

ASSIGNMENT - 3

PYTHON PROGRAMMING

Assignment Date	01 September 2022
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Student Roll Number	1902205
Maximum Marks	2 Marks

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]:

```
7 **4
```

Out[1]:

```
2401
```

Split this string: s =

```
"Hi there Sam!"
```

into a list.

In [4]:

```
s = 'Hi there Sam!'
```

In [3]:

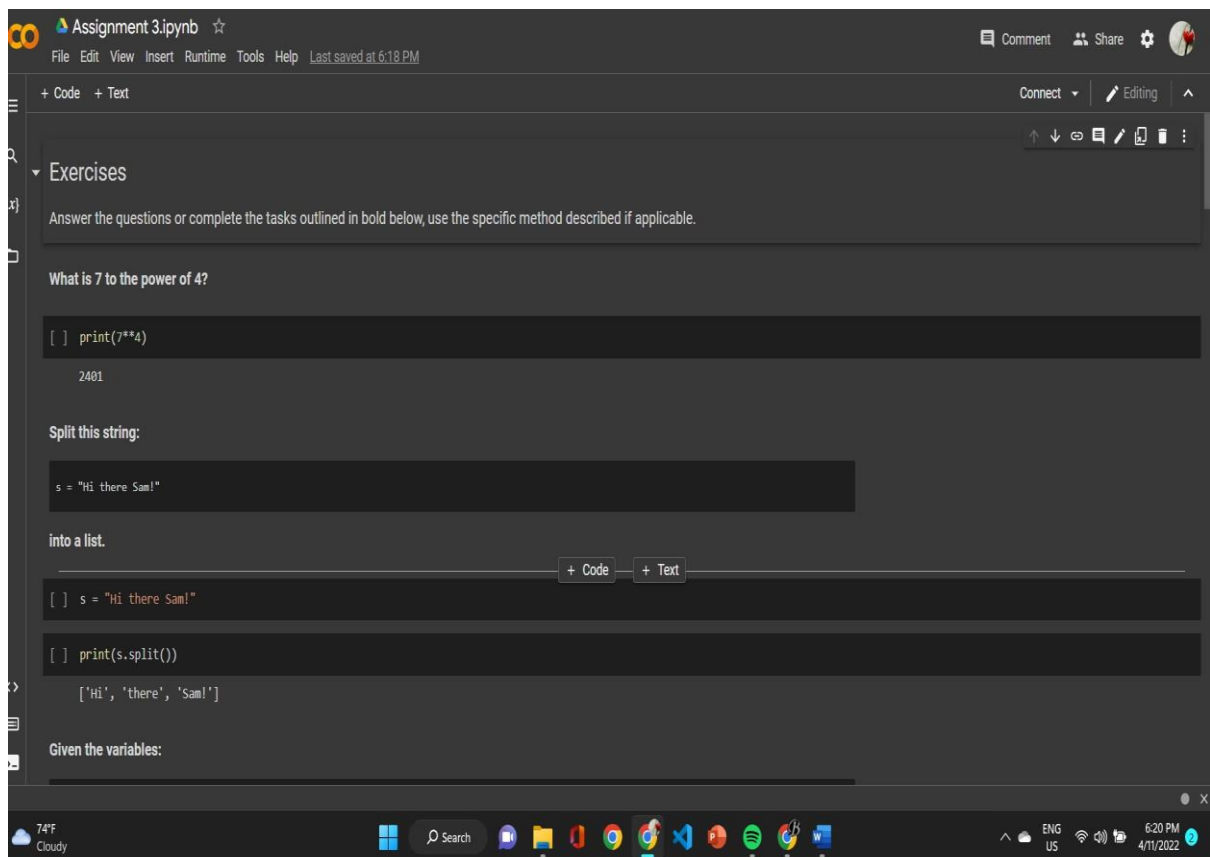
```
s.split()
```

Out[3]:

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

Given the variables:

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



Use .format() to print the following string:

The diameter of Earth is 12742 kilometers.

