IEMS 351 Homework 1

Fall 2024

Due: The homework will be due by midnight (11:59PM) on Oct. 4.

Please follow the steps below to finish the homework:

1. Create a virtual environment using a Python IDE (e.g., PyCharm). Install numpy and matplotlib packages.
2. Finish the implementation of the bisection method and Newton's method.
   (a) Open the Python script `iems351_tools_hw1.py`.
   (b) You will see there are 8 TODO's to finish.
   (c) You cannot change the codes other than the places explicitly asking for your answers.
3. You need to put `iems351_tools_hw1.py` and `iems351_report_hw1.py` in the same folder.
4. After you finish all the TODO's in `iems351_tools_hw1.py`, please run `iems351_report_hw1.py`. The computational results will be automatically saved in a text file called `iems351_hw1_log.txt`.
5. Submit your finished `iems351_tools_hw1.py`, `iems351_report_hw1.py`, and `iems351_hw1_log.txt` to Canvas.

Hints: Before you run `iems351_report_hw1.py`, you can create an extra Python script to test the functions in `iems351_tools_hw1.py`.

The grades will be based on your answers in `iems351_tools_hw1.py` and the computational results in `iems351_hw1_log.txt`. If necessary, we will run your Python scripts to see if the results match your `iems351_hw1_log.txt`.