CSCE 4753 Computer Networks Homework #3 version 6.2
Hangman Game Program

30 points

1. In this programming assignment, the student will write a client-server application that implements the game hangman. There will be both a server socket program and a client socket program that are written and work together. In hangman, the first player choses a word and then draws dashes, one for each letter in the word. The server side will play the role of the first player. The second player guesses letters and the first player fills in correct letters in the correct dashes. If the second player guesses a letter that is not in the word, the first player usually draws a diagram one part at a time of a person being hung by a rope. When the drawing of the man being hung is complete, the second player loses because he is hung. On the other hand, if the second player guesses the correct word they win. In this game, we assume that the second player loses (is hung) when guessing incorrectly for the seventh time. Therefore, on the seventh incorrect guess the second player loses. Note that there are seven letters in the word HANGMAN.

2. The user must be able to do the following activities from the client software:
- See the number of letters in the word.
- Guess letters.
- See the position of correct letters in the word.
- Be told when the user loses and display the word.
- Be told when the user wins.

3. Instructions
- The programs MUST be written in the programming language ***Python 3***.
- Design the two programs to be executed on the command line, not with a graphic user interface.
- Name the server program “server.py” and the client program “client.py”.
- **The programs will be tested on turing.uark.edu so make sure that they work there before turning them in.** On turing, Python 3 is implemented by the command “python3”.
- Upload both programs to Blackboard before the due date and include instructions on how to run it. Therefore, there should be three files named server.py, client.py, and readme.txt. All three must be text files.
- Put both your name and UA ID in all three files as a comment.
- **Use only one word in the game, Arkansas**.
- After each guess, display the number of remaining guesses to the user.
- All the intelligence of the game must be in the server, not the client. The client can prompt the user, but it sends and receives information about the game to and from the server. The server knows the secret word, not the client.

4. Socket Programming Rubric
    - If the server or client program does not run, -10 pts.
    - If the client processes the game functionality instead of the server, -20 pts.
    - If a user cannot win and lose, -5 pts.
    - If there is no display of how many letters are in the word, -2 pts.
    - If there is no display of how many guesses are remaining, -2 pts.
    - If the server logs you out after one guess instead of being persistent, -2 pts.
    - Unhandled exception, -1 or -2 pts.
    - If the game manual is not clear or submitted, -1 pt.