In [5]:

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

In [6]:

```
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 [7]:

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

In [14]:

```
lst[3][1][2][0]
```

Out[14]:

```
'hello'
```

```
Assignment 3.ipynb ☆
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+ Code + Text
Connect Editing ^

[ ] print(' '.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

[ ] 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]

[ ] print(lst[3][1][2][0])
```

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

In [16]:

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

In [22]:

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

Out[22]:

```
'hello'
```

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

In [23]:

```
# Tuple is 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

In [24]:

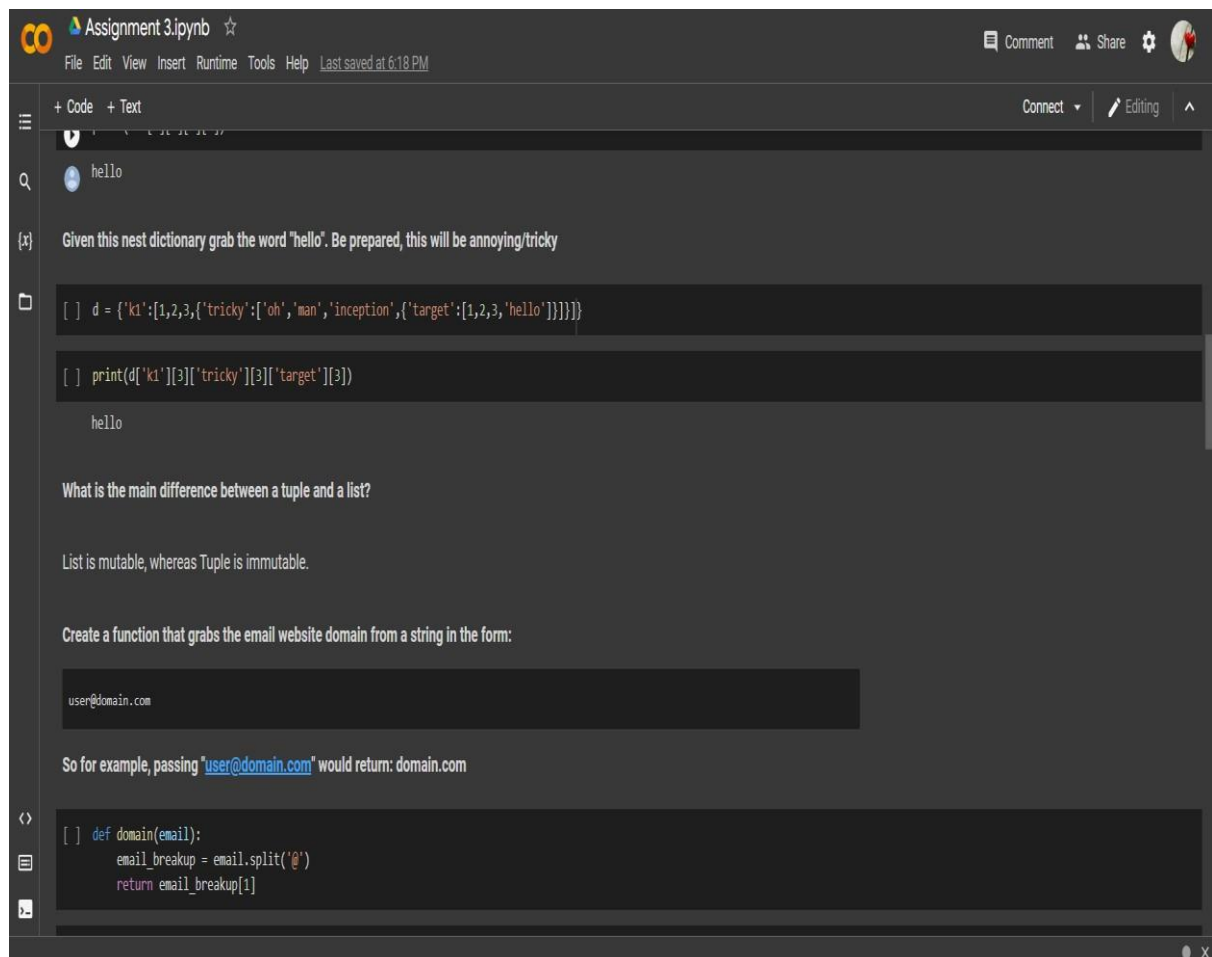
```
def domainGet(email):  
    return email.split('@')[-1]
```

In [26]:

```
domainGet('user@domain.com')
```

Out[26]:

```
'domain.com'
```



The screenshot shows a Jupyter Notebook window titled "Assignment 3.ipynb". The interface includes a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a toolbar with icons for Comment, Share, and settings. The notebook content is displayed in a dark theme. It shows a code cell with the following Python code:

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

The output of the code cell is "hello". Below the code cell, there is a text prompt: "What is the main difference between a tuple and a list?". The answer provided is: "List is mutable, whereas Tuple is immutable." Below this, another text prompt asks: "Create a function that grabs the email website domain from a string in the form: user@domain.com". The example provided is: "So for example, passing 'user@domain.com' would return: domain.com". At the bottom, there is a code cell with the following Python code:

```
[ ] def domain(email):  
    email_breakup = email.split('@')  
    return email_breakup[1]
```

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 [27]:

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

[28]:

```
findDog('Is there a dog here?')
```

Out[28]:

True

The screenshot shows a Jupyter Notebook window titled "Assignment 3.ipynb". The interface includes a top bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help" menus, along with a "Last saved at 6:18 PM" timestamp. On the right, there are icons for "Comment", "Share", and a user profile. The notebook has a sidebar on the left with icons for "Code", "Text", "Find", "Expand", and "Collapse". The main area displays a code cell with the following Python code:

```
[ ] print(domain('user@domain.com'))  
  
domain.com
```

Below the code cell, there is a text prompt: "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."

The code cell contains the following function definition:

```
def contains_dog(sentence):  
    words = sentence.split(' ')  
    k = 0  
  
    for i in range(len(words)):  
        words[i] = words[i].lower()  
  
    for i in words:  
        if i == 'dog':  
            k = 1  
            return True  
  
    if(k == 0):  
        return False
```

Below the function definition, there is a code cell with the following code:

```
[ ] print(contains_dog('There goes a dog'))
```

The output of the code cell is "True".

Below the output, there is a text prompt: "Create a function that counts the number of times the word 'dog' occurs in a string. Again ignore edge cases."

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

In [30]:

```
def countDog(st):
```

```

count = 0    for word in
st.lower().split():    if word
== 'dog':
    count += 1
return count

```

In [31]: countDog('This dog runs faster than the other dog
dude!')

Out[31]:

2

The screenshot shows a Jupyter Notebook titled "Assignment 3.ipynb". The interface includes a top bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help" menus, along with a "Last saved at 6:18 PM" timestamp. On the left, there are icons for a sidebar, search, and a list of cells. The main area contains a code cell with the following Python code:

```

def dog_count(sentence):
    words = sentence.split(' ')
    k = 0

    for i in range(len(words)):
        words[i] = words[i].lower()

    for i in words:
        if i == 'dog':
            k+=1

    return k

print(dog_count('There goes a dog and another dog'))

```

Below the code cell, the output of the execution is shown as the number "2". At the bottom of the notebook, there is a "Problem" section with a text description:

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.

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 [4]:

```
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 [5]:
```

```
caught_speeding(81,True)
```

```
Out[5]: 'Small
```

```
Ticket'
```

```
In [6]:
```

```
caught_speeding(81,False)
```

```
Out[6]:
```

```
'Big Ticket'
```

The image shows a Jupyter Notebook window titled "Assignment 3.ipynb". The interface includes a top menu bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help". Below the menu is a toolbar with icons for "Code", "Text", "Connect", "Editing", and a search icon. The main area of the notebook contains a code cell with the following Python code:

```
[ ] print(dog_count, 'there goes a dog and another 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.

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(90, False))

Big Ticket
```

The code defines a function `caught_speeding` that takes two arguments: `speed` and `is_birthday`. It calculates the `speeding` value by subtracting 5 from `speed` if it's a birthday. Then, it checks the `speeding` value against thresholds of 60 and 80 to return "No Ticket", "Small Ticket", or "Big Ticket". The code is executed, and the output "Big Ticket" is displayed.

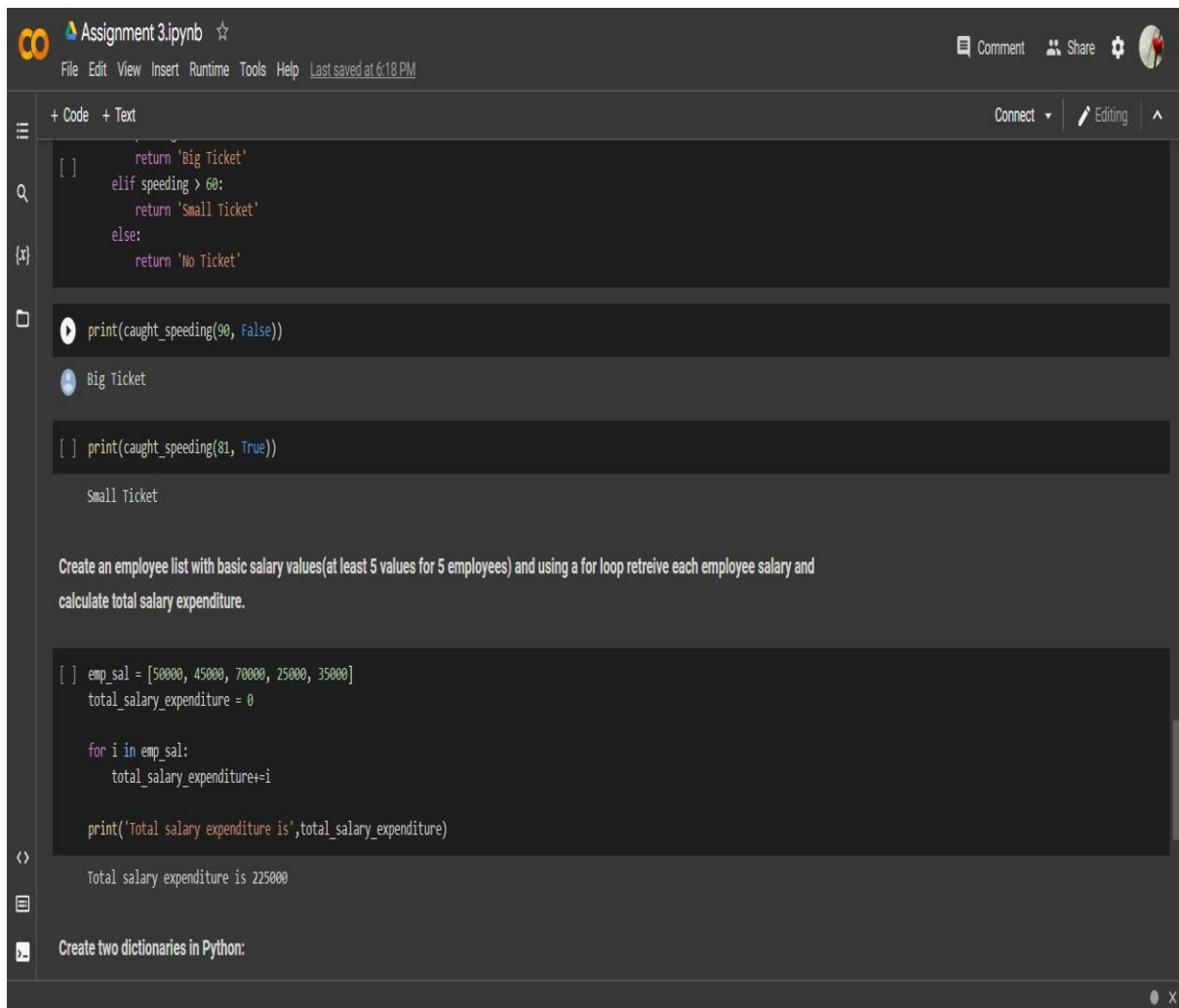
Create an employee list with basic salary values(at least 5 values for 5 employees) and using a for loop retrieve each employee salary and calculate total salary expenditure.


```
emp_sal = [50000, 45000, 70000, 25000, 35000] total_salary_expenditure  
= 0
```

```
for i in emp_sal:
```

```
    total_salary_expenditure+=i
```

```
print('Total salary expenditure is',total_salary_expenditure)
```



