

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? ****

In []:

```
import math  
a = pow(7,4)  
print(a)
```

2401

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

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

into a list.

In []:

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

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

In []:

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

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

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

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

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

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

In []:

```
a = "the diameter of ear
```

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

```
In [ ]: list is "mutable" and tu
```

```
Out[ ]: False
```

**** 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

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

```
In [ ]: domainGet('user@domain.com')
```

```
Out[ ]: '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. ****

```
In [ ]: def findDog(st):  
        return 'dog' in st.]
```

```
In [ ]: findDog('Is there a dog
```

```
Out[ ]: True
```

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

```
In [ ]: def countDog(st):  
        count = 0  
        for word in st.lower:  
            if word == 'dog':  
                count += 1  
        return count
```

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.

In []:

```
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'
```

In []:

```
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'  
caught_speeding(81, False)
```

Out[]: 'Big Ticket'

In []:

```
def caught_speeding(speed, is_birthday):  
    if is_birthday:  
        speeding = speed - 1  
    else:  
        speeding = speed  
  
    if speeding > 80:  
        return 'Big Ticket'  
    elif speeding > 60:  
        return 'Small Ticket'  
    else:  
        return 'No Ticket'  
caught_speeding(81, True)
```

Out[]: 'Small 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.

In []:

```
employee=[10000,40000,30000,20000,50000]  
pf=2000  
da=1000  
hra=1500  
for i in employee:  
    totexpense=pf+da+hra+i  
    print(i-(totexpense))
```


5500
35500
25500
15500
30500

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.

In []:

```
def Merge(dict1, dict2):  
    return(dict2.update(  
dict1 = {'Empid': 10, 'E  
dict2 = {'DeptName': 'HR  
print(Merge(dict1, dict2  
print(dict2)  
None  
{'DeptName': 'HR', 'Dept
```


None

```
{'DeptName': 'HR', 'Dept  
Id': 4, 'Empid': 10, 'Em  
pname': 8, 'Basicpay': 2  
0000}
```

```
Out[ ]: {'DeptName': 'HR', 'Dept  
Id': 4, 'Empid': 10, 'Em  
pname': 8, 'Basicpay': 2  
0000}
```