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Week 8



Intro to Python

Objectives

Chapter 10

- Create lists
 - Access elements by index
 - Traverse a list with a for loop
 - Understand built-in list methods
-

Making a list

`my_list = []` # elements enclosed by brackets

`my_list = ["red", "orange"]` # separate elements with commas

`my_list = [9.3, "green", 4]` # can contain mixed types

Common Operations

`s1 = [2, 7, 4]`

`s2 = [1, 2, 3]`

`x in s`

returns True or False

`len(s)`

returns the length of the list

`min(s), max(s)`

returns the smallest/largest element

`s1 + s2`

concatenates the lists, does NOT add the elements

`s1 * n`

n copies of the list, concatenated

Indexed Variables

`s = [2, 7, 4, 8]`

`[start : end]`

`s [i]`

returns the ith element of s

`s [i : j]`

returns elements from i to j - 1

What would `s[-1]` return?

`s[1:3]`?

`s[:3]`?

Play with it!

Open IDLE

Make your own list (anything you want)

Write code that prints the length, min, max, and 2nd element

Then concatenate 3 copies of your list and print the result

List Methods

<code>my_list.append(x)</code>	adds element x to the end of a list
<code>my_list.count(x)</code>	returns number of times x appears in the list
<code>my_list.pop(i)</code>	removes the ith element in the list
<code>my_list.pop()</code>	removes the last element in the list
<code>my_list.remove(x)</code>	removes the first occurrence of x
<code>my_list.sort()</code>	sorts the elements in ascending order

Traverse a list

Visit every element in the list using a for loop

```
for element in my_list:  
    print(element)
```


Comparison Operators

Use these to compare elements in a list:

==

!=

>

<

>=

<=

Exercise

Write a function to count the number of strings where the length is 2 or more and the first and last character are same from a given list of strings.

Sample List : ['abc', 'xyz', 'aba', '1221']

Expected Result : 2

Solution

```
def match_words (words):  
  
    count = 0  
    for word in words:  
        If len(word) > 1 and word[0] == word[-1]:  
            count += 1  
    return count
```