

Assignment -1

Python
Programming

Assignment Date	19 September 2022
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Student Roll Number	922519205108
Maximum Marks	2 Marks

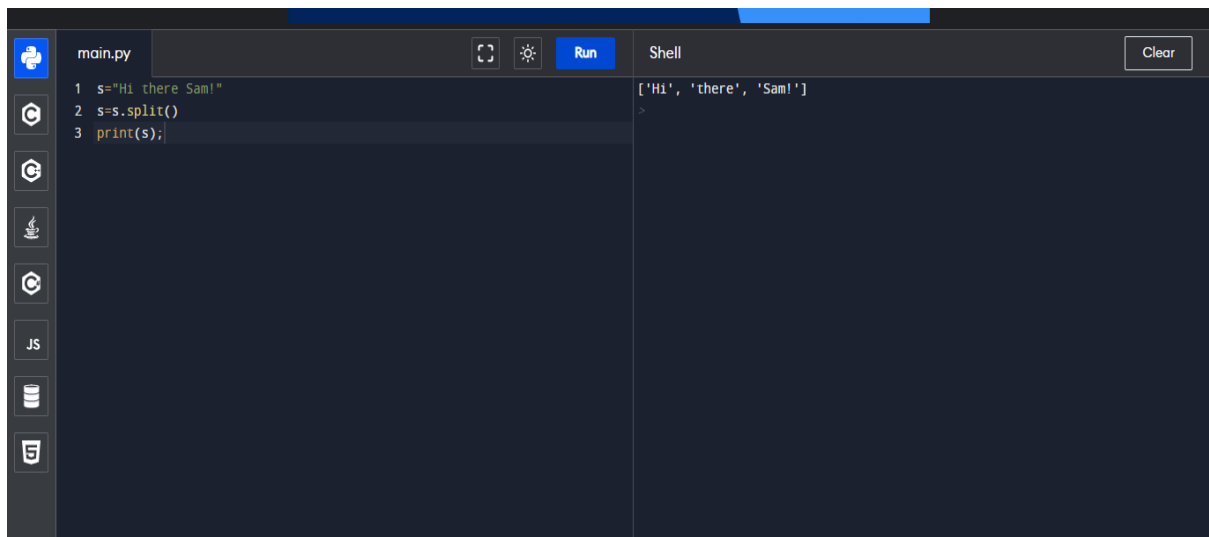
Question-1:

Split this string

Solution:

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

```
#.....#  
#.....#
```



The screenshot shows a Python IDE interface. On the left, a file named 'main.py' is open, containing the following code:

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

On the right, the 'Shell' window displays the output of the code execution:

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

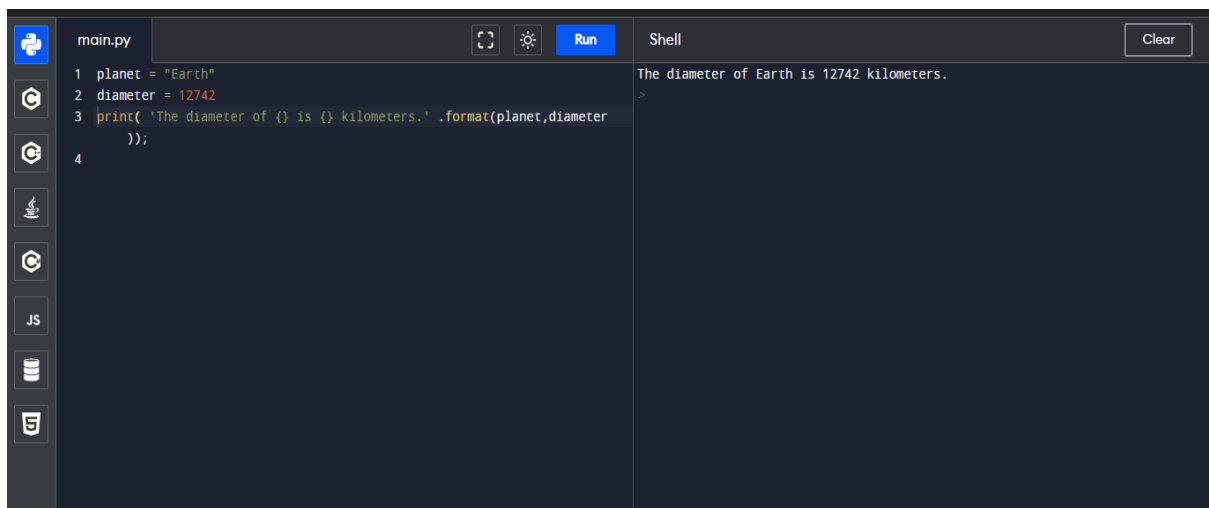
The IDE interface includes a sidebar with various icons for file management and a 'Run' button at the top of the code editor.

