HANGMAN PART 2: THE GAME (15/15 points)

Now you will implement the function `hangman`, which takes one parameter - the `secretWord` the user is to guess. This starts up an interactive game of Hangman between the user and the computer. Be sure you take advantage of the three helper functions, `isWordGuessed`, `getGuessedWord`, and `getAvailableLetters`, that you've defined in the previous part.

Hints:

- You should start by noticing where we're using the provided functions (at the top of `ps3_hangman.py`) to load the words and pick a random one. Note that the functions `loadWords` and `chooseWord` should only be used on your local machine, not in the tutor. When you enter in your solution in the tutor, you only need to give your `hangman` function.

- Consider using `lower()` to convert user input to lower case. For example:

```
guess = 'A'
guessInLowerCase = guess.lower()
```

- Consider writing additional helper functions if you need them!

- There are four important pieces of information you may wish to store:

  1. `secretWord` : The word to guess.

2. `lettersGuessed` : The letters that have been guessed so far.

3. `mistakesMade` : The number of incorrect guesses made so far.

4. `availableLetters` : The letters that may still be guessed. Every time a player guesses a letter, the guessed letter must be removed from `availableLetters` (and if they guess a letter that is not in `availableLetters` , you should print a message telling them they've already guessed that - so try again!).

Sample Output
The output of a winning game should look like this...
And the output of a losing game should look like this...

Note that if you choose to use the helper functions `isWordGuessed` , `getGuessedWord` , or `getAvailableLetters` , you do not need to paste your definitions in the box. We have supplied our implementations of these functions for your use in this part of the problem. If you use additional helper functions, you will need to paste those definitions here.

Your function should include calls to `raw_input` to get the user's guess.

Why does my Output Have `None` at Various Places?

```
45              print 'Good guess:',getGuessedWord(secretWord, lettersGuessed)
46          else:
47              print "Oops! That letter is not in my word:",getGuessedWord(secretWord, lettersGuessed)
48              i -=1
49          guesslist.append(guess)
50          if isWordGuessed(secretWord, lettersGuessed):
51              print '-----------'
52              print 'Congratulations, you won!'
53              flag = 0
54              break
55          print '-----------'
56      if flag == 1:
57          print 'Sorry, you ran out of guesses. The word was',secretWord,'.'
58
59
60
```

Correct

Test results

CORRECT

Function call: hangman(c)

Testing if we can correctly guess a short word...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 1 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:c
Good guess: c
-----------
Congratulations, you won!
None
```

Function call: hangman(zzz)

Testing if we can correctly fill in repeat letters ...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 3 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:z
Good guess: zzz
-----------
Congratulations, you won!
None
```

Function call: hangman(c)

Testing if we can incorrectly guess a short word...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 1 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:a
Oops! That letter is not in my word: _
-----------
You have 7 guesses left.
Available Letters: bcdefghijklmnopqrstuvwxyz
Please guess a letter:b
Oops! That letter is not in my word: _
-----------
You have 6 guesses left.
Available Letters: cdefghijklmnopqrstuvwxyz
Please guess a letter:d
Oops! That letter is not in my word: _
-----------
You have 5 guesses left.
Available Letters: cefghijklmnopqrstuvwxyz
Please guess a letter:e
Oops! That letter is not in my word: _
-----------
You have 4 guesses left.
Available Letters: cfghijklmnopqrstuvwxyz
Please guess a letter:f
Oops! That letter is not in my word: _
-----------
You have 3 guesses left.
Available Letters: cghijklmnopqrstuvwxyz
Please guess a letter:g
Oops! That letter is not in my word: _
-----------
You have 2 guesses left.
Available Letters: chijklmnopqrstuvwxyz
```

```
Please guess a letter:h
Oops! That letter is not in my word: _
-----------
You have 1 guesses left.
Available Letters: cijklmnopqrstuvwxyz
Please guess a letter:i
Oops! That letter is not in my word: _
-----------
Sorry, you ran out of guesses. The word was c .
None
```

Function call: hangman(sea)

Testing if we handle repeat correct guesses...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 3 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:a
Good guess: _ _ a
-----------
You have 8 guesses left.
Available Letters: bcdefghijklmnopqrstuvwxyz
Please guess a letter:e
Good guess: _ ea
-----------
You have 8 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxyz
Please guess a letter:a
Oops! You've already guessed that letter: _ ea
-----------
You have 8 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxyz
Please guess a letter:e
Oops! You've already guessed that letter: _ ea
-----------
You have 8 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxyz
Please guess a letter:s
Good guess: sea
-----------
Congratulations, you won!
None
```

Function call: hangman(y)

Testing if we handle repeat incorrect guesses...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 1 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:x
Oops! That letter is not in my word: _
-----------
You have 7 guesses left.
Available Letters: abcdefghijklmnopqrstuvwyz
Please guess a letter:z
Oops! That letter is not in my word: _
-----------
You have 6 guesses left.
Available Letters: abcdefghijklmnopqrstuvwy
Please guess a letter:x
Oops! You've already guessed that letter: _
-----------
You have 6 guesses left.
Available Letters: abcdefghijklmnopqrstuvwy
Please guess a letter:z
Oops! You've already guessed that letter: _
-----------
You have 6 guesses left.
Available Letters: abcdefghijklmnopqrstuvwy
Please guess a letter:y
Good guess: y
-----------
Congratulations, you won!
None
```

Hide output

To make the output less verbose, we are only testing simple input cases here. When your hangman function passes these checks, paste the same code again into the next box to test it on harder input cases.

Check   Save   *You have used 6 of 30 submissions*

HANGMAN - COMPLEX TESTS (20/20 points)

```
 1 def hangman(secretWord):
 2     '''
 3     secretWord: string, the secret word to guess.
 4
 5     Starts up an interactive game of Hangman.
 6
 7     * At the start of the game, let the user know how many
 8       letters the secretWord contains.
 9
10     * Ask the user to supply one guess (i.e. letter) per round.
11
12     * The user should receive feedback immediately after each guess
13       about whether their guess appears in the computers word.
14
15     * After each round, you should also display to the user the
16       partially guessed word so far, as well as letters that the
```

Correct

Test results

Hide output

CORRECT

```
Function call: hangman(zzz)
```

Testing if we can correctly fill in repeat letters and handle capitalized input ...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 3 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:Z
Good guess: zzz
-----------
Congratulations, you won!
None
```

```
Function call: hangman(y)
```

Testing if we handle repeat incorrect guesses...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 1 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:z
Oops! That letter is not in my word: _
-----------
You have 7 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxy
Please guess a letter:z
Oops! You've already guessed that letter: _
-----------
You have 7 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxy
Please guess a letter:z
Oops! You've already guessed that letter: _
-----------
You have 7 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxy
Please guess a letter:z
Oops! You've already guessed that letter: _
-----------
You have 7 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxy
Please guess a letter:y
Good guess: y
-----------
Congratulations, you won!
None
```

Function call: hangman(camel)

Testing if we can correctly guess a word...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 5 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:a
Good guess: _ a_ _ _
-----------
You have 8 guesses left.
Available Letters: bcdefghijklmnopqrstuvwxyz
Please guess a letter:e
Good guess: _ a_ e_
-----------
You have 8 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxyz
Please guess a letter:i
Oops! That letter is not in my word: _ a_ e_
-----------
You have 7 guesses left.
Available Letters: bcdfghjklmnopqrstuvwxyz
Please guess a letter:m
Good guess: _ ame_
-----------
You have 7 guesses left.
Available Letters: bcdfghjklnopqrstuvwxyz
Please guess a letter:n
Oops! That letter is not in my word: _ ame_
-----------
You have 6 guesses left.
Available Letters: bcdfghjklopqrstuvwxyz
Please guess a letter:l
Good guess: _ amel
-----------
You have 6 guesses left.
Available Letters: bcdfghjkopqrstuvwxyz
```

```
Please guess a letter:k
Oops! That letter is not in my word: _ amel
-----------
You have 5 guesses left.
Available Letters: bcdfghjopqrstuvwxyz
Please guess a letter:c
Good guess: camel
-----------
Congratulations, you won!
None
```

