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?**

```
7**4
```

```
2401
```

** Split this string:**

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

*into a list. *

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

```
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.
```

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

```
"The diameter of {} is {} kilometers.".format(planet,diameter)
```

Show hidden output

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

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

```
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,'he
```

```
d['k1'][3]['tricky'][3]['target'][3]
```

```
'hello'
```

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

Lists are mutable, whereas Tuples are 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

```
user_id = 'user@domain.com'
get_domain = lambda id : id.split('@')[-1]
```

```
get_domain(user_id)
```

```
'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. **

```
is_dog = lambda animal : True if animal == 'dog' or animal == 'DOG' else
word = 'dog'

is_dog(word)
```

```
True
```

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

```
count_dog = lambda word : word.count('dog')

word = 'dog dog'
count_dog(word)
```

```
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. **

```
def caught_speeding(speed, is_birthday):

    if is_birthday:
        speeding = speed - 5
    else:
        speeding = speed

    if speeding > 80:
        return 'Big Ticket'
    elif speeding > 60 and speeding <80:
        return 'Small Ticket'
    else:
        return 'No Ticket'
```

```
caught_speeding(83,False)
```

```
'Big Ticket'
```

```
caught_speeding(80,False)
```

```
'No 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.

```
salaries = [10000,20000,20000,30000,52000]
for i in range(len(salaries)):
    print ("Salary of emp ",i+1,"is",salaries[i])
print("Sum of all salaries : ",sum(salaries))
```

```
Salary of emp  1 is 10000
Salary of emp  2 is 20000
Salary of emp  3 is 20000
Salary of emp  4 is 30000
Salary of emp  5 is 52000
Sum of all salaries :  132000
```

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.

```
dict1 = {
    'Empid' : 1,
    'Empname' : 'Raja',
    'Basic pay' : 56000,
}

dict2 = {
    'DeptName' : 'CSE',
    'DeptId' : 2
}

dict1.update(dict2)
```

```
dict1
```

```
{'Empid': 1,
 'Empname': 'Raja',
 'Basic pay': 56000,
 'DeptName': 'CSE',
 'DeptId': 2}
```