15     calcTotal(&sub1, &sub2, &sub3, &total);
16     calcPercent(&sub1, &sub2, &sub3, &total, &percent);
17     cout << "Total: " << total << " / 300 << endl;
18     cout << "Percentage: " << percent << "%" << endl;
19     return 0;
20 }
21
22 void calcTotal(int *ptr1, int *ptr2, int *ptr3, int *total)
23 {
24     *total = *ptr1 + *ptr2 + *ptr3;
25 }
26
27 void calcPercent(int *ptr1, int *ptr2, int *ptr3, int *total, float *percent)
28 {
29     *percent = float((*total)/300);
30 }
```

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muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Enter marks of 3 Subjects: 34 56 88
34 56 88
Total: 178 / 300
Percentage: 59%
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Enter marks of 3 Subjects: 99 87 67
99 87 67
Total: 253 / 300
Percentage: 84%
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Enter marks of 3 Subjects: 66 99 89
66 99 89
Total: 254 / 300
Percentage: 84%
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$ cd ~/home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/ && g++ Q1.cpp -o Q1.66 /home/muhamad-awais/Documents/Files/PAST/Semester2/OOP/Lab/Q1
Enter marks of 3 Subjects: 33 44 32
33 44 32
Total: 109 / 300
Percentage: 36%
muhamad-awais@ubuntu:~/Documents/Files/PAST/Semester2/OOP/Lab$
```