

Python Data Science Training Homework 0

Using Python 3.6.0 and IDLE or another Python interpreter, write a script which will do the following:

- 1) Ask the program user to input a number between 1 and 10. (You can assume that the user will enter a number in that range, so there's no need to deal with any errors resulting from bad inputs.) To do this, use the `input()` function by putting something like the following line in your code (Note: the `"int"` at the beginning of the line ensures that `my_variable` is an integer):

```
my_variable = int(input("Please enter a number between 0 and 10: "))
```

- 2) Keeping in mind that "programmer counting" starts at 0, create a list where each number *within* the user's range (the number input by the user) corresponds to the letter with that position in the alphabet. Print out this list. An example of the longest possible list is below.

0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J

- So if the range is at least 1, `my_list[0]` will return 'A'. If the range is 1, then `my_list = ['A']`.
 - If the range is at least 2, `my_list[0]` will return 'A' and `my_list[1]` will return 'B', etc. If the range is exactly 2, `my_list = ['A', 'B']`.
- 3) Using a for loop, create a string that includes only the consonants that are in the first list. Print out this string.
 - 4) Using a while loop, create a string that includes only the vowels that are in the first list. Print out this string.

Bonus: If you finish this assignment with time to spare, try it again! The second time, try to build a dictionary with the for loop and a list with the while loop.

Hints:

- You can complete this assignment by using just the concepts of For loops, While loops, lists, and conditional statements.
- Note that you will never need to deal with any letters after J
- One option for completing this assignment involves a list operation we used for a class example, “*in*”. (See Slide 23 and the Lists documentation in Additional Resources)

Example Output:

>> Please enter a number between 0 and 10: **8**

(1) ABCDEFGH

(2) BCDFGH

(3) AE

>> Please enter a number between 0 and 10: **4**

(1) ABCD

(2) BCD

(3) A

>> Please enter a number between 0 and 10: **10**

(1) ABCDEFGHIJ

(2) BCDFGHJ

(3) AEI

Additional Resources:

- Lists
 - <https://docs.python.org/3/tutorial/introduction.html#lists>
 - <https://docs.python.org/3/tutorial/datastructures.html>
- If statements:
 - <http://www.openbookproject.net/books/bpp4awd/ch04.html>
 - <https://docs.python.org/3/tutorial/controlflow.html>
 - Section 4.1 describes If statements, and Sections 4.2-4.3 review some of the other concepts we covered in class
- For Loops
 - https://docs.python.org/3/reference/compound_stmts.html#for
- While loops
 - https://docs.python.org/3/reference/compound_stmts.html#while
- Input
 - <https://docs.python.org/3/library/functions.html#input>
 - <http://www.python-course.eu/input.php>
- Interactive Python tutorials
 - <https://www.codecademy.com/learn/python>
 - <https://www.learnpython.org/>
- General Python resources
 - <http://www.openbookproject.net/books/bpp4awd/>
 - <https://github.com/hearmecode/slides>
- Beginner Set up
 - <https://wiki.python.org/moin/BeginnersGuide>