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?**

```
print(7**4)
```

```
2401
```

** Split this string:**

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

into a list.

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

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

```
d = "Hi there dad!"
d.split()
```

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

** Given the variables:**

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

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

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

```
planet = "Earth"
diameter = 12742

txt = "The diameter of {0} id {1} kilometers".format(planet,diameter)
print(txt)
```

```
The diameter of Earth id 12742 kilometers
```

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

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

print(lst[3][1][2])
```

```
['hello']
```

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

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

print(d['k1'][3]['tricky'][3]['target'][3])
```

```
hello
```

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

```
""" In Python, list and tuple are a class of data structure that can
store one or more objects or values.
A list is used to store multiple items in one variable and can be
created using square brackets. Similarly, tuples also can store
multiple items in a single variable and can be declared using
parentheses.
A tuple is immutable whereas a list is mutable.
"""
```

```
' In Python, list and tuple are a class of data structure that can
store one or more objects or values. \nA list is used to store
multiple items in one variable and can be created using square
brackets. Similarly, tuples also can store multiple items in a single
variable and can be declared using parentheses.\nA tuple is immutable
whereas a list is mutable.\n'
```

** 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

```
string = "user@domain.com"

def grabDomain(string):
    myString = ""
    found = False
    for i in string:
        if(found):
            myString = myString + i

        if(i == "@"):

            found = True

    return myString

print(grabDomain(string))
```

```
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 foundTrueFalse(string , searchString):

    count = countFound(string , searchString)

    if(count > 0):
        return True
    else:
        return False


print(foundTrueFalse("The dog is a dog where the dog is founded by the
dog" , "dog"))
```

```
True
```

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

```
def countFound(string , searchString):

    count = 0

    for i in range(len(string)):
        if(string[i:i+len(searchString)] == searchString):
            count = count + 1

    return count


print(countFound("The dog or domestic dog (Canis familiaris or Canis
lupus familiaris) is a domesticated descendant of the wolf which is
characterized by an upturning tail.The dog is derived from an ancient,
extinct wolf, and the modern wolf is the dog's nearest living
relative.The dog was the first species to be domesticated, by hunter–
gatherers over 15,000 years ago,before the development of
agriculture." , "dog"))
```

```
5
```

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 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.

```
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'

print(caught_speeding(70 , False))
```

```
Small Ticket
```

```
print(caught_speeding(100 , True))
```

```
Big Ticket
```

Great job!