Assignment -1

Python Programming

Assignment Date	:	15 October 2022
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Student Roll Number	:	73771914158
Maximum Marks	:	2 Marks

Basic Python

Question-1:

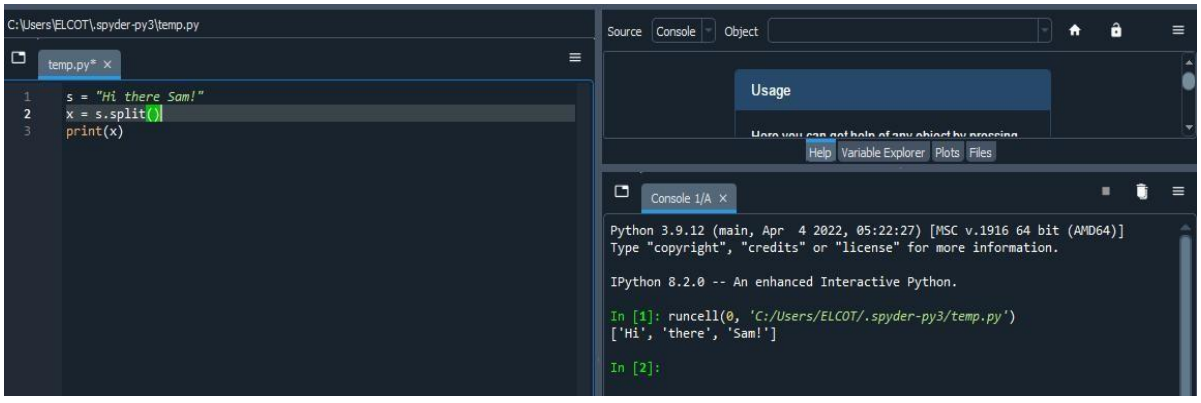
Split this string

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

Solution:

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

Output:



Question-2:

Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

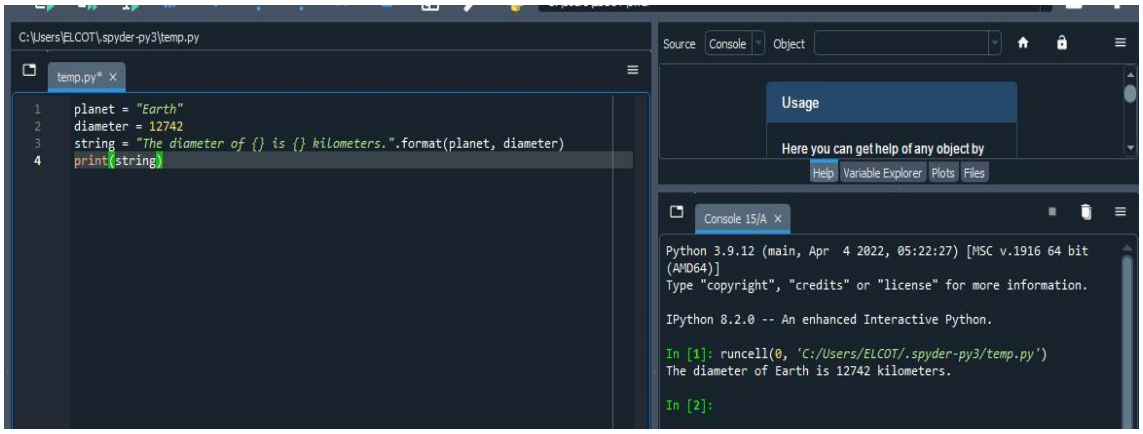
```
planet = "Earth"
diameter = 12742
```

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

Solution:

The diameter of Earth is 12742 kilometers.

