Lab 7 Arrays

Please test the correctness of your programs in **Q2 and Q3** on **PASS**.

Q1. [For Practice]

Write a program that defines and initializes an array of 10 integers.

```
int num[10] = {5, 10, 2, 5, 8, 8, 7, 9, 1, 5};
```

a)   Write a for-loop to print out the contents of the array, one element in one line.

b)   Modify the programs in question a), such that it prints a bar chart for the values in the array as follows.

```
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```

Hint: You may use nested for loops.

Q2. [For Practice]

Write a program to read students' mid-term test score (a whole number ranging from 0 to 50), calculate the average score and prints the corresponding bar chart for the grades as in **Q1-b**. The program also needs to display two decimal places of the average score.

> *Hint-1. The number of students will not exceed 20.*
> *Hint-2. Display two decimal places of the average score by using $std::fixed$ and $std::setprecision$.*

Expected Outputs:

Example-1
Number of students? **3** Student 1: **30** Student 2: **20** Student 3: **50** Average = 33.33 **************************** ****************** **

Q-3. [will be marked]

You must click <u>submit</u> to submit your solution. Deadline is 11:59pm, Mar 7, 2023.

Write a program that reads two sets of integer elements (10 elements for each set) and finds the intersection of two sets.

> *Hint-1. The elements of set A and B should be unique according to set properties.*
> *Hint-2. The intersected element is the common element in both sets.*

Expected Outputs:

Example-1
Enter 10 Elements of Set A: **1 2 3 4 5 6 7 8 9 10** Enter 10 Elements of Set B: **11 12 13 14 15 16 17 18 19 20** The Intersected Element of Set A and B are not Found.
Example-2
Enter 10 Elements of Set A: **1 2 3 4 5 6 7 8 9 10** Enter 10 Elements of Set B: **1 2 3 4 5 6 7 8 9 10** The Intersected Elements of Set A and B are: 1 2 3 4 5 6 7 8 9 10
Example-3
Enter 10 Elements of Set A: **1 2 3 4 5 6 7 8 9 10** Enter Elements of Set B: **1 3 5 7 9 11 13 15 17 19** The Intersected Elements of Set A and B are: 1 3 5 7 9
Example-4
Enter 10 Elements of Set A: **-1 -2 -3 -4 -5 -6 -7 -8 -9 -10** Enter Elements of Set B: **-1 -3 -5 -7 -9 -11 -13 -15 -17 -19** The Intersected Elements of Set A and B are: -1 -3 -5 -7 -9