On Thursday, February 16th at 6:00AM EST, UTC-5, we will be conducting a brief database maintenance. The event should last about 5 minutes.

Problem 7 - You and your Computer

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20.0 points possible (graded)

Now that your computer can choose a word, you need to give the computer the option to play. Write the code that re-implements the `playGame` function. You will modify the function to behave as described below in the function's comments. As before, you should use the `HAND_SIZE` constant to determine the number of cards in a hand. Be sure to try out different values for `HAND_SIZE` with your program.

Sample Output and Hints

Here is how the game output should look...

Problem Set due Feb 23, 2017 15:30 PST

- Midterm Exam
- Week 5: Object Oriented Programming
- Sandbox

```
Enter n to deal a new hand, r to replay the last hand, or
e to end game: n

Enter u to have yourself play, c to have the computer
play: u

Current Hand: a s r e t t t
Enter word, or a "." to indicate that you are finished:
tatters
"tatters" earned 99 points. Total: 99 points

Run out of letters. Total score: 99 points.

Enter n to deal a new hand, r to replay the last hand, or
e to end game: r

Enter u to have yourself play, c to have the computer
play: c

Current Hand:  a s r e t t t
"stretta" earned 99 points. Total: 99 points

Total score: 99 points.

Enter n to deal a new hand, r to replay the last hand, or
e to end game: x
Invalid command.

Enter n to deal a new hand, r to replay the last hand, or
e to end game: n

Enter u to have yourself play, c to have the computer
play: me
Invalid command.

Enter u to have yourself play, c to have the computer
play: you
Invalid command.

Enter u to have yourself play, c to have the computer
play: c

Current Hand:  a c e d x l n
"axled" earned 65 points. Total: 65 points

Current Hand:  c n
Total score: 65 points.
```

```
Enter n to deal a new hand, r to replay the last hand, or
e to end game: n

Enter u to have yourself play, c to have the computer
play: u

Current Hand: a p y h h z o
Enter word, or a "." to indicate that you are finished:
zap
"zap" earned 42 points. Total: 42 points

Current Hand: y h h o
Enter word, or a "." to indicate that you are finished: oy
"oy" earned 10 points. Total: 52 points

Current Hand: h h
Enter word, or a "." to indicate that you are finished: .
Goodbye! Total score: 52 points.

Enter n to deal a new hand, r to replay the last hand, or
e to end game: r

Enter u to have yourself play, c to have the computer
play: c

Current Hand:  a p y h h z o
"hypha" earned 80 points. Total: 80 points

Current Hand:  z o
Total score: 80 points.

Enter n to deal a new hand, r to replay the last hand, or
e to end game: e
```

Hints about the output

Be sure to inspect the above sample output carefully - very little is actually printed out in this function specifically. Most of the printed output actually comes from the code you wrote in `playHand` and `compPlayHand` - be sure that your code is modular and uses function calls to these helper functions!

You should also make calls to the `dealHand` helper function. You shouldn't make calls to any other helper function that we've written so far - in fact, this function can be written in about 15-20 lines of code.

Here is the above output, with the output from `playHand` and `compPlayHand` obscured:

```
Enter n to deal a new hand, r to replay the last hand, or
e to end game: r
You have not played a hand yet. Please play a new hand
first!

Enter n to deal a new hand, r to replay the last hand, or
e to end game: n

Enter u to have yourself play, c to have the computer
play: u

<call to playHand>

Enter n to deal a new hand, r to replay the last hand, or
e to end game: r

Enter u to have yourself play, c to have the computer
play: c

<call to compPlayHand>

Enter n to deal a new hand, r to replay the last hand, or
e to end game: x
Invalid command.

Enter n to deal a new hand, r to replay the last hand, or
e to end game: n

Enter u to have yourself play, c to have the computer
play: me
Invalid command.

Enter u to have yourself play, c to have the computer
play: you
Invalid command.

Enter u to have yourself play, c to have the computer
play: c

<call to compPlayHand>

Enter n to deal a new hand, r to replay the last hand, or
e to end game: n

Enter u to have yourself play, c to have the computer
play: u

<call to playHand>
```

```
Enter n to deal a new hand, r to replay the last hand, or
e to end game: r

Enter u to have yourself play, c to have the computer
play: c

<call to compPlayHand>

Enter n to deal a new hand, r to replay the last hand, or
e to end game: e
```

Hopefully this hint makes the problem seem a bit more approachable.

A Note On Runtime

You may notice that things run slowly when the computer plays. This is to be expected. If you want (totally optional!), feel free to investigate ways of making the computer's turn go faster - one way is to preprocess the word list into a dictionary (string -> int) so looking up the score of a word becomes much faster in the `compChooseWord` function.

Be careful though - you only want to do this preprocessing *one time* - probably right after we generate the wordList for you (at the bottom of the file). If you choose to do this, you'll have to modify what inputs your functions take (they'll probably take a word dictionary instead of a word list, for example).

IMPORTANT: Don't worry about this issue when running your code in the checker below! We load a very small sample wordList (*much* smaller than 83667 words!) to avoid having your code time out. Your code will work even if you don't implement a form of pre-processing as described.

Entering Your Code

Be sure to only paste your definition for `playGame` from `ps4b.py` in the following box. Do not include any other function definitions.

```
1 def playGame(wordList):
2     """
3     Allow the user to play an arbitrary number of hands.
4
5     1) Asks the user to input 'n' or 'r' or 'e'.
6         * If the user inputs 'e', immediately exit the game.
7         * If the user inputs anything that's not 'n', 'r', or
8
```

```
    2) Asks the user to input a 'u' or a 'c'.
        * If the user inputs anything that's not 'c' or 'u', k

    3) Switch functionality based on the above choices:
        * If the user inputted 'n', play a new (random) hand.
        * Else, if the user inputted 'r', play the last hand a
          But if no hand was played, output "You have not play
```

Press ESC then TAB or click outside of the code editor to exit

Unanswered

Note: the `input` function on Spyder may print an extra newline. That's ok. Do not try to move text backwards using `end='\b'` in a print statement

Submit You have used 0 of 30 attempts

Problem 7 - You and your Computer

Topic: Problem Set 4 / Problem 7

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