

Assignment -1

Python Programming

Assignment Date	19 September 2022
Student Name	Ms.Aishwarya.G
Student Roll Number	113219071001
Maximum Marks	2 Marks

Question-1:

Split this string.

Solution:

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

The screenshot shows a Python code editor interface. On the left, there's a toolbar with icons for Python (a blue square with a white 'P'), Run (a blue square with a white play button), and Shell (a blue square with a white terminal icon). The main area has tabs for 'main.py' and 'Shell'. In the 'main.py' tab, the code is:

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

In the 'Shell' tab, the output is:

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

Question-2:

Use .format() to print the following string.

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

Solution:

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

The screenshot shows a Jupyter Notebook interface. On the left, there are three icons: a Python logo, a C logo, and another Python logo. The main area has a tab labeled "main.py". The code in "main.py" is:

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

On the right, there are three buttons: a copy icon, a refresh icon, and a blue "Run" button. Below the buttons is a "Shell" section. The output in the Shell is:

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

Question-3:

In this nest dictionary grab the word "hello"

Solution:

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

The screenshot shows a Jupyter Notebook interface. On the left, there are three icons: a Python logo, a C logo, and another Python logo. The main area has a tab labeled "main.py". The code in "main.py" is:

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

On the right, there are three buttons: a copy icon, a refresh icon, and a blue "Run" button. Below the buttons is a "Shell" section. The output in the Shell is:

```
hello
> |
```

Question-4.1:

Create an array of 10 zeros?

Solution:

```
import numpy as np
x=np.zeros(10)
print(x)
#-----#
#-----#
```

The screenshot shows a Jupyter Notebook interface. On the left, there are three icons: a Python logo, a C logo, and another Python logo. The main area has a tab labeled "main.py". The code in "main.py" is:

```
1 import numpy as np
2 print(np.zeros(10))
3 |
```

On the right, there are three buttons: a copy icon, a refresh icon, and a blue "Run" button. Below the buttons is a "Shell" section. The output in the Shell is:

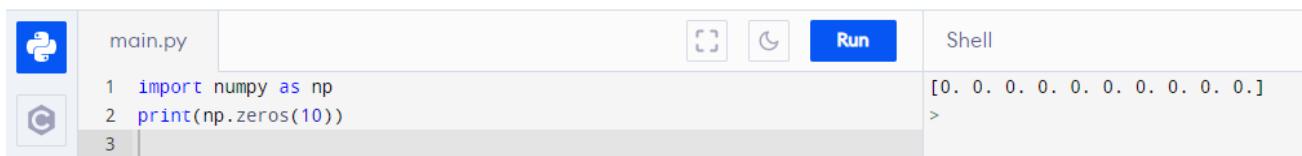
```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

Question-4.2:

Create an array of 10 fives?

Solution:

```
import numpy as np
x=np.ones(10)*5
print(x)
#-----#
#-----#
```



The screenshot shows a Jupyter Notebook interface. On the left, there are two icons: a Python logo and a C logo. Next to them is the file name "main.py". The code cell contains three lines of Python code: "import numpy as np", "x=np.zeros(10)", and "print(x)". To the right of the code cell is a "Run" button. Below the code cell is a "Shell" output area. The output shows the result of running the code: "[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]".

Question-5:

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

Solution:

```
import numpy as np
x=np.arange(20,36,2)
print(x)
#-----#
#-----#
```



The screenshot shows a Jupyter Notebook interface. On the left, there are two icons: a Python logo and a C logo. Next to them is the file name "main.py". The code cell contains three lines of Python code: "import numpy as np", "print(np.arange(20,35,2))", and "2". To the right of the code cell is a "Run" button. Below the code cell is a "Shell" output area. The output shows the result of running the code: "[20 22 24 26 28 30 32 34]".

Question-6:

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

Solution:

```
import numpy as np
x=np.arange(0,9).reshape(3,3)
print(x)
#-----#
#-----#
```

The screenshot shows a Jupyter Notebook interface. On the left, there are three icons: Python (selected), Cell, and Kernel. The main area contains a code cell with the following content:

```
main.py
1 import numpy as np
2 print(np.arange(0,9).reshape(3,3))
3
```

To the right of the code cell is a "Run" button. Below the code cell is a "Shell" section containing the output:

```
[0 1 2]
[3 4 5]
[6 7 8]]> |
```

Question-7:

Concatenate a and b

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

Solution:

```
a=np.array([1,2,3])
b=np.array([4,5,6])
c=np.concatenate((a,b))
print(c)
#-----#
#-----#
```

The screenshot shows a Jupyter Notebook interface. On the left, there are three icons: Python (selected), Cell, and Kernel. The main area contains a code cell with the following content:

```
main.py
1 import numpy as np
2 a = np.array([1, 2, 3])
3 b = np.array([4, 5, 6])
4 print(np.concatenate((a,b)))
5
```

To the right of the code cell is a "Run" button. Below the code cell is a "Shell" section containing the output:

```
[1 2 3 4 5 6]> |
```

Question-8:

Pandas

Create a dataframe with 3 rows and 2 columns

Solution:

```
import pandas as pd
d={'a':[1,2,3],
  'b':[4,5,6]}
y=pd.DataFrame(d)
print(y)

#-----#
#-----#
```

The screenshot shows a Jupyter Notebook interface with three tabs: 'main.py', 'Run', and 'Shell'. The 'main.py' tab contains Python code to create a DataFrame. The 'Run' tab has two small icons. The 'Shell' tab displays the resulting DataFrame:

	col_1	col_2
0	5	8
1	7	3
2	2	6
>		

Question-9:

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

Solution:

```
import pandas as pd
x=pd.date_range(start='1-1-2023',
                 end='2-10-2023')
for val in x:
    print(val)

#-----#
#-----#
```

The screenshot shows a Jupyter Notebook interface. On the left, there are four icons: a blue Python logo, a grey C/C++ logo, a grey C# logo, and a grey Java logo. The main area has tabs for 'main.py' and 'Shell'. The 'main.py' tab contains the following Python code:

```
1 import pandas as pd
2 date=pd.date_range(start='01.01.2023',end='10.02.2023')
3 print(date)
```

The 'Run' button is highlighted in blue. To the right, the 'Shell' tab displays the output of the code:DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
 '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
 '2023-01-09', '2023-01-10',
 ...
 '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
 '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
 '2023-10-01', '2023-10-02'],
 dtype='datetime64[ns]', length=275, freq='D')

A 'Clear' button is located in the top right corner of the Shell tab.

Question-10:

Create 2D list to DataFrame

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

Solution:

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

```
x=pd.DataFrame(lists)
print(x)
#-----#
#-----#
```

The screenshot shows a Jupyter Notebook interface. On the left, there are four icons: a blue Python logo, a grey C/C++ logo, a grey C# logo, and a grey Java logo. The main area has tabs for 'main.py' and 'Shell'. The 'main.py' tab contains the following Python code:

```
1 import pandas as pd
2 lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
3 df=pd.DataFrame(lists)
4 print(df)
```

The 'Run' button is highlighted in blue. To the right, the 'Shell' tab displays the output of the code:0 1 2
0 1 aaa 22
1 2 bbb 25
2 3 ccc 24
>