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(pow(7,4))
```

```
2401
```

** Split this string:**

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

into a list.

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

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

```
s="Hi there dad!"
print(s.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
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" **

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

```
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? **

```
#List is mutable and surrounded with []
#Tuple is immutable and surrounded with ()
```

** 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

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

def Domain(s):
    a = ""
    found = False
    for i in s:
        if(found):
            a = a+ i

        if(i == "@"):

            found = True

    return a

print(Domain(s))

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 isWordPresent(sentence, word):
    s = sentence.split(" ")

    for i in s:
        if (i == word):
            return True
    return False
```

```python
s = "Dog is my favourite pet animal"
word = "Dog"

if (isWordPresent(s, word)):
    print("True")
else:
    print("False")


True
```

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

```python
def countword(string , search):
    c= 0
    for i in range(len(string)):
        if(string[i:i+len(search)] == search):
            c = c+ 1

    return c
print(countword("dog is my favourite animal.A dog has sharp teeth so
that it can eat flesh very easily. Dog are more high maintenance" ,
"dog"))

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.

```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'
print(caught_speeding(50,True))
```

No Ticket

```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'
print(caught_speeding(95,True))
```

Big Ticket

```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'
print(caught_speeding(75,False))
```

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.

```python
employees = ["Ashok", "Bindhu", "David", "Gnanam", "Harish"]
salary={}
for emp in employees:
    amount=int(input(f'Enter salary for {emp}: '))
    salary[emp]=amount
print('Total salary ',sum(salary.values()))
```

```
Enter salary for Ashok: 1000
Enter salary for Bindhu: 2000
Enter salary for David: 3000
Enter salary for Gnanam: 4000
Enter salary for Harish: 5000
Total salary  15000
```

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.

```python
x = {'Empid': 401, 'Empname': "Ashok","Basicpay":1000}
y = {'DeptName': "Marketing", 'Deptid': 101}

def merge_two_dicts(x, y):
    z = x.copy()    # start with keys and values of x
    z.update(y)     # modifies z with keys and values of y
    return z
z = merge_two_dicts(x, y)
print(z)
```

```
{'Empid': 401, 'Empname': 'Ashok', 'Basicpay': 1000, 'DeptName':
'Marketing', 'Deptid': 101}
```