

## Data Analytics Assignment - 3 Python

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Project Name: Visualizing and Predicting Heart Diseases  
with an Interactive Dash Board

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### ▼ Exercises

Answer the questions or complete the tasks outlined in bold below, use the specific method described if applicable.

**\*\* What is 7 to the power of 4?\*\***

```
pow=7**4  
print(pow)
```

```
↳ 2401
```

**\*\* Split this string:\*\***

```
s = "Hi there Sam!"
```

***\*into a list. \****

```
s="Hi there Sam!"  
String_list=s.split(" ")  
print (String_list)
```

```
['Hi', 'there', 'Sam!']
```

```
s="Hi there dad!"  
String_list=s.split(" ")  
print (String_list)
```

```
['Hi', 'there', 'dad!']
```

**\*\* Given the variables:\*\***

```
planet = "Earth"
diameter = 12742
```

**\*\* Use .format() to print the following string: \*\***

```
The diameter of Earth is 12742 kilometers.
```

```
planet = "Earth"
diameter = 12742
print("The diameter of {} is {} kilometers.".format(planet,diameter))
```

```
The diameter of Earth is 12742 kilometers.
```

```
The diameter of Earth is 12742 kilometers.
```

**\*\* Given this nested list, use indexing to grab the word "hello" \*\***

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
lst[3][1][2]
```

```
['hello']
```

**\*\* Given this nest dictionary grab the word "hello". Be prepared, this will be annoying/tricky \*\***

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
d['k1'][3].get('tricky')[3].get('target')[3]
```

```
'hello'
```

**\*\* What is the main difference between a tuple and a list? \*\***

--> Tuple is immutable whereas List is mutable. Hence Tuple is faster than list.

--> Tuple can be represented as paranthesis() but List is represented in square brackets []

**\*\* Create a function that grabs the email website domain from a string in the form: \*\***

user@domain.com

**So for example, passing "[user@domain.com](#)" would return: domain.com**

```
def domainGet(mail):  
    return mail.split('@')[1]
```

```
domainGet('user@domain.com')
```

```
'domain.com'
```

**\*\* Create a basic function that returns True if the word 'dog' is contained in the input string. Don't worry about edge cases like a punctuation being attached to the word dog, but do account for capitalization. \*\***

```
def dogcheck(input):  
    Chk=input.lower()  
    return 'dog' in Chk.split()  
dogcheck('Is there a dog here?')
```

```
True
```

**\*\* Create a function that counts the number of times the word "dog" occurs in a string. Again ignore edge cases. \*\***

```
def dogcheck(input):  
    count=0  
    for val in input.lower().split():  
        if(val=="dog"):  
            count+=1;  
    return count  
C=dogcheck('IS there a dog here?')  
print(C)
```

```
1
```

## ▼ Problem

*\*You are driving a little too fast, and a police officer stops you. Write a function to return one of 3 possible results: "No ticket", "Small ticket", or "Big Ticket". If your speed is 60 or less, the result is "No*

*Ticket". If speed is between 61 and 80 inclusive, the result is "Small Ticket". If speed is 81 or more, the result is "Big Ticket". Unless it is your birthday (encoded as a boolean value in the parameters of the function) -- on your birthday, your speed can be 5 higher in all cases. \**

```
def caught_speeding(speed, is_birthday):
```

```
    if is_birthday:
        speeding = speed - 5
    else:
        speeding = speed

    if speeding > 80:
        return 'Big Ticket'
    elif speeding > 60:
        return 'Small Ticket'
    else:
        return 'No Ticket'
```

```
print(caught_speeding(65,0))
```

```
    Small Ticket
```

```
def caught_speeding(speed, is_birthday):
```

```
    if is_birthday:
        speeding = speed - 5
    else:
        speeding = speed

    if speeding > 80:
        return 'Big Ticket'
    elif speeding > 60:
        return 'Small Ticket'
    else:
        return 'No Ticket'
```

```
print(caught_speeding(95,1))
```

```
    Big Ticket
```

```
def caught_speeding(speed, is_birthday):
```

```
    if is_birthday:
        speeding = speed - 5
    else:
        speeding = speed
```

```

if speeding > 80:
    return 'Big Ticket'
elif speeding > 60:
    return 'Small Ticket'
else:
    return 'No Ticket'

```

```
print(caught_speeding(55,0))
```

```
No Ticket
```

Create an employee list with basic salary values(at least 5 values for 5 employees) and using a for loop retrieve each employee salary and calculate total salary expenditure.

```

employee_salary=[10000,20000,30000,40000,50000,6000]
for salary in range(0,len(employee_salary)):
    print('employee%d = %d'%(salary+1,employee_salary[salary]))
print('Total Expenditure= ',sum(employee_salary))

```

```

employee1 = 10000
employee2 = 20000
employee3 = 30000
employee4 = 40000
employee5 = 50000
employee6 = 6000
Total Expenditure= 156000

```

Create two dictionaries in Python:

First one to contain fields as Empid, Empname, Basicpay

Second dictionary to contain fields as DeptName, DeptId.

Combine both dictionaries.

```

dict1={'Empid':'ID1','Empname':'BOB','Basicpay':'40000'}
dict2={'DeptName':'production','DeptId':'Dept01'}
dict1.update(dict2)
dict1

```

```

{'Empid': 'ID1',
 'Empname': 'BOB',
 'Basicpay': '40000',
 'DeptName': 'production',
 'DeptId': 'Dept01'}

```