

## Assignment -1

Python  
Programming

Assignment Date	19 September 2022
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Maximum Marks	2 Marks

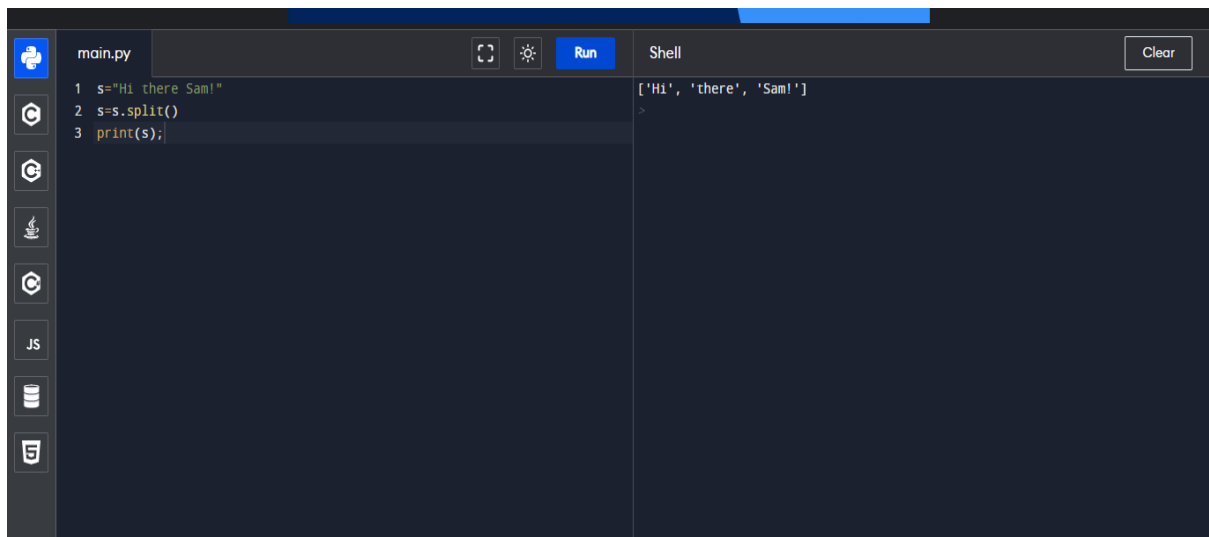
### Question-1:

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!']  
>
```

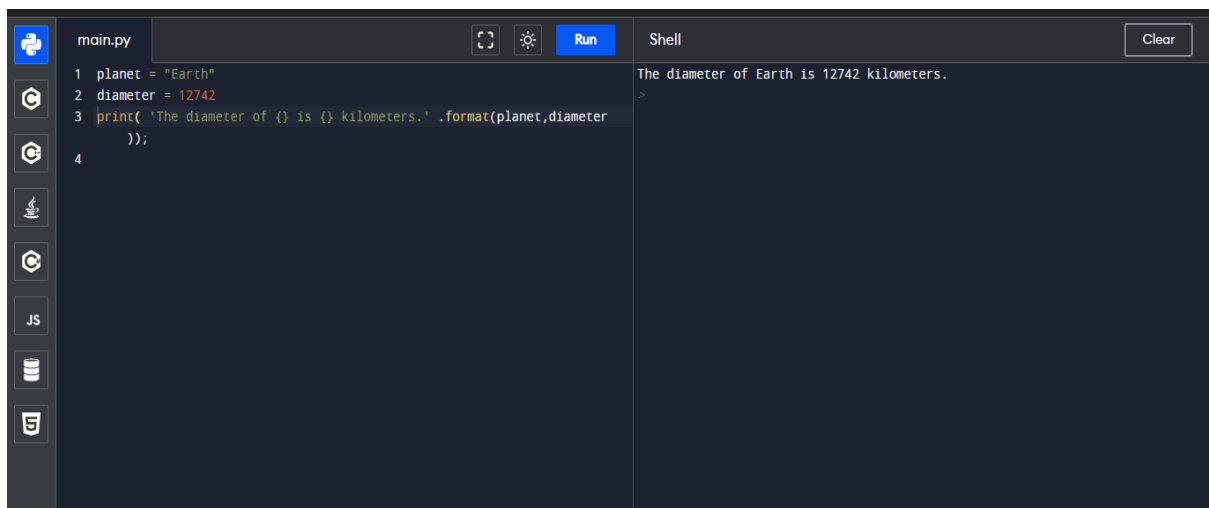
The IDE interface includes a sidebar with various icons for file management and a 'Run' button at the top of the code editor.

## 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.  
>
```

