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 [ ]:
```python
import math
a = pow(7,4)
print(a)
```

2401

** Split this string:**

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

into a list.

In [ ]:
```python
s = "Hi there Sam!"
a = s.split()
print(list(a))
```

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

In [ ]:
```python
s = "Hi there dad!"
a = s.split()
print(list(a))
```

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

** Given the variables:**

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

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

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

In [ ]:
```python
a = "the diameter of earth is {} kilometer"
```

In [ ]:
```python
print(a.format(12742))
```

```
the diameter of earth is 12742 kilometer
```

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

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

In [ ]:
```python
lst[3][1][2][0]
```

Out[ ]: 'hello'

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

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

In [ ]:
```python
d['k1'][3]['tricky'][3]['target'][3]
```

Out[ ]: 'hello'

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

In [ ]:
```python
list is "mutable" and tuple is "immutable"
```

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

```
def domainGet(email):
    return email.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 findDog(st):
    return 'dog' in st.lower().split()
```

```
findDog('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 countDog(st):
    count = 0
    for word in st.lower().split():
        if word == 'dog':
            count += 1
    return count
```

```
countDog('This dog runs faster than the other dog dude!')
```

```
In [ ]:   countDog('This dog runs faster than the other dog dude!')
```

Out[ ]: 2

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[ ]: 'Small Ticket'

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

In [ ]:
```python
employee=[10000,40000,30000,20000,35000]
pf=2000
da=1000
hra=1500
for i in employee:
  totexpense=pf+da+hra
  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 [ ]:
```python
def Merge(dict1, dict2):
    return(dict2.update(dict1))
dict1 = {'Empid': 10, 'Empname': 8, 'Basicpay':20000}
dict2 = {'DeptName': 'HR', 'DeptId': 4}
print(Merge(dict1, dict2))
print(dict2)
None
{'DeptName': 'HR', 'DeptId': 4, 'Empid': 10, 'Empname': 8, 'Basicpay': 20000}
```

```
None
{'DeptName': 'HR', 'DeptId': 4, 'Empid': 10, 'Empname': 8, 'Basicpay': 20000}
```

Out[ ]: {'DeptName': 'HR', 'DeptId': 4, 'Empid': 10, 'Empname': 8, 'Basicpay': 20000}