

# CSE 278 Lab 2

## C++ programming basic

### Goal:

1. Write C++ source file
2. Compile/run C++ code
3. Practice with the following topics:
  - I/O
  - Data type
  - Array
  - Conditional & loop

### Note:

- Write C++ code to implement the answer.
- Each small question should be stored in one source code file. You do not need to design a function for this. Instead, you can put all your code in the main function. So, 6 questions in total means 6 source code file with 6 “main” functions.
- Code (80%)+Comments & documentation(20%)
- You can use the Linux server to edit and run your code or use any IDE in the Virtual Machine to edit and run your code.
- Package all your code files with the readme file into one file. Upload to Canvas.

## Question 1: Scientific computation.

- a) Given the width and height (w & h) of a rectangle, calculate the perimeter and the size of the area. Assume that the width and height are integers, please choose the best data type that could save the memory and maintain the functionality.
- b) Given the radius of a circle (r), calculate the perimeter and the size of the area. Please choose the best data type that could save the memory and maintain the functionality.

For question 1, please design the output to display the instructions for input before you use “cin” to get the input. When you finally output the computation result, please format the output with only 2-places precisions.

## Question 2: Logic computation.

If you need to manage the system, the most important thing is authorization. You have the account name and password

Account: 21\_CSE\_c++\_Fall

Password: 278A&B

- a) Now you need to design the login system. Let the user type the account and password. If everything matches, please show “login success”, otherwise please show “Login failed.” and collect the account and password again.
- b) Usually, the account should be exactly the same as what is stored in the system (case sensitive). However, in some systems, the account is not case sensitive, such as the email address. In b) you need to design another login code that is not case sensitive, i.e., “21\_cse\_c++\_faLL” should also work.

## Question 3: Logic computation B:

The user needs to input an array of integer numbers (max number<20, max value<65535).  
Store the numbers into an array and return the length of the array (total number), the maximum,  
and the minimum value.

Bonus (5% to this lab):

Can you also return the median number?