Output:



Question-3:

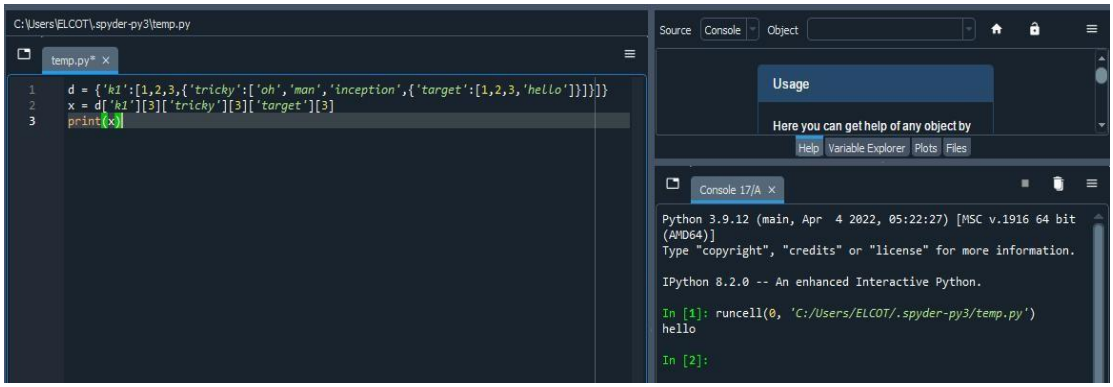
In this nest dictionary grab the word "hello"

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

Solution:

Hello

Output:



Numpy

Question-4:

```
import numpy as np
```

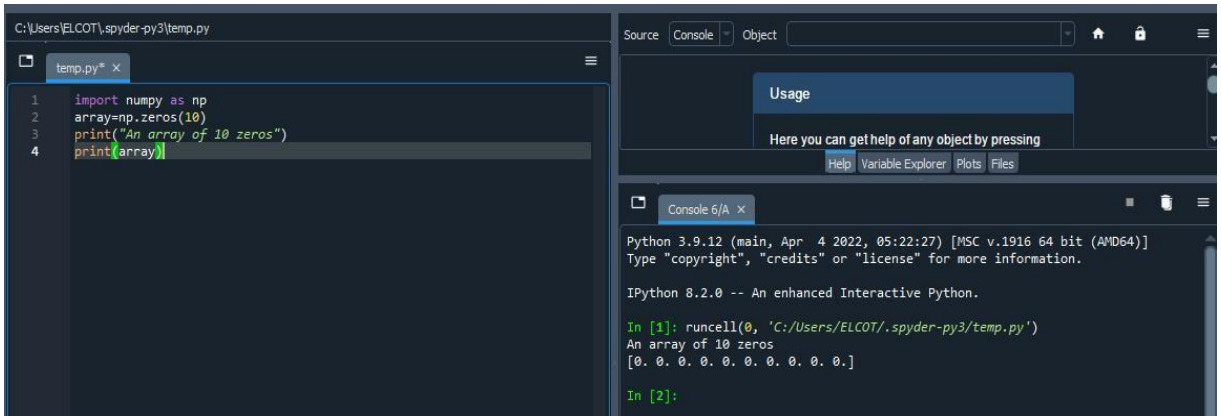
4.1 Create an array of 10 zeros?

```
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros")
print(array)
```

Solution:

```
An array of 10 zeros
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

Output:



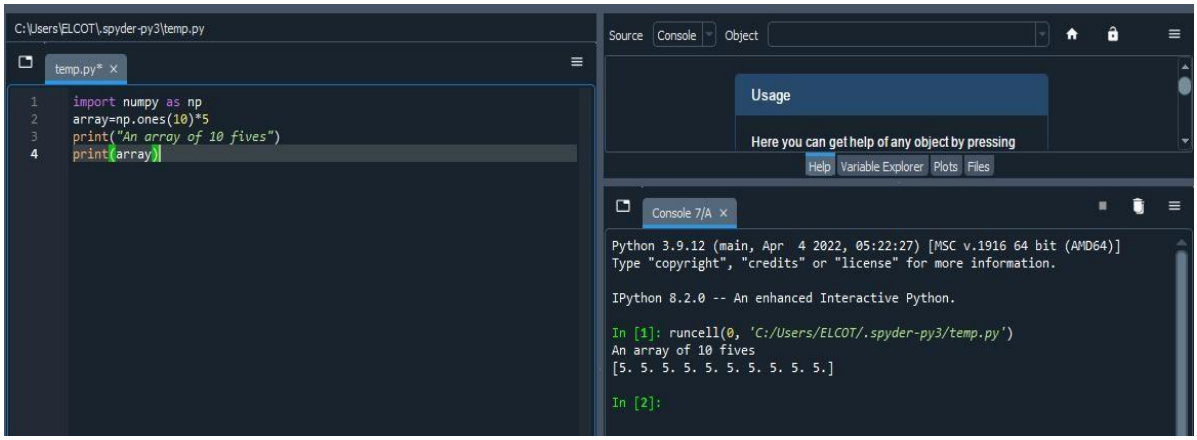
4.2 Create an array of 10 fives?