The screenshot shows a Jupyter Notebook titled "Assignment 3.ipynb". The interface includes a top bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help" menus, along with a "Last saved at 6:18 PM" timestamp. Below the menu bar, there are tabs for "+ Code" and "+ Text", and buttons for "Connect", "Editing", and a scroll icon. The main area displays a list of code cells. The first cell contains a function definition for `caught_speeding` that returns 'Big Ticket', 'Small Ticket', or 'No Ticket' based on the speed and whether the driver was caught. The second cell shows the function being called with `caught_speeding(90, False)`, resulting in the output "Big Ticket". The third cell shows the function being called with `caught_speeding(81, True)`, resulting in the output "Small Ticket". The fourth cell contains a text prompt: "Create an employee list with basic salary values(at least 5 values for 5 employees) and using a for loop retrieve each employee salary and calculate total salary expenditure." The fifth cell contains the Python code for creating the `emp_sal` list, initializing `total_salary_expenditure` to 0, and using a `for` loop to calculate the total salary expenditure. The final output of this cell is "Total salary expenditure is 225000". The bottom of the notebook shows a prompt: "Create two dictionaries in Python:".

```
[ ]     return 'Big Ticket'  
    elif speeding > 60:  
        return 'Small Ticket'  
    else:  
        return 'No Ticket'  
  
[ ] print(caught_speeding(90, False))  
  
Big Ticket  
  
[ ] print(caught_speeding(81, True))  
  
Small Ticket  
  
Create an employee list with basic salary values(at least 5 values for 5 employees) and using a for loop retrieve each employee salary and  
calculate total salary expenditure.  
  
[ ] emp_sal = [50000, 45000, 70000, 25000, 35000]  
    total_salary_expenditure = 0  
  
    for i in emp_sal:  
        total_salary_expenditure+=i  
  
    print('Total salary expenditure is',total_salary_expenditure)  
  
Total salary expenditure is 225000  
  
Create two dictionaries in Python:
```

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': 13, 'Empname': 'John Wick', 'Basicpay': 70000} dict2
```

```
= {'DeptName': 'Analytics', 'DeptId': 7}
```

```
dict3 = dict1 | dict2 print(dict3)
```

```
{'Empid': 13, 'Empname': 'John Wick', 'Basicpay': 70000, 'DeptName': 'Analytics', 'DeptId': 7}
```

Assignment 3.ipynb ☆

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Create an employee list with basic salary values(at least 5 values for 5 employees) and using a for loop retrieve each employee salary and calculate total salary expenditure.

```
[ ] emp_sal = [50000, 45000, 70000, 25000, 35000]
    total_salary_expenditure = 0

    for i in emp_sal:
        total_salary_expenditure+=i

    print("Total salary expenditure is",total_salary_expenditure)
```

Total salary expenditure is 225000

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': 13, 'Empname': 'John Wick', 'Basicpay': 70000}
dict2 = {'DeptName': 'Analytics', 'DeptId': 7}

dict3 = dict1 | dict2
print(dict3)
```

```
{'Empid': 13, 'Empname': 'John Wick', 'Basicpay': 70000, 'DeptName': 'Analytics', 'DeptId': 7}
```