

ASSIGNMENT - 3

PYTHON PROGRAMMING

| | |
|---------------------|-------------------|
| Assignment Date | 01 September 2022 |
| Student Name | Ashwini A |
| Student Roll Number | 311819106003 |
| 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]:

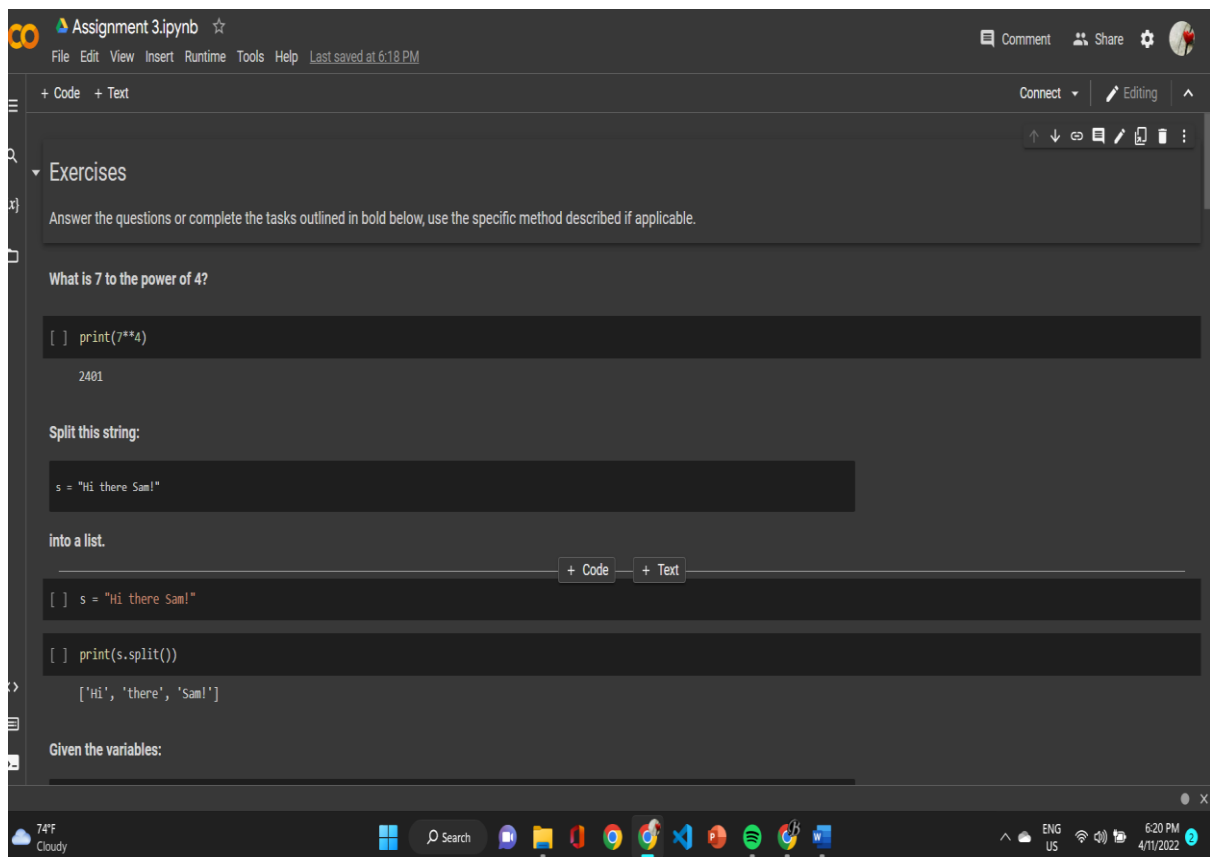
```
s.split()
```

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]:

