Zeru-Zhou-Project1

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1 Project 1 – Zeru Zhou

TA Help: NA

Collaboration: NA

- Get help from Dr. Ward's videos

1.1 Question 1

[3]:
```
%load_ext rpy2.ipython
```

```
The rpy2.ipython extension is already loaded. To reload it, use:
  %reload_ext rpy2.ipython
```

[4]:
```
%%R
my_vector <- c(1,2,3,4,5)
my_vector
```

```
[1] 1 2 3 4 5
```

[5]:
```
my_vector = (1,2,3,4,5)
my_vector
```

[5]:
```
(1, 2, 3, 4, 5)
```

[6]:
```
my_tuple = (1,2,3,4,5,)
my_tuple
```

[6]:
```
(1, 2, 3, 4, 5)
```

[7]:
```
my_list = [1,2,3,4,5,]
my_list
```

[7]:
```
[1, 2, 3, 4, 5]
```

[8]:
```
import numpy as np

my_array = np.array([1,2,3,4,5])
```

```
my_array
```

[8]:
```
array([1, 2, 3, 4, 5])
```

[9]:
```
my_tuple = (1,2,3,4,5)
my_tuple[0] = 10
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-9-f0f8a35a3a36> in <module>
      1 my_tuple = (1,2,3,4,5)
----> 2 my_tuple[0] = 10

TypeError: 'tuple' object does not support item assignment
```

[10]:
```
my_list = [1,2,3,4,5]
my_list[0] = 10
my_list
```

[10]:
```
[10, 2, 3, 4, 5]
```

As we can see from the examples provided in the project, list is mutable but tuple is not. Numpy is a great package that could calculate data in dataframe form, or array.

1.2 Question 2

[11]:
```
my_list = [1,2,3,4,5]
my_list.append(7)
my_list.reverse()
my_list.append(6)
my_list
```

[11]:
```
[7, 5, 4, 3, 2, 1, 6]
```

As we can see, by appending 7, reversing, and then appending 6, we got the element in the list with correct order.

1.3 Question 3

[12]:
```
my_list[::2]
```

[12]:
```
[7, 4, 2, 6]
```

[13]:
```
my_list[::-1]
```

[13]:
```
[6, 1, 2, 3, 4, 5, 7]
```

[14]:
```
my_list[1:4]
```

[14]:
```
[5, 4, 3]
```

As above, step 2/reverse order/got 2nd through 4th are displayed.

1.4 Question 4

[17]:
```
import csv
file = open('/depot/datamine/data/noaa/2020.csv')
read_file = csv.reader(file, delimiter = ',')
for row in read_file:
    print(row[3])
    break
file.close()
```

```
168
```

The code is listed above. We got the 4th column of each row, here used break to prevent crashing.

1.5 Question 5

[3]:
```
import csv
with open('/depot/datamine/data/noaa/2020.csv') as my_file:
    reader = csv.reader(my_file)

    # TODO: create variable to store how many rows we've printed so far
    count = 0

    for row in reader:
        print(row)

        # TODO: increment the variable storing our count, since we've printed a␣
 ↪row
        count += 1

        # TODO: if we've printed 10 rows, run the break statement
        if count == 10 :
            break
```

```
['AE000041196', '20200101', 'TMIN', '168', '', '', 'S', '']
['AE000041196', '20200101', 'PRCP', '0', 'D', '', 'S', '']
['AE000041196', '20200101', 'TAVG', '211', 'H', '', 'S', '']
['AEM00041194', '20200101', 'PRCP', '0', '', '', 'S', '']
['AEM00041194', '20200101', 'TAVG', '217', 'H', '', 'S', '']
['AEM00041217', '20200101', 'TAVG', '205', 'H', '', 'S', '']
['AEM00041218', '20200101', 'TMIN', '148', '', '', 'S', '']
['AEM00041218', '20200101', 'TAVG', '199', 'H', '', 'S', '']
```

```
['AFM00040938', '20200101', 'PRCP', '23', '', '', 'S', '']
['AFM00040938', '20200101', 'TAVG', '54', 'H', '', 'S', '']
```

As the code above, first 10 rows are printed.

1.6 Pledge

By submitting this work I hereby pledge that this is my own, personal work. I've acknowledged in the designated place at the top of this file all sources that I used to complete said work, including but not limited to: online resources, books, and electronic communications. I've noted all collaboration with fellow students and/or TA's. I did not copy or plagiarize another's work.

> As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together – We are Purdue.