```
import numpy as np
Array=np.ones(10)*5
print("An array of 10 fives")
print(array)
```

Solution:

```
An array of 10 fives
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

Output:



Question-5:

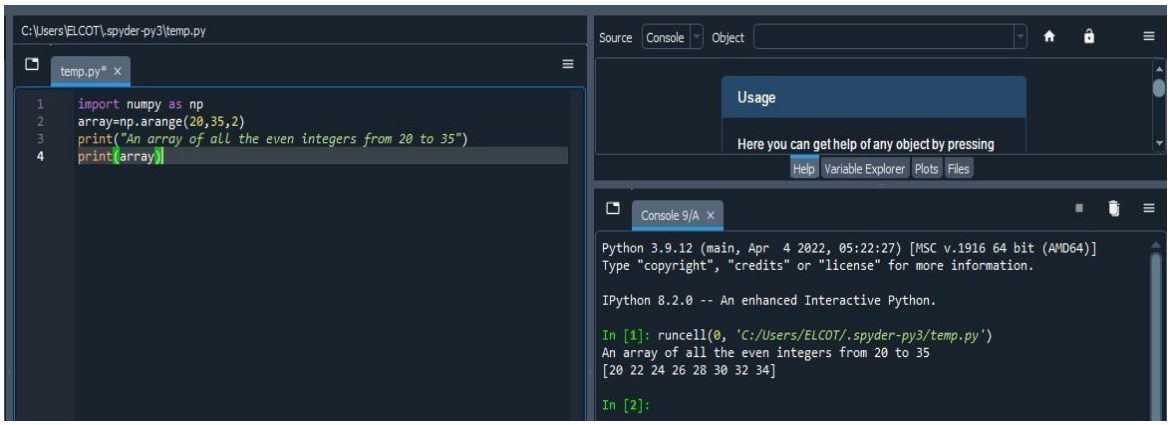
Create an array of all the even integers from 20 to 35

```
import numpy as np
array=np.arange(20,35,2)
print("An array of all the even integers from 20 to 35")
print(array)\
```

Solution:

```
An array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

Output:



Question-6:

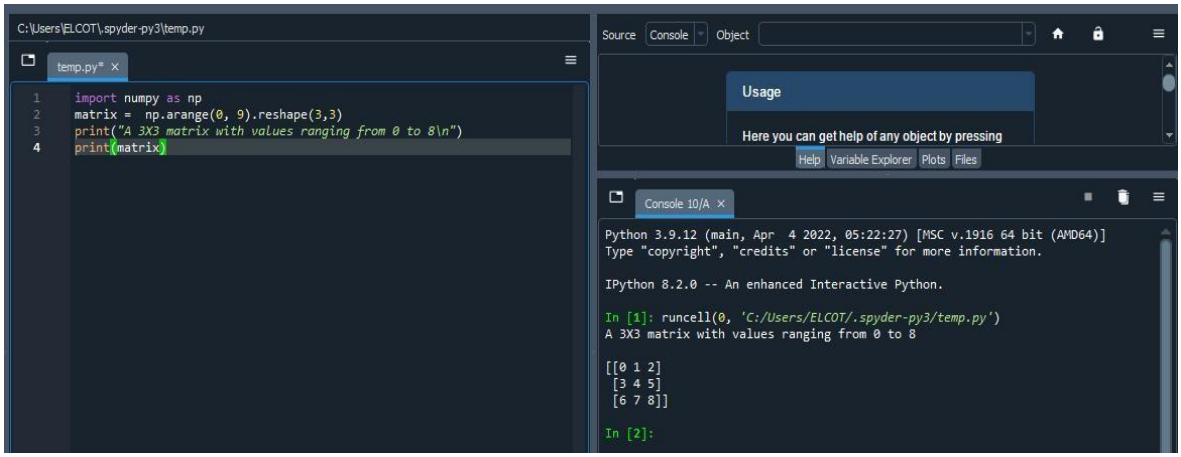
Create a 3x3 matrix with values ranging from 0 to 8

