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Python intro to data science

```python
'''Exercise 1
Given the following list: numbers = [9, -3, 7, 2, 1, 2, 9, 9, 8, 2, 0, 0, 9, 2], ask user to enter
a number. Pass list along with the number entered into function myFind() and find any oc-
currences of the number in the list. Append the index/indices of the number found into list
listIndex. Return listIndex in main program and print list'''
def myFind(numbers,userNum):
    listIndex=[]
    for i in range(len(numbers)):
        if userNum==numbers[i]:
            listIndex.append(i)
    return listIndex
numbers = [9, -3, 7, 2, 1, 2, 9, 9, 8, 2, 0, 0, 9, 2]
userNum = int(input("Enter a number: "))
listIndex=myFind(numbers,userNum)
print(listIndex)
```

```
/usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_1.py
raulrodriguez@Rauls-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_1.py
Enter a number: 2
[3, 5, 9, 13]
raulrodriguez@Rauls-Air WorkSpaceVSPython %
```

```python
'''Exercise 2
Given the following string: str1 = 'Computer Science', use a filter to filter out consonants, i.e.,
your output list should contain any vowels found'''
def myFunction(str1):
    for i in range(len(str1)):
        if str1[i]=='a' or str1[i]=='e' or str1[i]=='i' or str1[i]=='o' or str1[i]=='u':
            return True
str1='Computer Science'
result=filter(myFunction,str1)
print(list(result))
```

```
/usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_2.py
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_2.py
['o', 'u', 'e', 'i', 'e', 'e']
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```

```python
'''Exercise 3
Given the following string: str1 = 'Computer Science', use a filter to filter out any lower case
characters, i.e., your output list should contain any upper case characters only
'''
def myFunction(str1):
    for i in range(len(str1)):
        if ord(str1[i])>=97 and ord(str1[i])<=122:
            return True
str1='Computer Science'
result=filter(myFunction,str1)
print(list(result))
```

```
s/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_3.py
['o', 'm', 'p', 'u', 't', 'e', 'r', 'c', 'i', 'e', 'n', 'c', 'e']
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```

Lab4_4.py > ...

```python
'''Exercise 4
Create a function named greetingFunction that takes in two arguments, the name of the user
and a greeting, and prints out the greeting along with user's name; both arguments are given as
user input. Re-write the the functionality of the greetingFunction using a lambda expression'''
def greetingFuction(name,greeting):
    print(greeting+name)
name = ' '+input("Enter your name: ")
greeting = input("Enter a greeting: ")
greetingFuction(name,greeting)

result = lambda name,greeting: greeting+name
print(result(name,greeting))
```

```
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_4.py
Enter your name: Raul
Enter a greeting: Hello
Hello Raul
Hello Raul
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```

Lab4_5.py > ...

```python
'''Exercise 5
Given the following list: grades = [90, 74, 87, 80], use a lambda expression to compute the
average grade. Your algorithm should compute the average grade regardless of the length of the
list. Use only the sum and len built-in functions'''
grades = [90, 74, 87, 80]
average = lambda args: sum(args)/len(args)
print(average(grades))
```

```
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab4_5.py
82.75
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```