

Assignment -1  
Python Programming

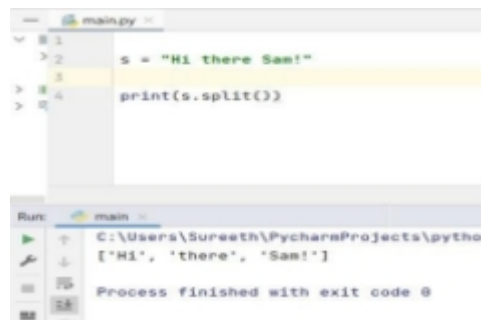
|                     |                   |
|---------------------|-------------------|
| Assignment Date     | 19 September 2022 |
| Student Name        | Mr. Shanmugam P L |
| Student Roll Number | 113219071039      |
| Maximum Marks       | 2 Marks           |

Question-1:

## 1. Split this string

Solution:

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



Question-  
2:

## 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))
```

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

---

```
main
C:\Users\Sureeth\PycharmProjects\pythonProject8\venv\py\Scripts\python.exe C:/User
The diameter of Earth is 12742 kilometers.
Process finished with exit code 0
```

### 3. In this nest dictionary grab the word "hello"

#### Solution:

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

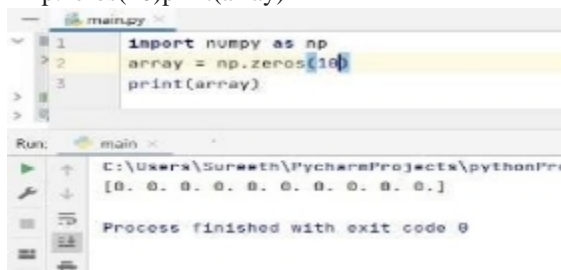
```
print(d['k1'][3]['tricky'][3]['target'][3])
```



### 4.1 4.1 Create an array of 10 zeros?

#### Solution:

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

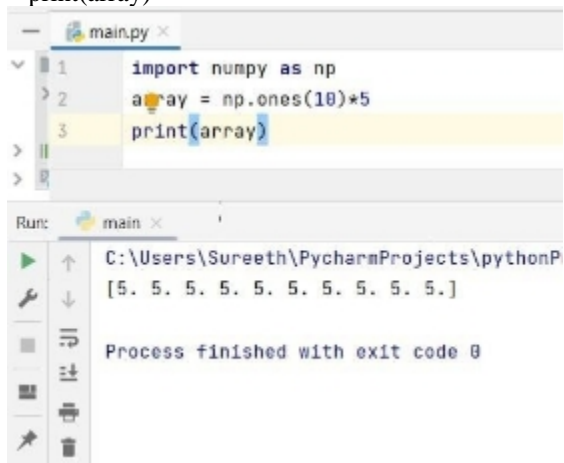


### 4.2 4.2 Create an array of 10 fives?

#### Solution:

```
Import numpy as np  
array = np.ones(10)*5
```

`print(array)`



The screenshot shows a PyCharm IDE with a file named `main.py`. The code in the editor is as follows:

```
1 import numpy as np
2 array = np.ones(10)*5
3 print(array)
```

Below the editor, the 'Run' window shows the execution path and the output:

```
C:\Users\Sureeth\PycharmProjects\pythonP
[5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

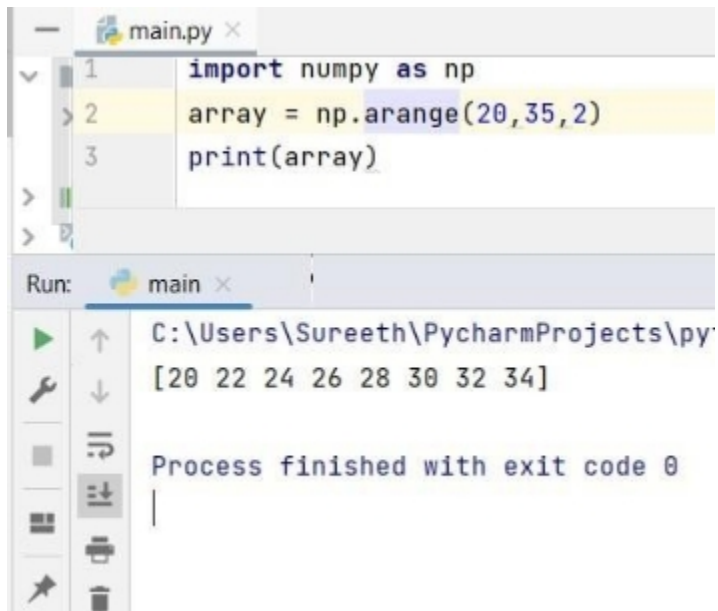
The process finished with exit code 0.