```
import numpy as np
matrix =  np.arange(0, 9).reshape(3,3)
print("A 3X3 matrix with values ranging from 0 to 8\n")
print(matrix)
```

Solution:

```
A 3X3 matrix with values ranging from 0 to 8
[[0 1 2]
[3 4 5]
[6 7 8]]
```

Output:



Question-7:

Concatenate a and b

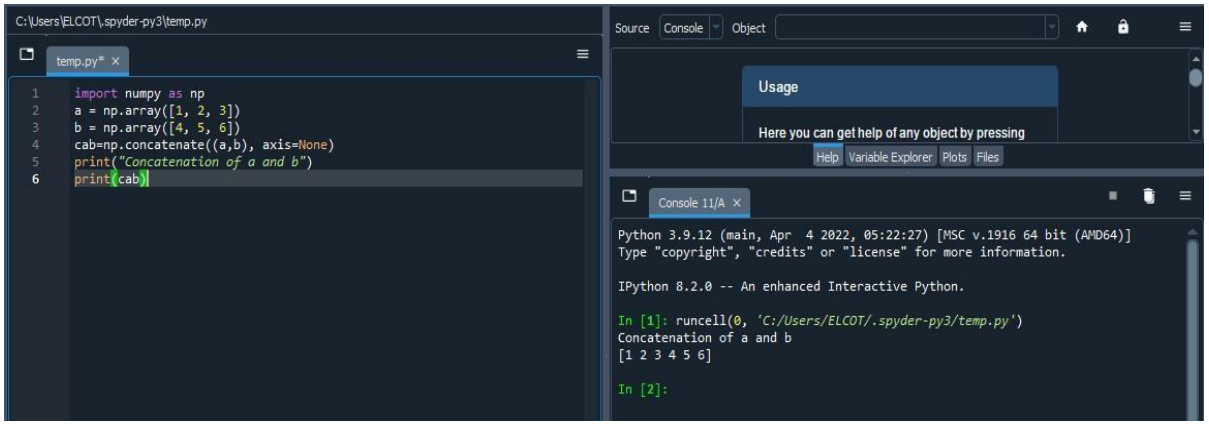
```
a = np.array([1, 2, 3]),
b = np.array([4, 5, 6])
```

```
import numpy as np
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
cab=np.concatenate((a,b), axis=None)
print("Concatenation of a and b")
print(cab)
```

Solution:

```
Concatenation of a and b
[1 2 3 4 5 6]
```

Output:



Pandas

Question-8:

