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]:
```
print(7**4)
```
2401

Split this string:

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

into a list.

In [2]:
```
s = "Hi there Sam!"
```

In [3]:
```
print(s.split())
```
['Hi', 'there', 'Sam!']

Given the variables:

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

Use .format() to print the following string:

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

In [4]:
```
planet = "Earth"
diameter = 12742
```

In [5]:
```
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 [6]:
```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

In [7]:
```
lst[3][1][2][0]
```
Out[7]: 'hello'

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

In [8]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [9]:
```
print(d['k1'][3]['tricky'][3]['target'][3])
```
hello

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

In [10]:
```
"""List is mutable, that is elements of list can be updated or deleted
But tuple is immutable, that is elements of tuple cannot be updated or deleted"""
```
Out[10]: 'List is mutable, that is elements of list can be updated or deleted\nBut tuple is immutable, that is elements of tuple cannot be updated or deleted'

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 [11]:
```python
def domain_get(e_mail):
    return e_mail.split('@')[-1]
```

In [12]:
```python
domain_get('user@domain.com')
```

Out[12]: `'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 [13]:
```python
def find_dog(stmt):
    return 'dog' in stmt.lower().split()
```

In [14]:
```python
find_dog('Is there a dog here?')
```

Out[14]: `True`

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

In [15]:
```python
def count_dog(stmt):
    count = 0
    for word in stmt.lower().split():
        if word == 'dog':
            count += 1
    return count
```

In [16]:
```python
count_dog('This dog is different from other dog')
```

Out[16]: `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 [17]:
```python
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 [18]:
```python
caught_speeding(81,False)
```

Out[18]: `'Big Ticket'`

In [19]:
```python
caught_speeding(81,True)
```

Out[19]: `'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 [20]:
```python
empBasicSalary = [10000, 17000, 18500, 19000, 15000]
totalSalaryExpenditure = 0
for i in empBasicSalary:
    totalSalaryExpenditure += i
print(totalSalaryExpenditure)
```

```
79500
```

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 [21]:
```python
dict1 = {'Empid':1111, 'Empname':'Alex', 'Basicpay':15000}
dict2 = {'DeptName': 'CSE', 'DeptId': 111}
dict1.update(dict2)
print(dict1)
```

```
{'Empid': 1111, 'Empname': 'Alex', 'Basicpay': 15000, 'DeptName': 'CSE', 'DeptId': 111}
```