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

**Solution:**

Import numpy as np

`array = np.arange(20,35,2)print(array)`



The screenshot shows a PyCharm IDE with a file named `main.py`. The code in the editor is as follows:

```
1 import numpy as np
2 array = np.arange(20,35,2)
3 print(array)
```

Below the editor, the 'Run' window shows the execution path and the output:

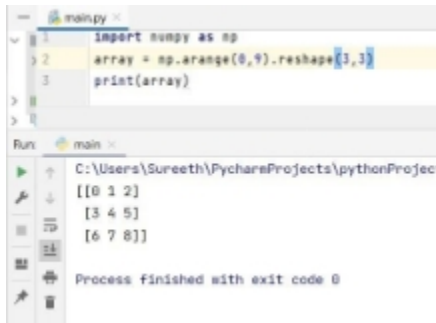
```
C:\Users\Sureeth\PycharmProjects\py
[20 22 24 26 28 30 32 34]
```

The process finished with exit code 0.

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

**Solution:**

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



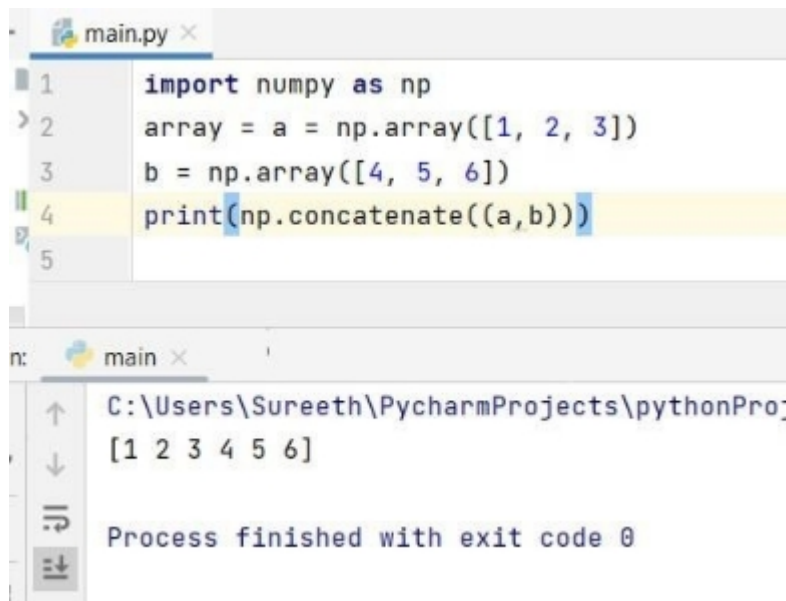
The screenshot shows a Python IDE with a file named 'main.py'. The code in the editor is: `import numpy as np`, `array = np.arange(0,9).reshape(3,3)`, and `print(array)`. The output window shows the resulting 3x3 matrix: `[[0 1 2]`, `[3 4 5]`, `[6 7 8]]`. The process finished with exit code 0.

7. Concatenate a and b

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

**Solution:**

```
import numpy as np
```



The screenshot shows a Python IDE with a file named 'main.py'. The code in the editor is: `import numpy as np`, `array = a = np.array([1, 2, 3])`, `b = np.array([4, 5, 6])`, and `print(np.concatenate((a,b)))`. The output window shows the concatenated array: `[1 2 3 4 5 6]`. The process finished with exit code 0.

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

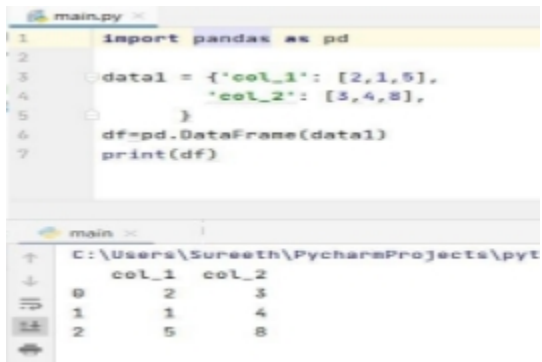
```
np.array([4,5,6])  
print(np.concatenate((a,b)))
```

## 8. Create a dataframe with 3 rows and 2 columns

### Solution:

```
import pandas as pd

data = {'col_1': [2,1,5],
        'col_2': [3,4,8],
        }
df=pd.DataFrame(data)print(df)
```



The screenshot shows a Python IDE with a file named 'main.py'. The code in the editor is as follows:

```
1 import pandas as pd
2
3 data1 = {'col_1': [2,1,5],
4         'col_2': [3,4,8],
5         }
6 df=pd.DataFrame(data1)
7 print(df)
```

Below the editor, the output of the code is displayed in a console window. It shows a DataFrame with two columns, 'col\_1' and 'col\_2', and three rows of data:

|   | col_1 | col_2 |
|---|-------|-------|
| 0 | 2     | 3     |
| 1 | 1     | 4     |
| 2 | 5     | 8     |

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

### Solution:

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

```
main.py x
1 import pandas as pd
2
3 dates=pd.date_range(start='01.01.2023',end='10.02.2023')
4 print(dates)

main x
C:\Users\Sureeth\PycharmProjects\pythonProject8\venv\py\Scripts\python.exe
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')

Process finished with exit code 0
```

## 10. Create 2D list to DataFrame

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

### Solution:

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



```
main.py x
1 import pandas as pd
2 lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
3 df1=pd.DataFrame(lists)
4 print(df1)
```

```
main x
C:\Users\Sureeth\PycharmProjects\pythonProject8\venv\py\Scripts\pyth
0 1 2
0 1 aaa 22
1 2 bbb 25
2 3 ccc 24
Process finished with exit code 0
```