Instructions for hw1-programming

A. Jupyter Notebook

You should complete this assignment in a Jupyter notebook using:

- Python 3.7 or 3.8
- NetworkX 2.4+

(If you installed the Anaconda distribution as instructed on Canvas, you will have Python 3.8 and NetworkX 2.4+) Follow the instructions on Canvas to install Python and familiarize yourselves with the Jupyter notebook environment.

B. The Assignment (100 points)

First, download the Jupyter notebook that appears on Canvas under Programming assignments/hw1p, as well as the data file homer.dat. Then, launch the Jupyter notebook, which contains clear instructions on what you need to fill in.

IMPORTANT: Do NOT change any function names, delete any cells, or add code outside the functions you are asked to fill in.

C. Submission

Once you have completed the assignment, you should save your notebook as **hw1psolution.ipynb** and upload it to Gradescope. Gradescope will immediately check that:

- your filename is correct
- you have not renamed or changed the parameters of the required functions

If these checks fail, you **MUST** fix your assignment and resubmit. (More on this later.)

D. Grading

Please follow the instructions below carefully.

- **You should not change any code we give. You may import itertools if needed but you may not import any other modules/libraries.** You should be able to solve this assignment using basic Python and NetworkX functions.
- You should double-check that the format and the order of your outputs match our examples.

You will receive 24 points if your code passes our 3 preliminary checks, and the rest of the points if it passes our other checks and hidden test cases.

Please see below for a list of common mistakes and how they will be penalized. **Penalties due to the following errors are non-negotiable.**

1. Incorrect filename: -100 points
2. Renaming the required functions or changing their parameters: -100 points
3. Use of additional modules/libraries that are not built in to Python: -100 points
4. Use of additional modules/libraries that are built in to Python: -30 points
5. Modifying the global process (e.g., adding code outside the functions, introducing global variables): -40 points
6. Modifying the graph (e.g. deleting nodes/edges, adding attributes to nodes): -30 points
7. Implementing BFS instead of DFS: -50 points

The first three mistakes result in a deduction of all 100 points because they will cause our Gradescope autograder to fail. Fortunately, we have set it up so that if these mistakes are detected upon submission, Gradescope will immediately let you know. You are then responsible for fixing your assignment and resubmitting before the deadline.

Finally, we will use software to detect similarity among submissions. As usual, you may brainstorm with a small number of your classmates but you should write up your code **entirely on your own** to avoid receiving a 0 in this assignment and possibly further disciplinary actions.