Lahore University of Management and Sciences

Lab-1 Manual

for

Introduction to Programming

(CS200)

Dr. Mian Muhammad Awais

LAB GUIDELINES

- Make sure you submit the lab before 11:55 AM. Any late submission will not be graded afterwards. In case of internet connectivity or electricity issues make sure to email the TA before 2:00 PM, cases will be verified and then awarded a grade if applicable.
- For every lab, there will be a folder created on LMS. You must submit your work in the respective folder during the lab time, you and only you are responsible for your submissions.
- You will be allowed to discuss the questions in the first half of the lab session for a few questions. After that, there will be a portion of lab where you cannot converse and must work for yourself. No discussion is allowed in later time period.
- You should do your work with utmost clarity and precision. Do not waste your time trying to do something you do not understand. Ask Lab instructors for help, that is what they are there for.

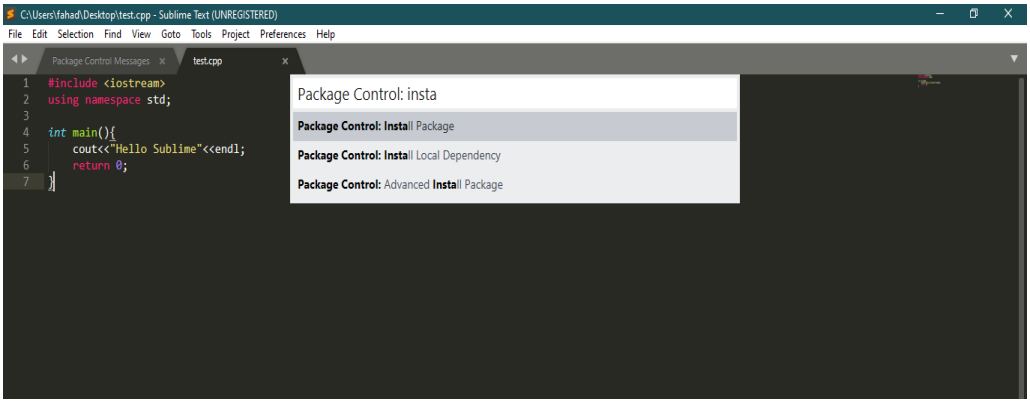
- Any legitimate cheating case can and will be reported to Disciplinary Committee without any leniency. Plagiarism Software make our task easier.
- Please follow the lab etiquettes and follow code of conduct in the session.
- Do not start Personal chat during your zoom meeting and raise your hands before asking questions.

OBJECTIVES

- Introduction to Sublime Text Editor: Installation
- Basic C++: Variables, Loops, Functions, Switches
- Datatypes: int, float, long, char, String

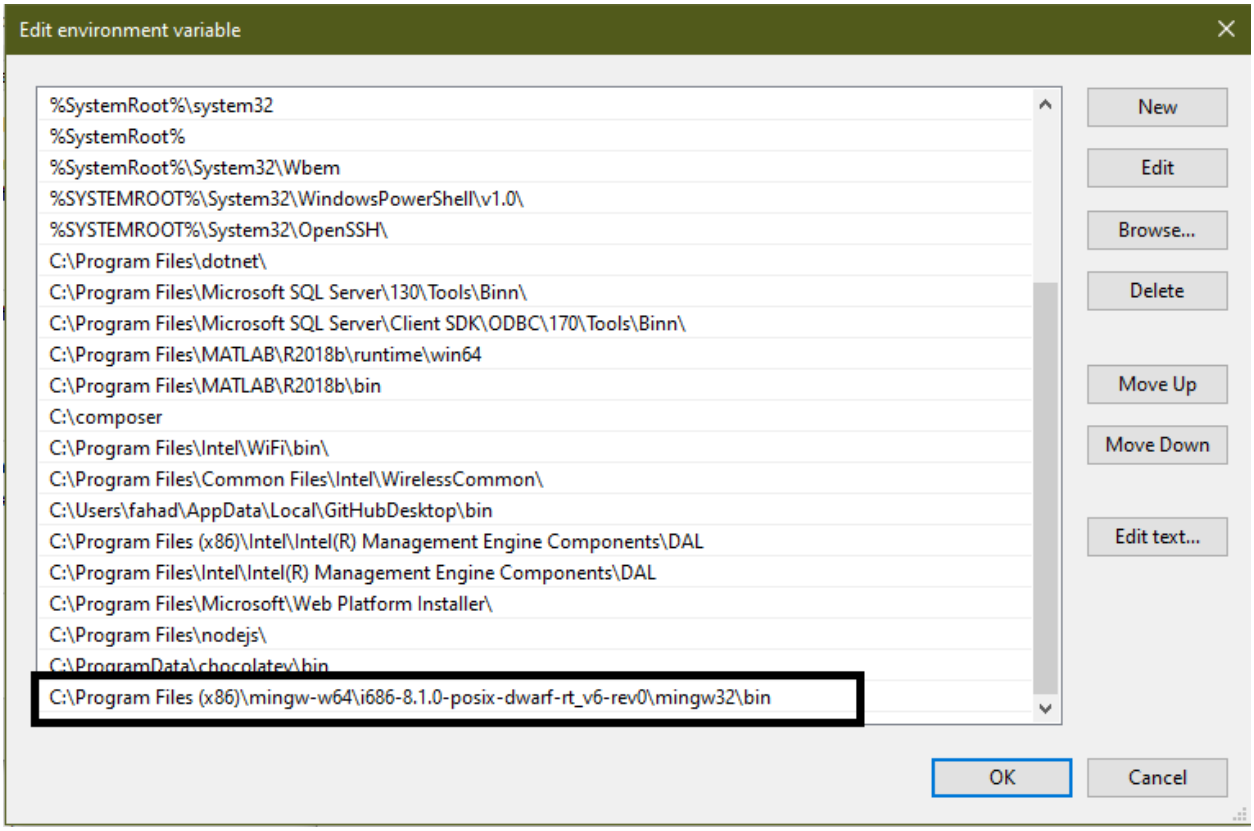
INSTALLING SUBLIME TEXT EDITOR

- Please Install Sublime Text Editor (http://www.sublimetext.com/3).
- https://packagecontrol.io/ go to this link to install package control.
- Go to Preferences/Package Control/ and type "Install Package".

