

**Assignment -3**  
Data Analytics – Python Programming

Assignment Date	10 October 2022
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Maximum Marks	2 Marks

**Question-1:**

What is 7 to the power of 4?

**Solution:**

```
result = 7 ** 4
print(result)
```

```
In [1]: result = 7 ** 4
        print(result)
        2401
```

**Question-2:**

Split this string: s = "Hi there Sam!" & s = "Hi there dad!" into a list.

**Solution:**

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

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

```
In [2]: s = "Hi there Sam!"
        print(s.split())
        ['Hi', 'there', 'Sam!']
```

```
In [3]: s = "Hi there dad!"
        print(s.split())
        ['Hi', 'there', 'dad!']
```

**Question-3:**

Given the variables:

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

Use .format() to print the following string: The diameter of Earth is 12742 kilometers.

**Solution:**

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

```
In [4]: planet = "Earth"  
        diameter = 12742  
  
In [5]: print("The diameter of {} is {} kilometers.".format(planet,diameter))  
        The diameter of Earth is 12742 kilometers.
```

**Question-4:**

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

**Solution:**

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]  
print(lst[3][1][2][0])
```

```
In [6]: lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]  
  
In [7]: lst[3][1][2][0]  
Out[7]: 'hello'
```

**Question-5:**

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

**Solution:**

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

```
In [8]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}  
  
In [9]: d['k1'][3]['tricky'][3]['target'][3]  
Out[9]: 'hello'
```

### Question-6:

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

#### Solution:

Tuple is immutable but list is mutable.

```
In [ ]: "Tuple is immutable but list is mutable"
```

### Question-7:

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.

#### Solution:

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

```
In [10]: def domainGet(email):  
         return email.split('@')[-1]
```

```
In [11]: domainGet('user@domain.com')
```

```
Out[11]: 'domain.com'
```

### Question-8:

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.

#### Solution:

```
def findDog(st):  
    return 'dog' in st.lower().split()  
findDog('Is there any dog here?')
```

```
In [12]: def findDog(st):  
         return 'dog' in st.lower().split()
```

```
In [13]: findDog('Is there any dog here?')
```

```
Out[13]: True
```

### Question-9:

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

#### Solution:

```
def countDog(st):
    count = 0
    for word in st.lower().split():
        if word == 'dog':
            count += 1
    return count
countDog('I have a dog and my dog name is Jimmy!')
```

```
In [14]: def countDog(st):
        count = 0
        for word in st.lower().split():
            if word == 'dog':
                count += 1
        return count
```

```
In [15]: countDog('I have a dog and my dog name is Jimmy!')
```

```
Out[15]: 2
```

### Question-10:

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. \*

#### Solution:

```
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'
```

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

```
caught_speeding(83,True)
```

```
In [16]: 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 [17]: caught_speeding(83,False)
```

```
Out[17]: 'Big Ticket'
```

```
In [18]: caught_speeding(83,True)
```

```
Out[18]: 'Small Ticket'
```

### Question-11:

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.

### Solution:

```
emp_salary = [10000, 15000, 20000, 25000, 30000]
total_salary_exp = 0
```

```
for i in emp_salary:
    total_salary_exp += i
```

```
print("Total Salary Expenditure : " , total_salary_exp)
```

```
In [21]: emp_salary = [10000, 15000, 20000, 25000, 30000]
total_salary_exp = 0

for i in emp_salary:
    total_salary_exp += i

print("Total Salary Expenditure : " , total_salary_exp)

Total Salary Expenditure : 100000
```

**Question-12:**

Create two dictionaries in Python: First one to contain fields as Empid, Emprname, Basicpay . Second dictionary to contain fields as DeptName, DeptId. Combine both dictionaries.

**Solution:**

```
dict_1 = {'Empid': '19ITA01', 'Emprname': 'Abhinav', 'Basicpay' : 50000 }  
dict_2 = {'DeptName': 'Information Technology', 'DeptId': 205 }  
dict_1.update(dict_2)  
print(dict_1)
```

```
In [3]: dict_1 = {'Empid': '19ITA01', 'Emprname': 'Abhinav', 'Basicpay' : 50000 }  
dict_2 = {'DeptName': 'Information Technology', 'DeptId': 205 }  
dict_1.update(dict_2)  
print(dict_1)  
  
{'Empid': '19ITA01', 'Emprname': 'Abhinav', 'Basicpay': 50000, 'DeptName': 'Information Technology', 'DeptId': 205}
```