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 [1]: 7**4
```

```
Out[1]: 2401
```

Split this string:

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

into a list.

```
In [7]: s = 'Hi there Sam!'
        s.split()
```

```
Out[7]: ['Hi', 'there', 'Sam!']
```

```
In [8]: s = 'Hi there dad!'
        s.split()
```

```
Out[8]: ['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 [11]: planet = "Earth"
         diameter = 12742
```

```
In [13]: print("The diameter of {} is {} kilometers.".format(planet,diameter))
```

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

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

```
In [14]: lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

In [16]:
```python
lst[3] [1] [2] [0]
```

Out[16]: 'hello'

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

In [17]:
```python
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [18]:
```python
d['k1'][3]['tricky'][3]['target'][3]
```

Out[18]: 'hello'

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

In [ ]:
```python
#List is mutable
#Tuple is immutable
```

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 [19]:
```python
def domainGet(email):
    return email.split('@')[-1]
```

In [20]:
```python
domainGet('user@domain.com')
```

Out[20]: '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 [21]:
```python
def findDog(st):
    return 'dog' in st.lower().split()
```

In [22]:
```python
findDog('Is there a dog here')
```

Out[22]: True

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

```
In [27]: def countDog(st):
             count = 0
             for word in st.lower().split():
                 if word == 'dog':
                     count += 1
             return count
```

```
In [28]: countDog('This dog runs faster than the other dog dude!')
```

Out[28]: 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 [29]: 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 [30]: caught_speeding(81,False)
```

Out[30]: 'Big Ticket'

```
In [31]: caught_speeding(81,True)
```

Out[31]: '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.

Name	Age	Salary	Hire date	Origin
Steven	56	24000	17-Jun-2003	USA
Neena	45	17000	21-Sep-2005	Londan
Lex	34	17000	13-Jan-2001	France
Bruce	47	6000	16-May-2007	Malasiya
David	59	4800	25-Jun-2005	Canada

In [3]:
```python
Numbers=[24000,17000,17000,6000,4800]
sum1 = 0
for i in Numbers:
    sum1 = sum1+i
    print("total salary expenditure:",sum1)
```

```
total salary expenditure: 24000
total salary expenditure: 41000
total salary expenditure: 58000
total salary expenditure: 64000
total salary expenditure: 68800
```

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 [10]:
```python
d1 = {'Empid':100,'Empname':'Steven','Basicpay':24000}
d2 = {'DeptName':'Administration','DeptId':10}
```

In [11]:
```python
d1
```

Out[11]:
```
{'Empid': 100, 'Empname': 'Steven', 'Basicpay': 24000}
```

In [12]:
```python
d2
```

Out[12]:
```
{'DeptName': 'Administration', 'DeptId': 10}
```

In [13]:
```python
d1.update(d2)
```

In [14]:
```python
d1
```

Out[14]:
```
{'Empid': 100,
 'Empname': 'Steven',
 'Basicpay': 24000,
 'DeptName': 'Administration',
 'DeptId': 10}
```