**Homework 2 Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

AuE 8930: Computing and Simulation for Autonomy

Instructor: Prof. Bing Li, Clemson University, Department of Automotive Engineering

\* Refer to [Syllabus](https://tinyurl.com/computing-autonomy) for homework (late) submission, grading and plagiarism policies;

\* Submission due Mon. 9/25/2023 11:59 pm via Canvas, include:

* This document (with answers), and with your program results/visualization;
* A .zip file of (modified) source code and data if any, which the TA might run.
* You can choose from either option 1 or option 2
* Submission:
  + Create your Git profile (Github, Bitbucket, etc)
  + Organize your code in homework2.py, 2 files for C++, and commit it to your repo.
  + Submit your homework with a text file containing a link of your homework repo.
* If needed, you can refer a few answers from the reference, then continue by your own.
* Development/coding environment for your programming:
  + IDE like [PyCharm](https://www.jetbrains.com/help/pycharm/installation-guide.html) for Python with [Anaconda](https://www.anaconda.com/products/distribution) as Python installations, or
  + CLion for C++ if you choose option 2, or any others you prefer.

**Option 1 (in Python)**

Homework 2 link: <https://github.com/fengziyue/CU-Computing-Autonomy/blob/master/Homework2/Homework2_Python.md>

In the above link file, there are sample info:

"Sample codes could be found here for your reference. Make sure not to copy them"; there is a hyperlink in the word of 'here' directing you to samples.

**Option 2 (in C++)**

Bonus: for the ones who uses C++, your score will be scaled with 110% until reach max 100.

e.g., if you get 80, it will be scaled to 80 \* 110% = 88

If you are not using IDE, you can compile and run each assignment with the following command:

/usr/bin/g++ AssignmentName.cpp -o main && ./main

The frame of the code is already in the template, you just need to complete the lines marked with "// complete the functions here ..."

The two questions are here: <https://github.com/fengziyue/CU-Computing-Autonomy/tree/master/Homework2>

**Question 1 (20 scores):**

Q1\_Vectors.cpp

**Question 2 (80 scores):**

Q2\_Reference-vs-Value.cpp

P.S.: There are references ... (ref).cpp in the above repo, but you use it at your direction.