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 code editor with a dark theme. On the left, a sidebar contains icons for Python, a file explorer, a search icon, a terminal icon, a JS icon, a database icon, and a settings icon. The main editor area is titled 'main.py' and contains the following Python code:

```
1 planet = "Earth"  
2 diameter = 12742  
3 print( 'The diameter of {} is {} kilometers.' .format(planet,diameter  
4         ));
```

On the right side of the editor, there is a 'Shell' pane with a 'Clear' button. It displays the output of the code:

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

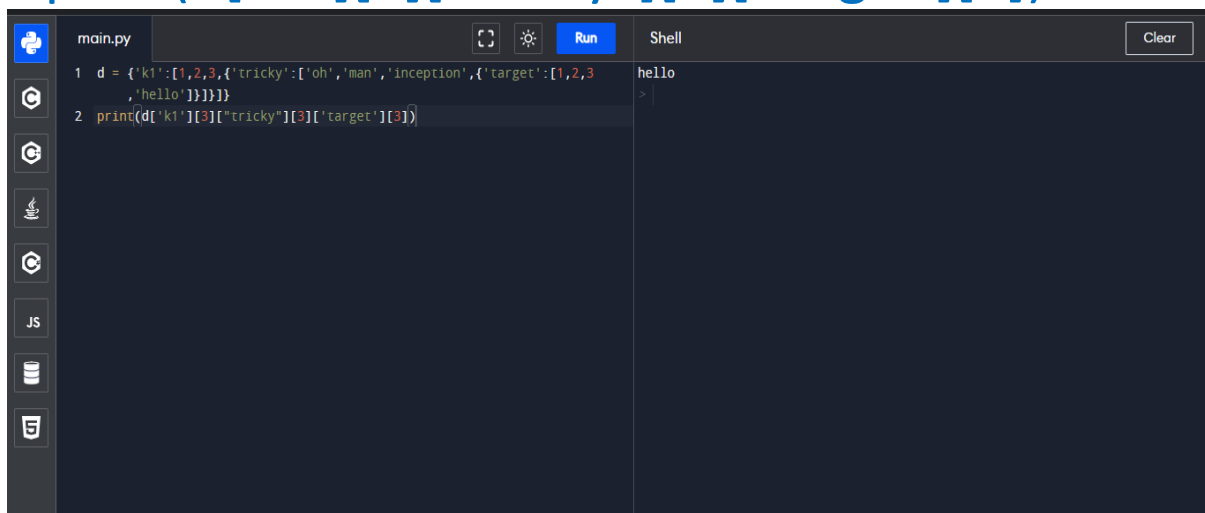
Question-3:

In this nest dictionary grab the word "hello"

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

Solution:

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

A screenshot of a code editor interface. The left pane shows a file named 'main.py' with two lines of Python code. The first line defines a nested dictionary 'd'. The second line prints the value at the path d['k1'][3]['tricky'][3]['target'][3]. The right pane, labeled 'Shell', shows the output 'hello'. The editor has a dark theme and a sidebar on the left with various icons.

```
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
```

Question-4:

Numpy

import numpy as np

4.1 Create an array of 10 zeros?

Solution:

```
np.zeros(10)
```

4.2 Create an array of 10 fives?

Solution:

`np.ones(10)*5`

```
Numpy

In [ ]: import numpy as np

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [ ]: np.zeros(10)
Out[ ]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

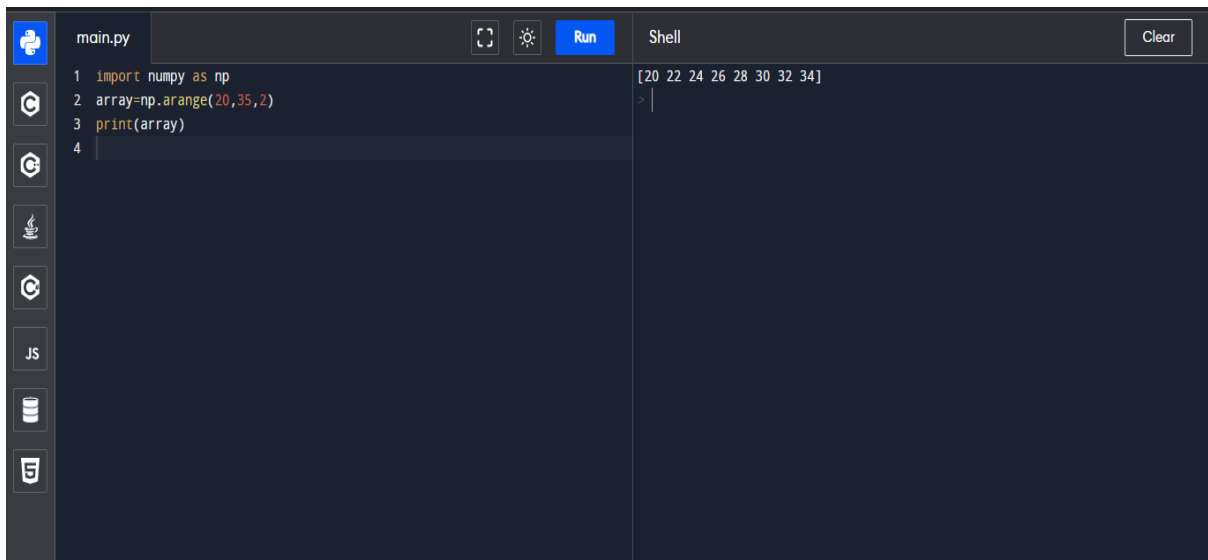
In [ ]: np.ones(10)*5
Out[ ]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

Question-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 Jupyter Notebook interface. The left sidebar contains icons for various tools: a Python logo, a file explorer, a search icon, a terminal icon, a console icon, a JS icon, a database icon, and a document icon. The main area is divided into two panels. The top panel, labeled 'main.py', contains the following Python code:

```
1 import numpy as np
2 array=np.arange(20,35,2)
3 print(array)
4
```

The bottom panel, labeled 'Shell', shows the output of the code:

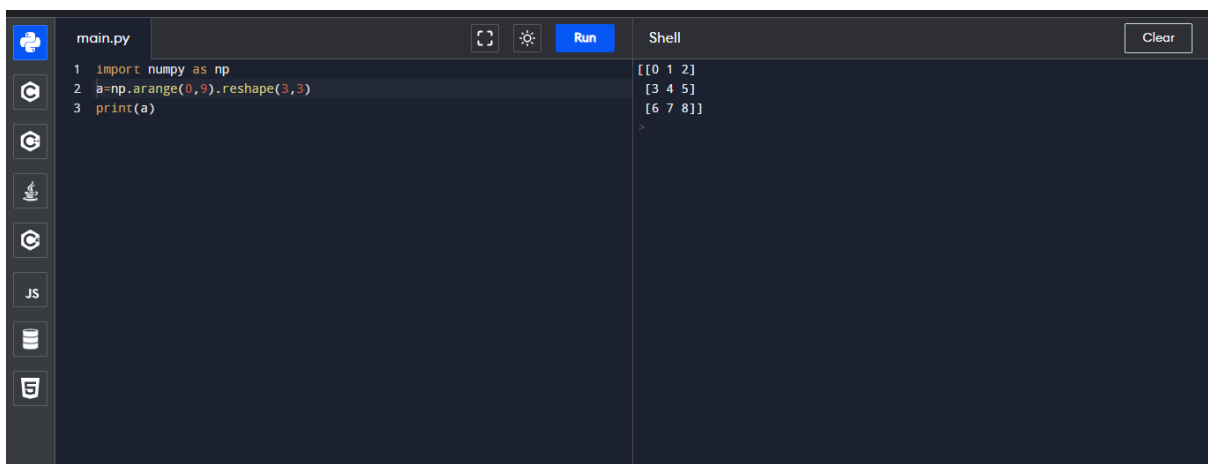
```
[20 22 24 26 28 30 32 34]
>
```

Question-6:

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

Solution:

```
a=np.arange(0,9).reshape(3,3)
print(a)
```



The screenshot shows a Jupyter Notebook interface. The left sidebar contains icons for various tools: a Python logo, a file explorer, a search icon, a terminal icon, a console icon, a JS icon, a database icon, and a document icon. The main area is divided into two panels. The top panel, labeled 'main.py', contains the following Python code:

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

The bottom panel, labeled 'Shell', shows the output of the code:

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

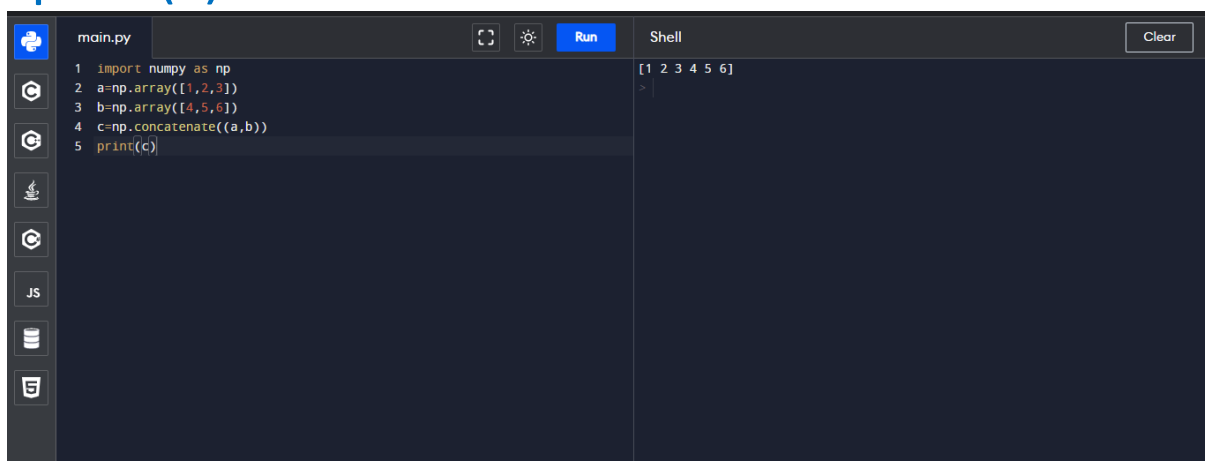
Question-7:

Concatenate a and b

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

Solution:

```
import numpy as np
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 with a dark theme. On the left, there is a sidebar with icons for file explorer, search, and other notebook functions. The main area is divided into two panes. The left pane, titled 'main.py', contains the following Python code:

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

The right pane, titled 'Shell', shows the output of the code execution:

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

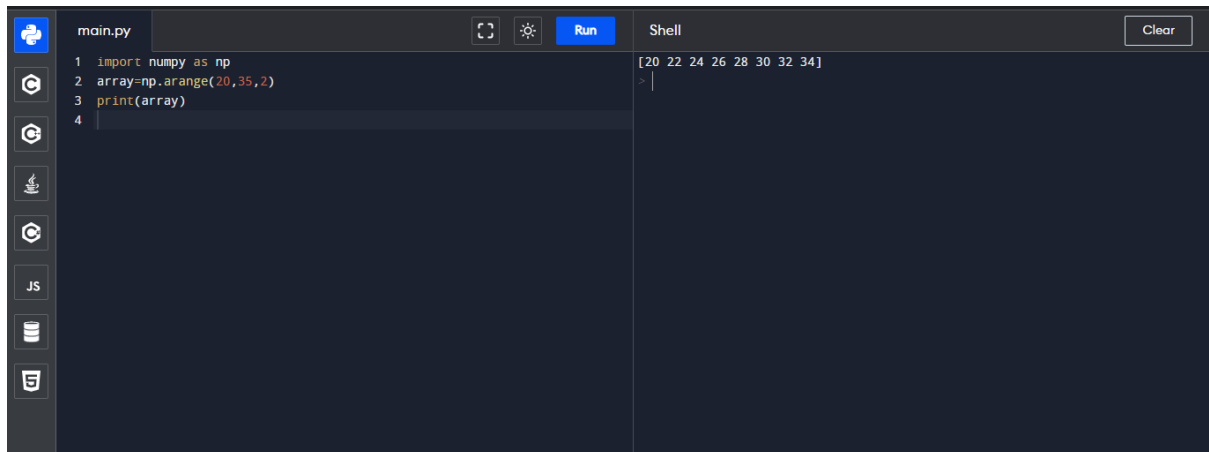
Pandas

Question-8:

Create a dataframe with 3 rows and 2 columns

Solution:

```
import pandas as pd
array=np.arange(20,35,2)
print(array)
```

A screenshot of a Jupyter Notebook interface. The left sidebar contains icons for file management, search, and other tools. The main area is split into two panes. The top pane, titled 'main.py', contains the following Python code:

```
1 import numpy as np
2 array=np.arange(20,35,2)
3 print(array)
4
```

The bottom pane, titled 'Shell', displays the output of the code as a single line of text:

```
[20 22 24 26 28 30 32 34]
```

Question-9:

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

Solution:

```
import pandas as pd
a=pd.date_range(start='01-01-2023',end='10-02-2023')
for i in a:
    print(i)
```

```
main.py  Run Shell Clear
1 import pandas as pd
2 a=pd.date_range(start='01-01-2023',end='10-02-2023')
3 for i in a:
4     print(i)

2023-01-01 00:00:00
2023-01-02 00:00:00
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
```

```
main.py  Run Shell Clear
1 import pandas as pd
2 a=pd.date_range(start='01-01-2023',end='10-02-2023')
3 for i in a:
4     print(i)

2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

Question-10:

Create 2D list to DataFrame

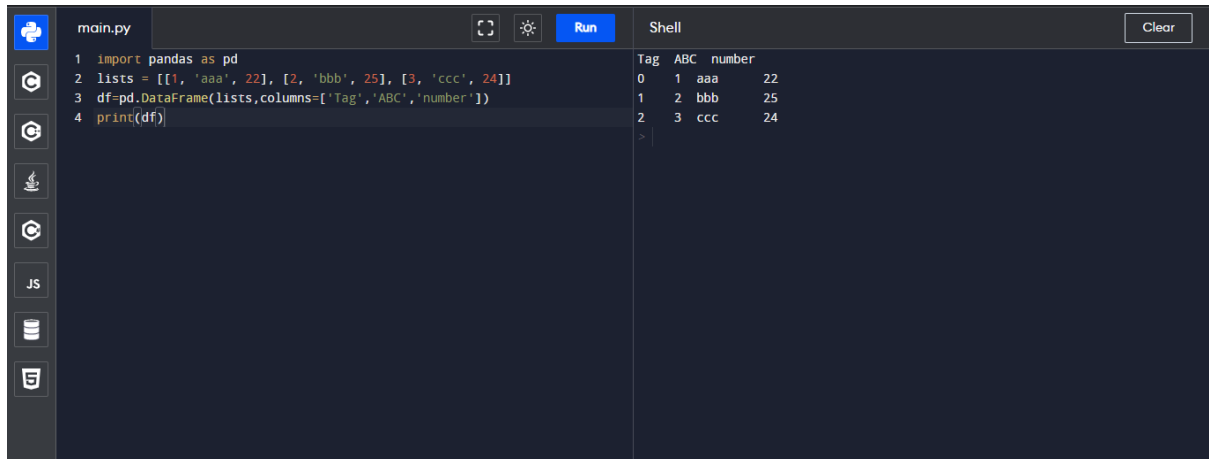
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

Solution:

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



```
df=pd.DataFrame(lists,columns=['Tag','ABC','number'])
print(df)
```



The screenshot shows a Jupyter Notebook interface with a dark theme. On the left, a sidebar contains icons for file management, search, and other tools. The main area is split into two panes. The left pane, titled 'main.py', 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,columns=['Tag','ABC','number'])
4 print(df)
```

The right pane, titled 'Shell', displays the output of the code as a table:

	Tag	ABC	number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

Below the table, there is a prompt character '>' indicating the shell is ready for input. A 'Clear' button is located in the top right corner of the Shell pane.

