8.14. Chapter Assessment

Check your understanding

`rainfall_mi` is a string that contains the average number of inches of rainfall in Michigan for every month (in inches) with every month separated by a comma. Write code to compute the number of months that have more than 3 inches of rainfall. Store the result in the variable `num_rainy_months`. In other words, count the number of items with values `> 3.0`.

Hard-coded answers will receive no credit.

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```
rainfall_mi = "1.65, 1.46, 2.05, 3.03, 3.35, 3.46, 2.83, 3.23, 3.5, 2.52, 2.8, 1.85
x = rainfall_mi.split(",")
print(x)
num_rainy_months = 0
for i in x:
    if (float(i)>3.00):
        num_rainy_months += 1
print(num_rainy_months)
```

```
['1.65', ' 1.46', ' 2.05', ' 3.03', ' 3.35', ' 3.46', ' 2.83', ' 3.23', ' 3.5', ' 2.52', ' 2.8', '
1.85']
5
```

Activity: 1 -- ActiveCode (assess_ps3_1_1_1)

Result	Actual Value	Expected Value	Notes
Pass	'for'	'rainf...nths)'	Testing that your code has a for loop (Don't worry about actual and expected values).
Pass	5	5	Testing that num_rainy_months has the right value

Expand Differences

You passed: 100.0% of the tests

The variable `sentence` stores a string. Write code to determine how many words in `sentence` start and end with the same letter, including one-letter words. Store the result in the variable `same_letter_count`.

Hard-coded answers will receive no credit.

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```
sentence = "students flock to the arb for a variety of outdoor activities such as j

# Write your code here.
same_letter_count = 0
for i in sentence.split():
    if (i[0] == i[-1]):
        same_letter_count += 1
print(same_letter_count)


```

```
2
```

Activity: 2 -- ActiveCode (assess_ps3_1_1_2)

Result	Actual Value	Expected Value	Notes
Pass	2	2	Checking that same_letter_count has the correct value
Pass	'for '	'sente...nt)\n\n'	Testing that your code has a for loop

Expand Differences

You passed: 100.0% of the tests

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Write code to count the number of strings in list `items` that have the character `w` in it. Assign that number to the variable `acc_num`.

HINT 1: Use the accumulation pattern!

HINT 2: the `in` operator checks whether a substring is present in a string.

Hard-coded answers will receive no credit.

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```
items = ["whirring", "wow!", "calendar", "wry", "glass", "", "llama","tumultuous",'
acc_num = 0
for i in items:
    if ("w" in i):
        acc_num += 1
print(acc_num)
```

```
4
```

Activity: 3 -- ActiveCode (assess_ps3_1_1_3)

Result	Actual Value	Expected Value	Notes
Pass	' in '	'items...um)\n\n'	Testing that you are using the in operator.
Pass	4	4	Testing that acc_num has been set to the number of strings that have 'w' in them.

Expand Differences

You passed: 100.0% of the tests

Write code that counts the number of words in `sentence` that contain *either* an "a" or an "e". Store the result in the variable `num_a_or_e`.

Note 1: be sure to not double-count words that contain both an a and an e.

HINT 1: Use the `in` operator.

HINT 2: You can either use `or` or `elif`.

Hard-coded answers will receive no credit.

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```
sentence = "python is a high level general purpose programming language that can be
x = sentence.split()
print(x)
num_a_or_e = 0
for i in x:
      if ("a" in i or "e" in i):
        num_a_or_e += 1
print(num_a_or_e)
```

```
['python', 'is', 'a', 'high', 'level', 'general', 'purpose', 'programming', 'language', 'that', 'c
an', 'be', 'applied', 'to', 'many', 'different', 'classes', 'of', 'problems.']
14
```

Activity: 4 -- ActiveCode (assess_ps3_1_1_4)

Result	Actual Value	Expected Value	Notes
Pass	' in '	'sente... '	Testing that you are using the in operator.
Pass	14	14	Testing that num_a_or_e has been set to the correct number.