Function call: hangman(guanabana)

Testing if we run out of guesses...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 9 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:E
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
You have 7 guesses left.
Available Letters: abcdfghijklmnopqrstuvwxyz
Please guess a letter:O
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
You have 6 guesses left.
Available Letters: abcdfghijklmnpqrstuvwxyz
Please guess a letter:M
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
```

```
-----------
You have 5 guesses left.
Available Letters: abcdfghijklnpqrstuvwxyz
Please guess a letter:L
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
You have 4 guesses left.
Available Letters: abcdfghijknpqrstuvwxyz
Please guess a letter:R
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
You have 3 guesses left.
Available Letters: abcdfghijknpqstuvwxyz
Please guess a letter:S
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
You have 2 guesses left.
Available Letters: abcdfghijknpqtuvwxyz
Please guess a letter:T
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
You have 1 guesses left.
Available Letters: abcdfghijknpquvwxyz
Please guess a letter:Z
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _
-----------
Sorry, you ran out of guesses. The word was guanabana .
None
```

Function call: hangman(senselessness)

Testing if we can correctly fill in multiple letters...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 13 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:a
Oops! That letter is not in my word: _ _ _ _ _ _ _ _ _ _ _ _ _
-----------
You have 7 guesses left.
Available Letters: bcdefghijklmnopqrstuvwxyz
Please guess a letter:e
Good guess: _ e_ _ e_ e_ _ _ e_ _
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxyz
Please guess a letter:s
Good guess: se_ se_ ess_ ess
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrtuvwxyz
Please guess a letter:n
Good guess: sense_ essness
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmopqrtuvwxyz
Please guess a letter:l
Good guess: senselessness
-----------
Congratulations, you won!
None
```

Function call: hangman(cheetah)

Testing if we correctly handle repeat guesses...

Output:

```
Welcome to the game, Hangman!
I am thinking of a word that is 7 letters long.
-----------
You have 8 guesses left.
Available Letters: abcdefghijklmnopqrstuvwxyz
Please guess a letter:A
Good guess: _ _ _ _ _ a_
-----------
You have 8 guesses left.
Available Letters: bcdefghijklmnopqrstuvwxyz
Please guess a letter:e
Good guess: _ _ ee_ a_
-----------
You have 8 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxyz
Please guess a letter:z
Oops! That letter is not in my word: _ _ ee_ a_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrstuvwxy
Please guess a letter:t
Good guess: _ _ eeta_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrsuvwxy
Please guess a letter:a
Oops! You've already guessed that letter: _ _ eeta_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrsuvwxy
Please guess a letter:E
Oops! You've already guessed that letter: _ _ eeta_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrsuvwxy
```

```
Please guess a letter:a
Oops! You've already guessed that letter: _ _ eeta_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrsuvwxy
Please guess a letter:a
Oops! You've already guessed that letter: _ _ eeta_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrsuvwxy
Please guess a letter:t
Oops! You've already guessed that letter: _ _ eeta_
-----------
You have 7 guesses left.
Available Letters: bcdfghijklmnopqrsuvwxy
Please guess a letter:h
Good guess: _ heetah
-----------
You have 7 guesses left.
Available Letters: bcdfgijklmnopqrsuvwxy
Please guess a letter:c
Good guess: cheetah
-----------
Congratulations, you won!
None
```

Hide output

Check   Save   *You have used 3 of 30 submissions*

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