```
import pandas as pd
```

Create a dataframe with 3 rows and 2 columns

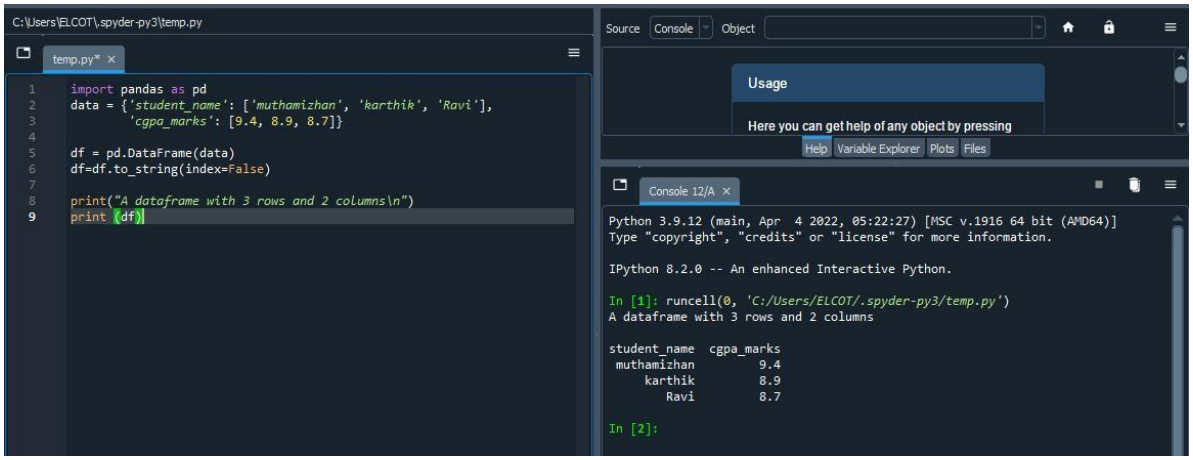
```
import pandas as pd
data = {'student_name': ['muthamizhan', 'karthik', 'Ravi'],
        'cgpa_marks': [9.4, 8.9, 8.7]}
df = pd.DataFrame(data)
df=df.to_string(index=False)
print("A dataframe with 3 rows and 2 columns\n")
print (df)
```

Solution:

A dataframe with 3 rows and 2 columns

student_name	cgpa_marks
muthamizhan	9.4
karthik	8.9
Ravi	8.7

Output:



Question-9

Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023

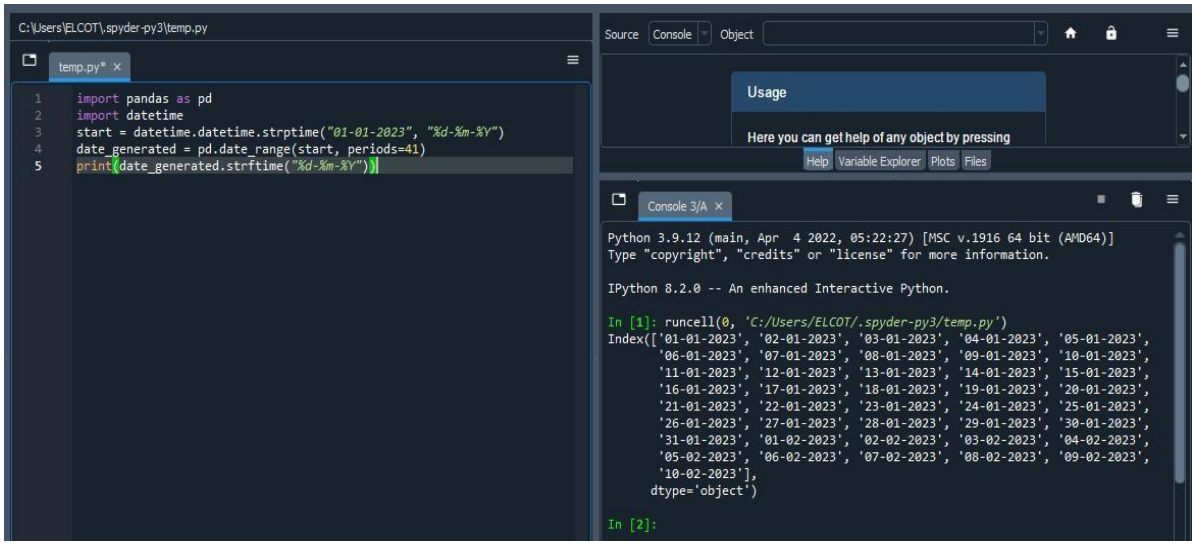
```
import pandas as pd
import datetime
start = datetime.datetime.strptime("01-01-2023","%d-%m-
        %Y")
date_generated = pd.date_range(start, periods=41)
print(date_generated.strftime("%d-%m-%Y")
```

Solution:

Index(['01-01-2023', '02-01-2023', '03-01-2023', '04-01-2023',
'05-01-2023','06-01-2023', '07-01-2023', '08-01-2023',
'09-01-23', '10-01-2023','11-01-2023', '12-01-2023',
'13-01-2023', '14-01-2023', '15-01-2023','16-01-2023',

```
'17-01-2023', '18-01-2023', '19-01-2023', '20-01-2023',
'21-01-2023', '22-01-2023', '23-01-2023', '24-01-2023',
'25-01-2023','26-01-2023', '27-01-2023', '28-01-2023',
'29-01-2023', '30-01-2023','31-01-2023', '01-02-2023',
'02-02-2023', '03-02-2023', '04-02-2023','05-02-2023',
'06-02-2023', '07-02-2023', '08-02-2023', '09-02-2023',
'10-02-2023'],
dtype='object')
```

Output:



Question-10:

Create 2D list to DataFrame

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists, columns =['no', 'name', 'd_no'])
df=df.to_string(index=False)
print("Given 2D list")
print(lists)
print("\n2D list to dataframe")
print(df)
```

Solution:

Given 2D list

[[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

2D list to dataframe

no	name	d_no
1	aaa	22
2	bbb	25
3	ccc	24

Output: