CS361 Lab 5 Fall 2019
Kevin Bacon Shortest Path
Due Wednesday 10/30/2019 at 11:59PM

Write a program that checks if there is a command line argument and if so, use it for the filename and otherwise it asks the user to enter the filename. The specified file is the following format:

```
film 1
actor 1
actor 2
actor 3

film 2
actor 4
actor 1

film 3
actor 2
actor 4
```

Create a graph structure to store this information so that are edges between actors that are in the same film. The vertices should store the actor's name and the edges store the film's title. Use graph and a shortest path algorithm to compute a shortest path from the actor `Kevin Bacon` to all the other actors. Your program will then allow the user to repeatedly enter an actor's name and print a shortest path from that actor to `Kevin Bacon` that lists the films that connect them. When the user just presses `Enter` without entering an actor's name, exit the loop. Below is a sample run (your program must produce the actor/film output in the same format):

```
python3 bacon.py films-1990.txt
enter actor: Yukiko Ikeda

Yukiko Ikeda was in "Mouri Motonari (1997)" with Shido Nakamura
Shido Nakamura was in "Letters from Iwo Jima (2006)" with Luke Eberl
Luke Eberl was in "Lost in the Pershing Point Hotel (2000)" with William Butler
William Butler was in "My Dog Skip (2000)" with Kevin Bacon

enter actor: Helen Hunt
Helen Hunt was in ""Wild West, The" (1993)" with Laurence Fishburne
Laurence Fishburne was in "Mystic River (2003)" with Kevin Bacon

enter actor:
```

Note that the actual path you get for these names could be different but it cannot be any longer than the path displayed.

You may write your lab in Python or C++. C++ labs will receive 7 bonus points. There are a few sample input files on iLearn. Some are smaller and should be used for testing during development and the larger file contains most of the movies since 1960. You may not redistribute these files as they are based on data files from imdb.com.

When you are finished, submit your lab by emailing your `bacon.py` and `help.txt` files as attachments from your Capital email account to `dreed@capital.edu` with the subject `CS361-9ATT` or `CS361-12ATT` depending on your class time (note there are no spaces and it is all capital letters). If you write your program in C++, place all your code in a file named `bacon.cpp` and submit it along with your `help.txt` file.

I typically do not notice any comments in the body of the message as these emails are filtered automatically. Please send a separate email with a different subject if you have a question.

Your lab will be graded using the rubric posted on iLearn.

If you realize you made a mistake, you may resubmit your program (before the due date). I only keep and grade the last submission. When resubmitting, send all the specified files.