Expand Differences

You passed: 100.0% of the tests

Write code that will count the number of vowels in the sentence `s` and assign the result to the variable `num_vowels`. For this problem, vowels are only a, e, i, o, and u. Hint: use the `in` operator with `vowels`

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```
s = "singing in the rain and playing in the rain are two entirely different situati
vowels = ['a','e','i','o','u']
num_vowels = sum([1 for i in s if i in vowels])
print(num_vowels)

# Write your code here.
num_vowels = 0
for i in s:
    if (i in vowels):
        num_vowels += 1
print(num_vowels)
```

```
32
32
```

Activity: 5 -- ActiveCode (assess_ps3_1_1_5)

Result	Actual Value	Expected Value	Notes
Pass	32	32	testing whether num_vowels is set correctly
Pass	'for'	's = "...ls)\n\n'	Testing that you are using a for loop.

Expand Differences

You passed: 100.0% of the tests

Create one conditional so that if "Friendly" is in `w`, then "Friendly is here!" should be assigned to the variable `wrd`. If it's not, check if "Friend" is in `w`. If so, the string "Friend is here!" should be assigned to the variable `wrd`, otherwise "No variation of friend is in here." should be assigned to the variable `wrd`. (Also consider: does the order of your conditional statements matter for this problem? Why?)

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```
x = w.split()
wrd = ''
for i in x:
    if ("Friendly" in i):
        wrd = "Friendly is here!"
        break
    elif ("Friend" in i):
        wrd = "Friend is here!"
        break
    else:
        wrd = "No variation of friend is in here."
        break
print(wrd)
```

```
Friend is here!
```

Activity: 6 -- ActiveCode (assess_ac3_1_1_6)

Result	Actual Value	Expected Value	Notes
Pass	'Friend is here!'	'Friend is here!'	Testing the value of wrd
Pass	'else'	'w = "...wrd)\n'	Checking that you used an else clause.
Pass	'elif'	'w = "...wrd)\n'	Checking that you used an elif clause.

Expand Differences

Expand Differences

You passed: 100.0% of the tests

We have written conditionals for you to use. Create the variable x and assign it some integer so that at the end of the code, `output` will be assigned the string `"Consistently working"`.

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```
x = 10
if x >= 10:
    output = "working"
else:
    output = "Still working"
```

```
if x > 12:
    output = "Always working"
elif x < 7:
    output = "Forever working"
else:
    output = "Consistently working"
print(output)

```

```
Consistently working
```

Activity: 7 -- ActiveCode (assess_ac3_1_1_7)

Result	Actual Value	Expected Value	Notes	
Pass	'Consi...rking'	'Consi...rking'	Testing the value of output	Expand Differences
Pass	10	[7, 8..., 12]	Testing that x was assigned a correct number	Expand Differences

You passed: 100.0% of the tests

Write code so that if `"STATS 250"` is in the list `schedule`, then the string `"You could be in Information Science!"` is assigned to the variable `resp`. Otherwise, the string `"That's too bad."` should be assigned to the variable `resp`.

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```
schedule = ["SI 106", "STATS 250", "SI 110", "ENGLISH 124/125"]
resp = ""
for i in schedule:
    #print(i)
    if (i=="STATS 250"):
        resp = "You could be in Information Science!"
        break
    else:
        resp = "That's too bad."

print(resp)

```

```
You could be in Information Science!
```

Activity: 8 -- ActiveCode (assess_ac3_1_1_8)

Result	Actual Value	Expected Value	Notes	
Pass	'You c...ence!'	'You c...ence!'	Testing the value of resp given the schedule list provided.	Expand Differences
Pass	'if'	'sched...esp)\n'	Testing that you used an if clause.	Expand Differences

You passed: 100.0% of the tests

Create the variable `z` whose value is `30`. Write code to see if `z` is greater than `y`. If so, add 5 to `y`'s value, otherwise do nothing. Then, multiply `z` and `y`, and assign the resulting value to the variable `x`.

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```
y = 22
z = 30
if (z>y):
    y += 5
x = z*y
print(x)

```

```
810
```

Activity: 9 -- ActiveCode (assess_ac3_1_1_9)

Result	Actual Value	Expected Value	Notes
Pass	810	810	Testing the value of x
Pass	30	30	Testing the value of z.

You passed: 100.0% of the tests

For each string in `wrd_lst`, find the number of characters in the string. If the number of characters is less than 6, add 1 to `accum` so that in the end, `accum` will contain an integer representing the total number of words in the list that have fewer than 6 characters.

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```
1 wrd_lst = ["Hello", "activecode", "Java", "C#", "Python", "HTML and CSS", "Javascri
2 accum = 0
3 for i in wrd_lst:
4     if (len(i) < 6):
5         accum += 1
6
7 print(accum)
8
9
```

```
5
```

Activity: 10 -- ActiveCode (assess_ac3_1_1_10)

Result	Actual Value	Expected Value	Notes
Pass	5	5	Testing the value of accum
Pass	'for '	'wrd_l... \n'	Testing that your code has a for loop

Expand Differences

You passed: 100.0% of the tests

You have attempted 11 of 10 activities on this page

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Completed. Well Done!
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