In [4]:
```
#IV
```

In [ ]:
```
#what is 7 to the power of 4?
```

In [5]:
```
print(pow(7,4))
```

```
2401
```

In [6]:
```
#split this string
S="Hi there Sam!"
```

In [7]:
```
S.split()
```

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

In [8]:
```
#given variable
# planet = "Earth"
# diameter = 12742
# use format to print the following string
# The diameter of Earth is 12742 kilometers
```

In [9]:
```
planet = "Earth"
diameter = 12742
```

In [10]:
```
print('The diameter of {planet} is {diameter} kilometers'.format(planet="Earth", diameter=12742))
```

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

In [11]:
```
#given this nested list, use indexing to grab the word "hello"
```

In [12]:
```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

In [19]:
```
lst[3]
```

Out[19]:
```
[5, [100, 200, ['hello']], 23, 11]
```

In [20]:
```
lst[3][1]
```

Out[20]:
```
[100, 200, ['hello']]
```

In [22]:
```
lst[3][1][2][0]
```

Out[22]:
```
'hello'
```

In [ ]:
```
#tuple
#create a function that grabs the email website domain from a string in the form:
# user@domain.com
# return : domain.com
```

In [33]:
```
def domainGet(email):
    return email.split('@')[-1]
domainGet('user@domain.com')
```

Out[33]: 'domain.com'

In [34]:
```
#return true
```

In [37]:
```
def findDog(st):
    return 'dog' in st.lower().split()
```

In [39]:
```
findDog('Is there a dog here?')
```

Out[39]: True

In [40]:
```
# count dog
```

In [51]:
```
def countDog(st):
    count = 0
    for word in st.lower().split():
        if word =='dog':
            count += 1
    return count
```

In [52]:
```
countDog('This dog runs faster than the other dog dude!')
```

Out[52]: 2

In [ ]:
```
#Use Lambda expressions and the filter() function to filter out words from a list that don't start with the letter 's'. For examp
```

In [53]:
```
seq = ['soup','dog','salad','cat','great']
```

In [58]:
```
list(filter(lambda word: word[0]=='s',seq))
```

Out[58]: ['soup', 'salad']

In [60]:
```
#Final 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 ti
```

In [61]:
```
def CaughtSpeeding(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 [67]:
```
CaughtSpeeding(81,True)
```

Out[67]: 'Small ticket'

In [65]:
```
CaughtSpeeding(81,False)
```

Out[65]: 'Big ticket'