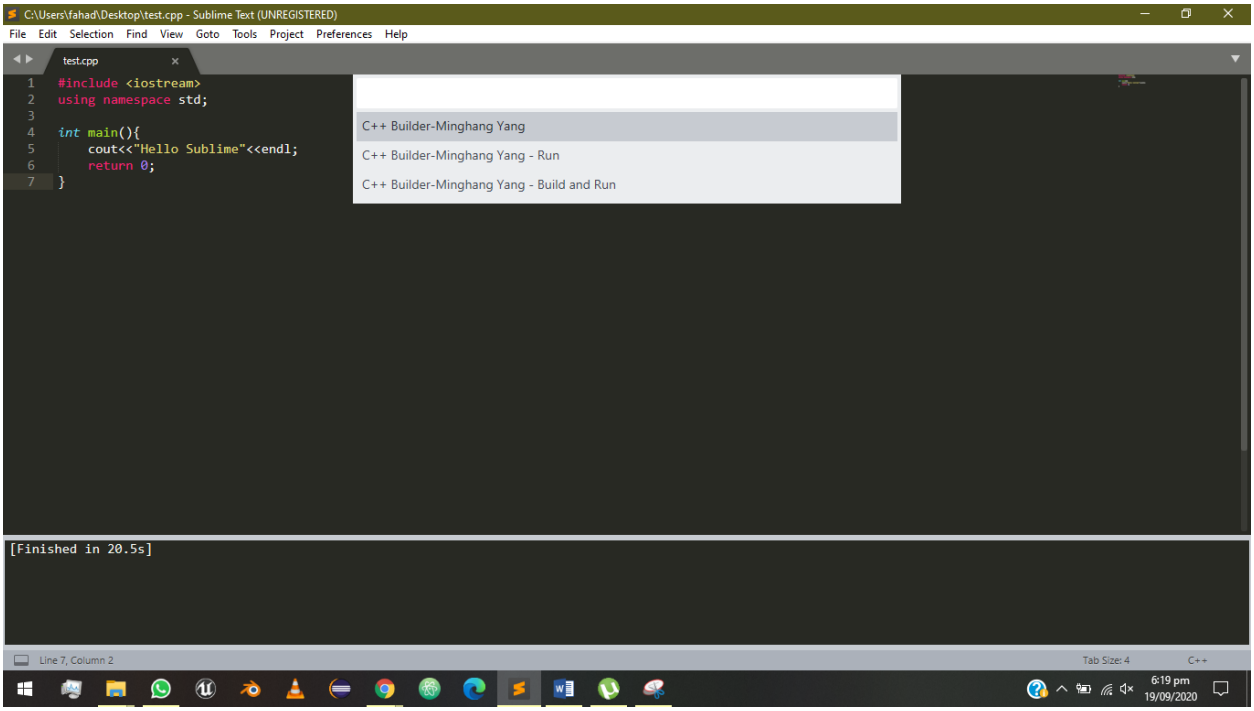


- Here in the text box type C++ Builder and select Minghang Yang.
- Now you need to install GNU Compiler so that Sublime can compile the C++ code (https://sourceforge.net/projects/mingw-w64/).

- Update the path variable in the system environment.



- Write a simple code and run it by pressing ctrl + shift + b and select build and run.



LAB EXERCISES

Question#1: [Marks: 20] **Est. Time: 30 mins**

Write a C++ program that takes integers as input from the user. The input should stop only when all the conditions below are met:

- The user has entered more than 10 numbers.
- Number 5 has entered at least once.
- Sum of given numbers is greater than 100.

Final output: Total number of inputs, sum of numbers and total how many times number 5 was entered as input.

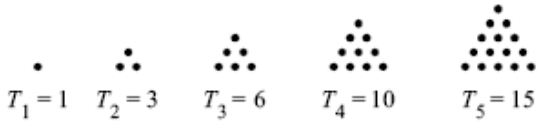
Note: User can input negative integers as well.

Example: If user enters the number: 50, 5, 10, 8, -7, 50, -30, 24, 89, 1, 0.

The output should be:
Total number of inputs: 11
Sum of numbers: 200
No. of times 5 was entered: 1

Question#2: [Marks: 30] **Est. Time: 40 mins**

The ancient Greeks classified numbers geometrically. For example, a number was called "triangular" if that number of pebbles could be arranged in a symmetric triangle as shown in the figure below. The first ten triangular numbers are 1, 3, 6, 10, 15, 21, 28, 36, and 45. Write a C++ program which contains a function that takes as input a number N and prints whether it is triangular or not. You are also required to write the driver code i.e. **main function**.



Note: You do not have to create the shapes you just have to state whether the number is triangular or not. Your program should run on following test samples.

Input	Output
0	True
11	False
1431	True
900	False