

## ASSIGNMENT – 1

### Python Programming

Assignment Date	<u>15/09/2022</u>
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Maximum Marks	<u>2 Marks</u>

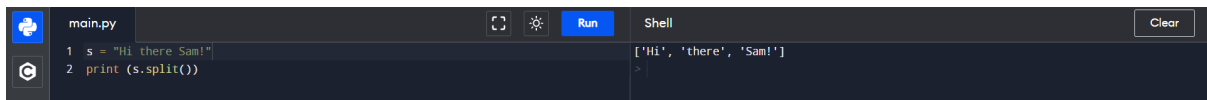
## Basic Python

### 1. Split this string

```
s = "Hi there Sam!"
```

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

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



### 2. Use .format() to print the following string.

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

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

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

the diameter of Earth is 12742 kilometers

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

```
Shell
the diameter of Earth is 12742 kilometers
> |
```

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

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

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

Hello

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

```
Shell
hello
> |
```

## Numpy

```
import numpy as np
```

### 4.1 Create an array of 10 zeros?

### 4.2 Create an array of 10 fives?

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

An array of 10 zeros:

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

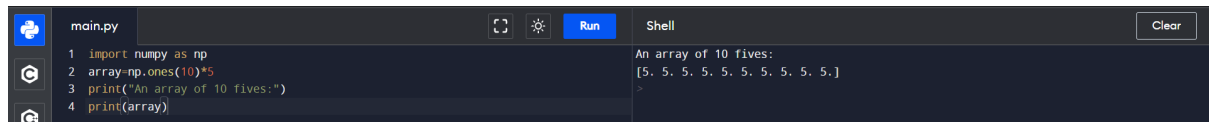
```
main.py
1 import numpy as np
2 array=np.zeros(10)
3 print("An array of 10 zeros:")
4 print(array)
```

```
Shell
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
> |
```

```
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
```

An array of 10 fives:

[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]

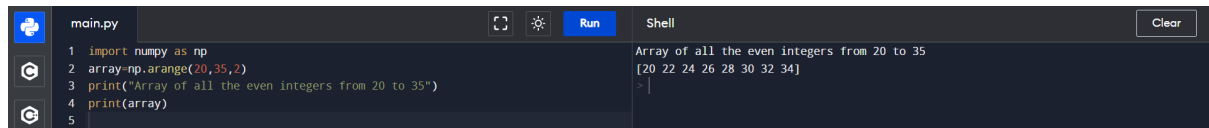


## 5. Create an array of all the even integers from 20 to 35

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

Array of all the even integers from 20 to 35

[20 22 24 26 28 30 32 34]



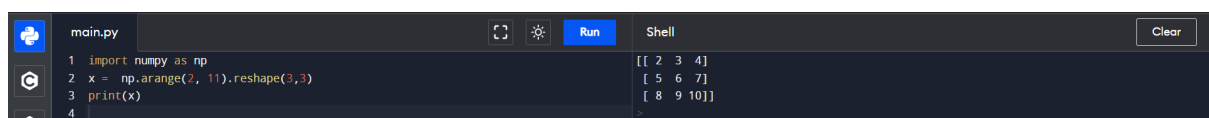
## 6. Create a 3x3 matrix with values ranging from 0 to 8

```
import numpy as np
x = np.arange(2, 11).reshape(3,3)
print(x)
```

[[ 2 3 4]

[ 5 6 7]

[ 8 9 10]]

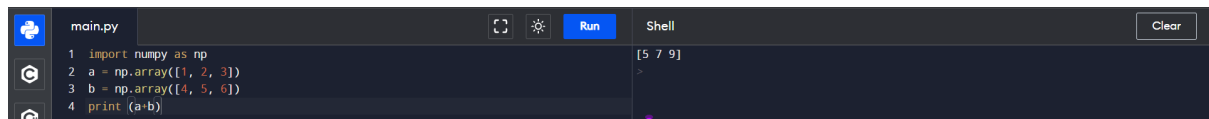


## 7. Concatenate a and b

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

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

[5 7 9]



The screenshot shows a code editor with a file named 'main.py' containing the following code:

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

The 'Run' button is highlighted. The output in the 'Shell' pane is:

```
[5 7 9]
```

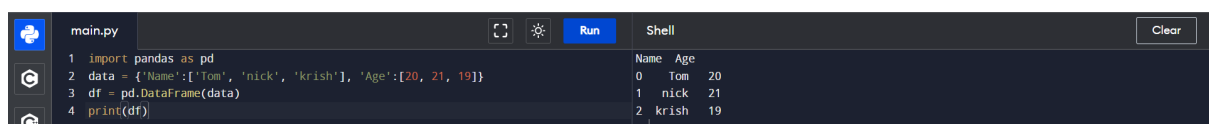
## Pandas

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

```
import pandas as pd
```

```
data = {'Name':['Tom', 'nick', 'krish'], 'Age':[20, 21, 19]}
df = pd.DataFrame(data)
print(df)
```

```
Name Age
0 Tom 20
1 nick 21
2 krish 19
```



The screenshot shows a code editor with a file named 'main.py' containing the following code:

```
1 import pandas as pd
2 data = {'Name':['Tom', 'nick', 'krish'], 'Age':[20, 21, 19]}
3 df = pd.DataFrame(data)
4 print(df)
```

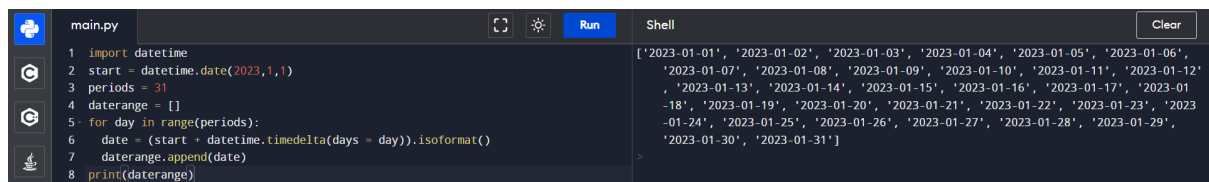
The 'Run' button is highlighted. The output in the 'Shell' pane is:

```
Name Age
0 Tom 20
1 nick 21
2 krish 19
```

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

```
import datetime
start = datetime.date(2023,1,1)
periods = 31
daterange = []
for day in range(periods):
    date = (start + datetime.timedelta(days = day)).isoformat()
    daterange.append(date)
print(daterange)
```

```
['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', '2023-01-11', '2023-01-12', '2023-01-13', '2023-01-14',
'2023-01-15', '2023-01-16', '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20', '2023-01-21',
'2023-01-22', '2023-01-23', '2023-01-24', '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
'2023-01-29', '2023-01-30', '2023-01-31']
```



The screenshot shows a code editor with a file named 'main.py' containing the Python code from the previous block. To the right, a 'Shell' window displays the output of the code, which is a list of 31 ISO-formatted dates from '2023-01-01' to '2023-01-31'.

## 10. Create 2D list to DataFrame

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

In [16]:


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

In [17]:



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

Out[17]:



```
   0  1  2
0  1  aa  2
   1  a  2
1  2  bb  2
   1  b  5
2  3  ccc 2
   2  4
```



main.py



Run



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

Shell

Clear

```
0  1  2
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
> |
```