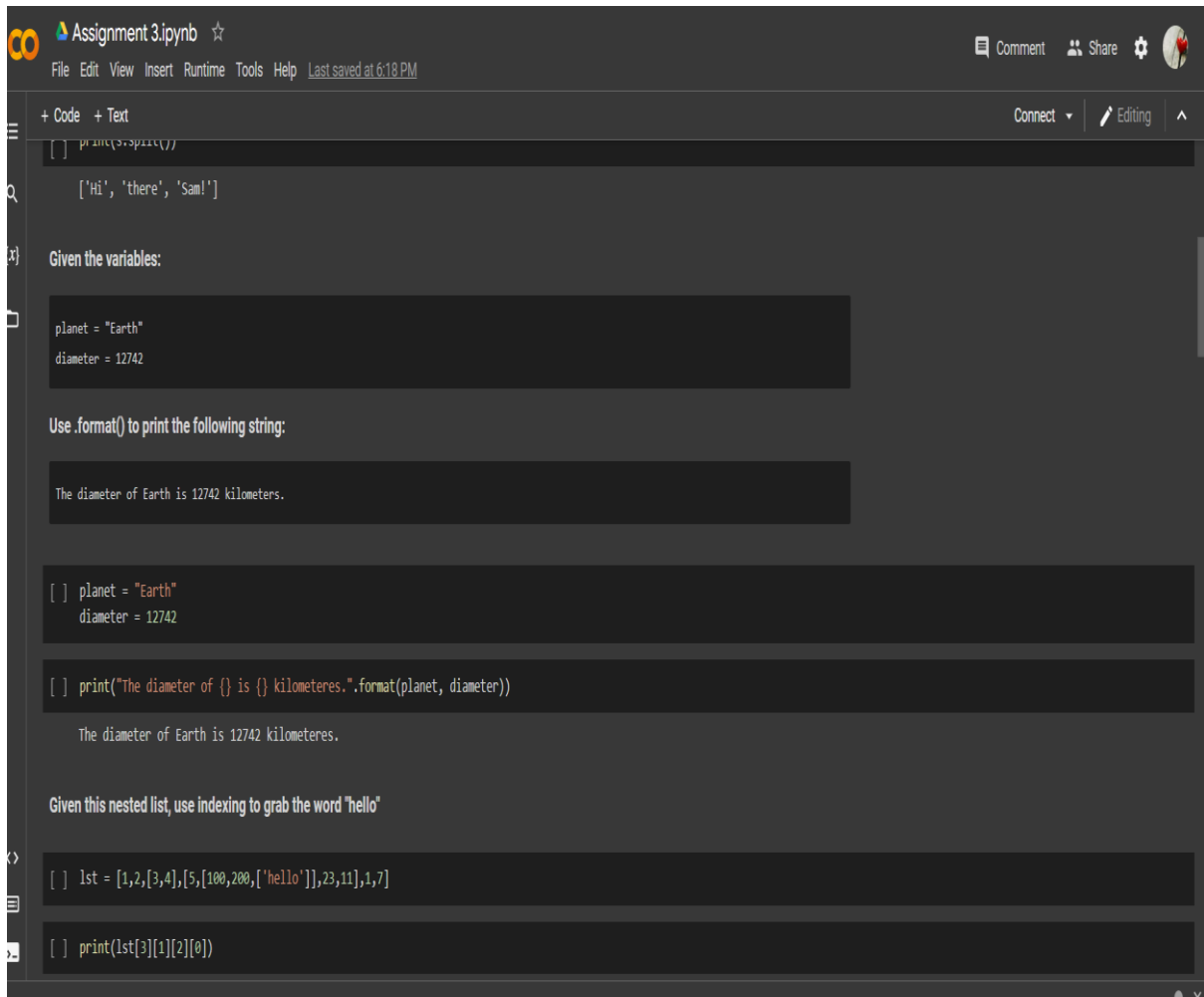
```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

In [14]:

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

Out[14]:

'hello'



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 content is divided into cells. The first cell is a code cell with the following Python code:

```
[ ] print(s.split())  
[ ] ['Hi', 'there', 'Sam!']
```

The second cell is a text cell with the instruction: "Given the variables:".

The third cell is a code cell with the following Python code:

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

The fourth cell is a text cell with the instruction: "Use .format() to print the following string:".

The fifth cell is a code cell with the following Python code:

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

The sixth cell is a code cell with the following Python code:

```
[ ] planet = "Earth"  
diameter = 12742
```

The seventh cell is a code cell with the following Python code:

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

The eighth cell is a text cell with the instruction: "Given this nested list, use indexing to grab the word 'hello'".

The ninth cell is a code cell with the following Python code:

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

The tenth cell is a code cell with the following Python code:

```
[ ] 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]:

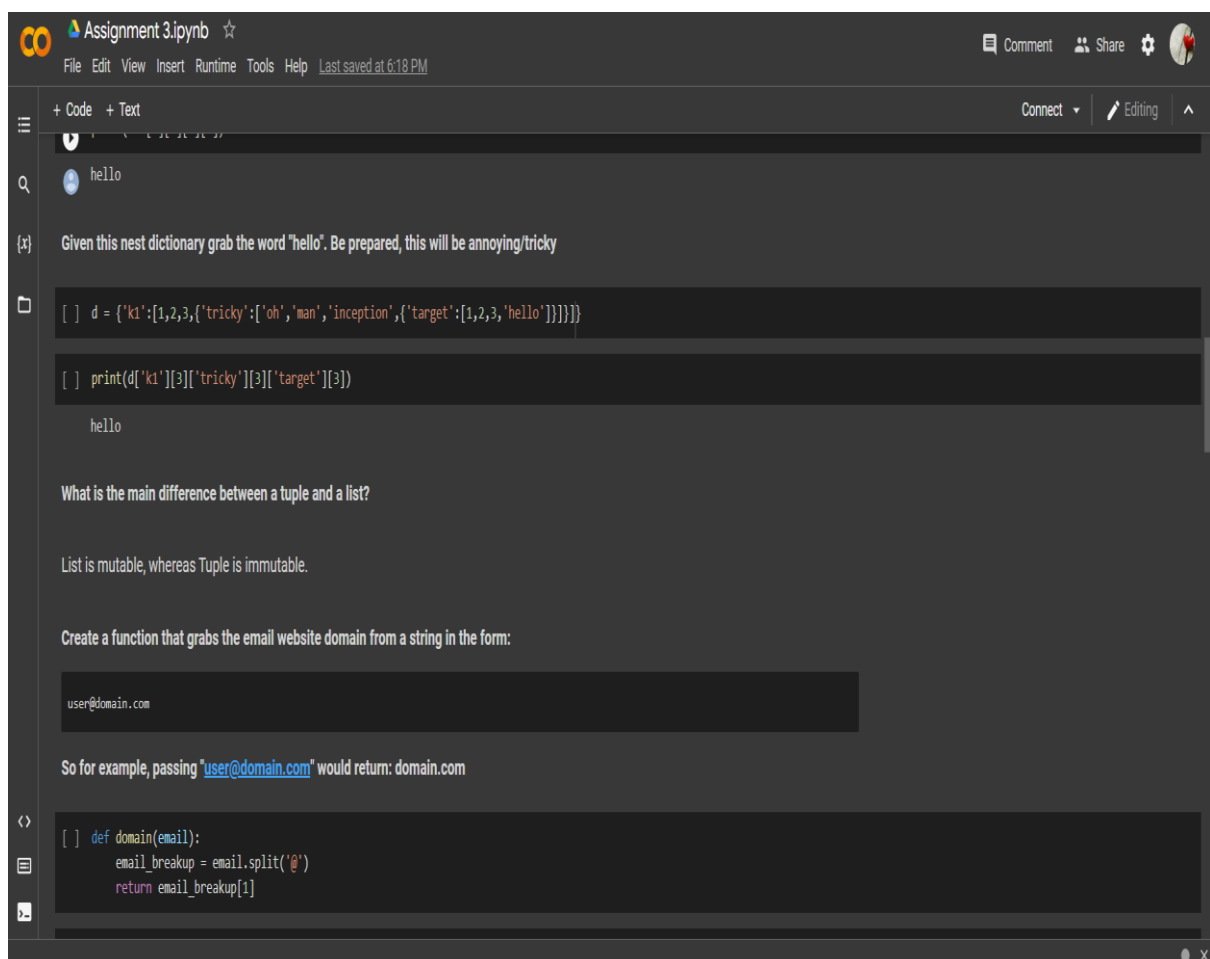
```
def domainGet(email):  
    return email.split('@')[-1]
```

In [26]:

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

Out[26]:

```
'domain.com'
```



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

. The second code cell contains a print statement:

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

. Below the code cells is a text prompt: "What is the main difference between a tuple and a list?". This is followed by a text response: "List is mutable, whereas Tuple is immutable." Below this is another text prompt: "Create a function that grabs the email website domain from a string in the form:". This is followed by a text input field containing "user@domain.com". Below the input field is a text prompt: "So for example, passing "user@domain.com" would return: domain.com". Finally, there is a code cell containing a function definition:

```
[ ] 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 left, there is a sidebar with icons for a menu, search, variables, and files. The main area displays a code cell with the following Python code:

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

The output of this cell is "domain.com". Below this, a text cell contains the instruction: "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." This is followed by another code cell containing a 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 this cell is "True". At the bottom of the notebook, there is a text cell with the instruction: "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 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. Below the menu bar, there are tabs for "+ Code" and "+ Text", and a "Connect" button. The main area displays 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
```

Below the code cell, there is a run button (a play icon) and the output of the function call: `print(dog_count('There goes a dog and another dog'))` followed by the value `2`.

At the bottom of the notebook, there is a "Problem" section with the following text:

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 screenshot shows a Jupyter Notebook 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 "Run" button. The main area contains a code cell with the following Python code:

```
[ ] print('dog count: there goes a dog and another dog')  
  
2  
  
{x} 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
```

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.

