

Programming Assignment 04

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For loops

Instructions

This programming assignment consists of **2 programming exercises**.

You have to:

1. **download** the empty Python files on NYU Classes
2. **edit** them according to the assignment
3. **verify** on your computer that it works
4. **upload** them back on NYU Classes (**do not change the filenames**)

Write a program (in the file `exercise1.py`) which asks the user to enter a positive integer `N` and then draws an hourglass of the corresponding size (`2 * N - 1` lines).

Sample examples (the user input is in red, the printed output is in blue):

```
Enter a positive number: 6  
*****  
      *****  
    *****  
  *****  
   ***  
    *  
   ***  
  *****  
 *****  
*****
```

Exercise 2 - Word statistics

Write a program (in the file `exercise2.py`) that does the following:

1. **Generate a random number between 3 and 6, inclusive** - this will determine how many words to ask for
2. Display: `I'll need [number] words:`
3. Proceed to ask for each word, one at a time: `Word #[number] please >`
4. At the end, your program should **print out**:
 - (a) the longest word (the most recently entered longest if there is a tie)
 - (b) the shortest word (the most recently entered shortest if there is a tie)
 - (c) the average length of all of the words (up to the second decimal point)

Sample examples (the user input is in **red**, the printed output is in **blue**, and the prompt is in black):

```
I'll need 4 words:
Word #1 please > wow
Word #2 please > oh
Word #3 please > amazing
Word #4 please > program
Shortest: oh
Longest: program
Average Length: 4.75
```

```
I'll need 3 words:
Word #1 please > hi
Word #2 please > hi
Word #3 please > hi
Shortest: hi
Longest: hi
Average Length: 2.00
```

```
I'll need 5 words:
Word #1 please > hello
Word #2 please > computer
Word #3 please > python
Word #4 please > world
Word #5 please > homework
Shortest: world
Longest: homework
Average Length: 6.40
```