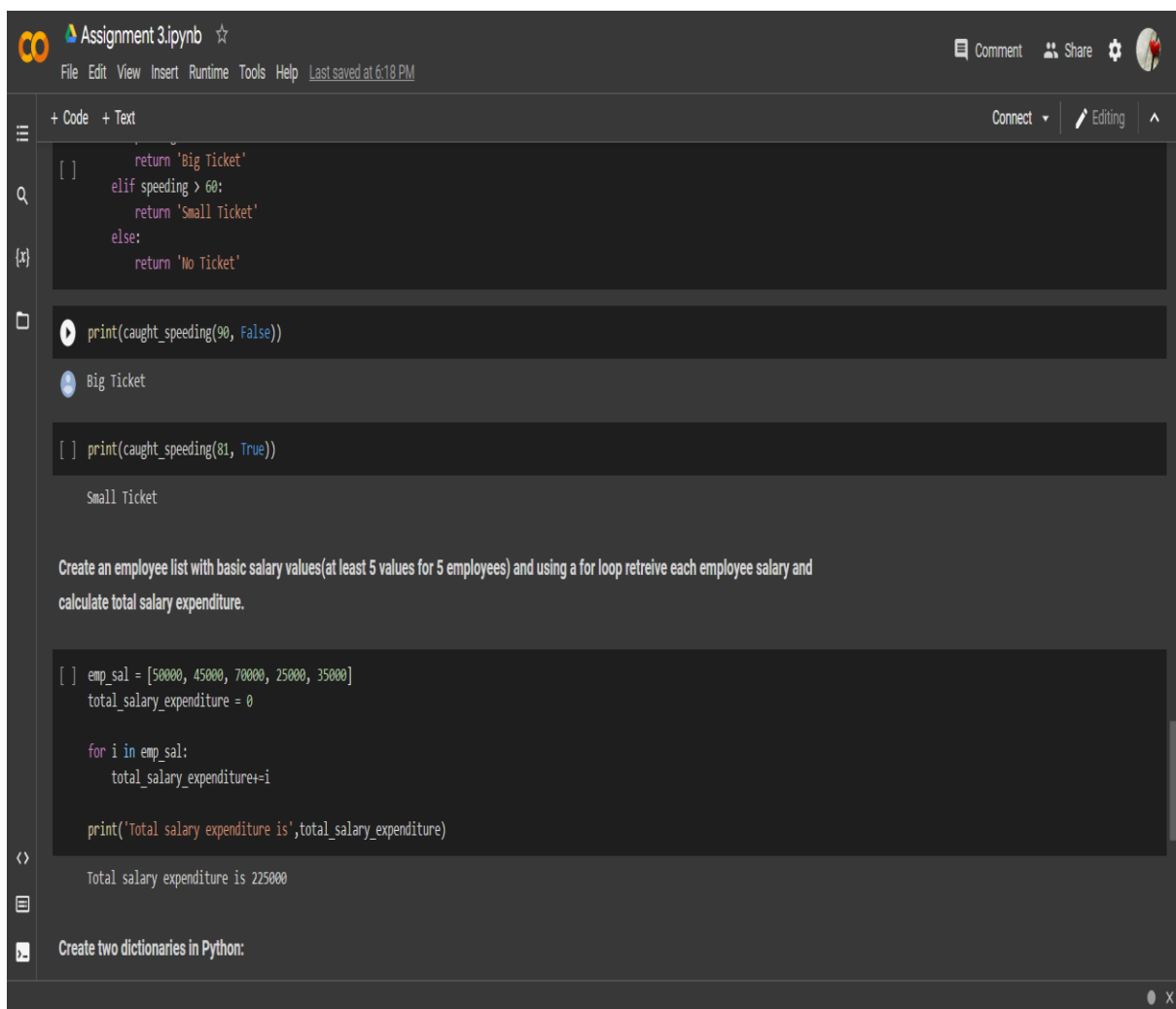

```
emp_sal = [50000, 45000, 70000, 25000, 35000]
```

```
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 window titled "Assignment 3.ipynb". The interface includes a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a toolbar with options like Comment, Share, and a settings icon. The notebook contains several code cells and their corresponding outputs.

Code Cell 1:

```
[ ] return 'Big Ticket'
elif speeding > 60:
    return 'Small Ticket'
else:
    return 'No Ticket'
```

Output 1:

```
print(caught_speeding(90, False))
```

Big Ticket

Code Cell 2:

```
[ ] print(caught_speeding(81, True))
```

Small Ticket

Text Cell:

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.

Code Cell 3:

```
[ ] 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)
```

Output 3:

```
Total salary expenditure is 225000
```

Text Cell:

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.

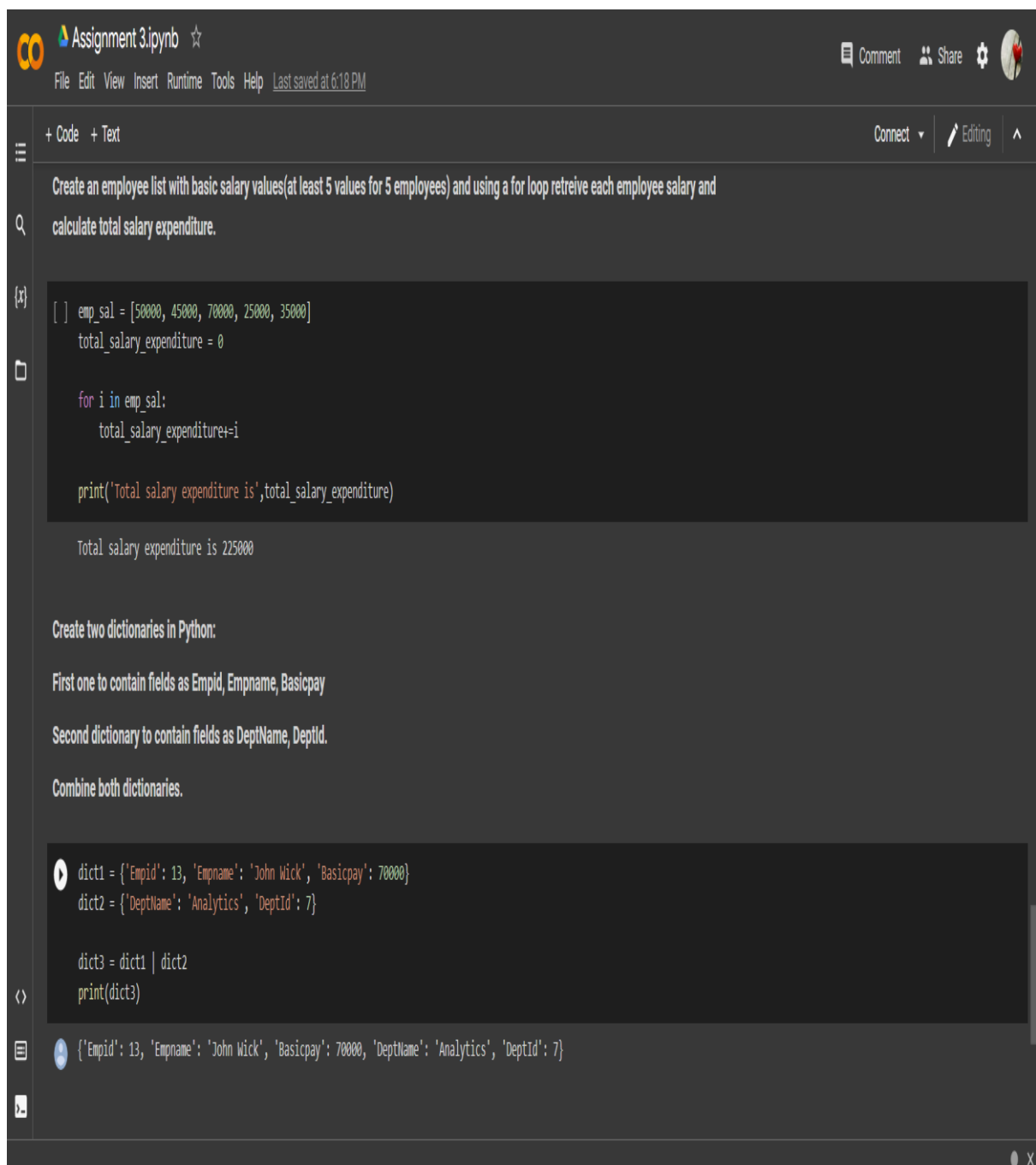
```
dict1 = {'Empid': 13, 'Empname': 'John Wick', 'Basicpay': 70000}
```

```
dict2 = {'DeptName': 'Analytics', 'DeptId': 7}
```

```
dict3 = dict1 | dict2
```

```
print(dict3)
```

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



Assignment 3.ipynb ☆

File Edit View Insert Runtime Tools Help Last saved at 6:18 PM

+ Code + Text Connect Editing ^

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}
```