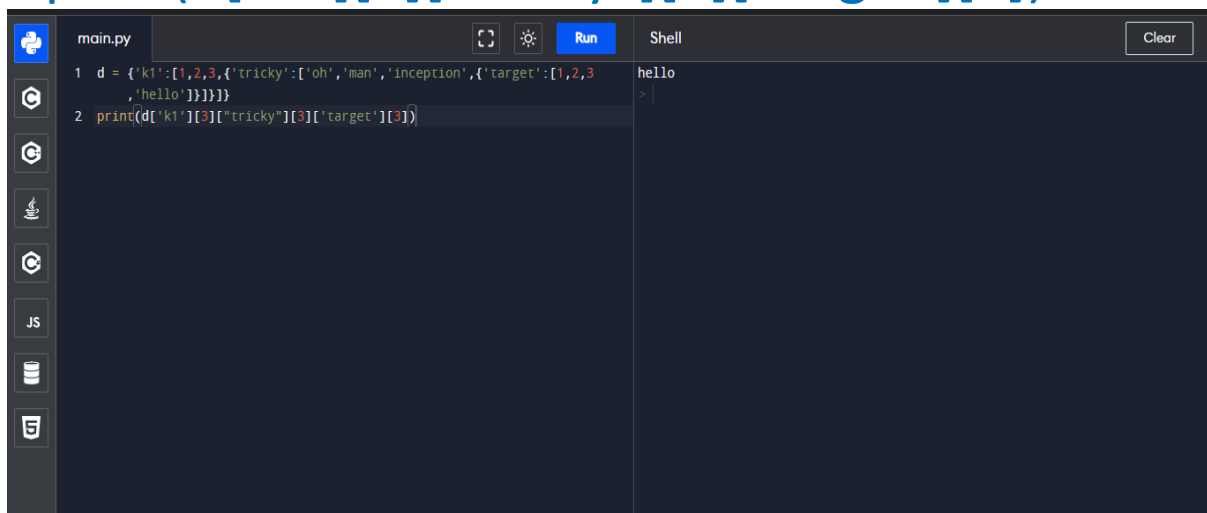
## Question-3:

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.])

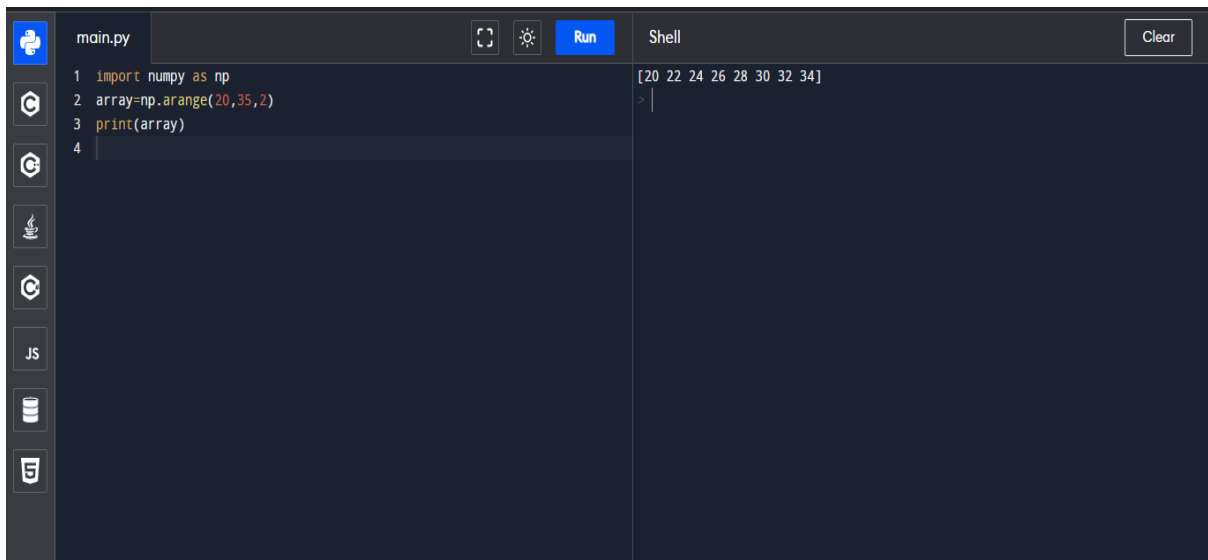
In [ ]: np.ones(10)*5
Out[ ]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

## 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 cloud icon, a gear icon, a magnifying glass icon, a document icon, a JS icon, a database icon, and a file 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:

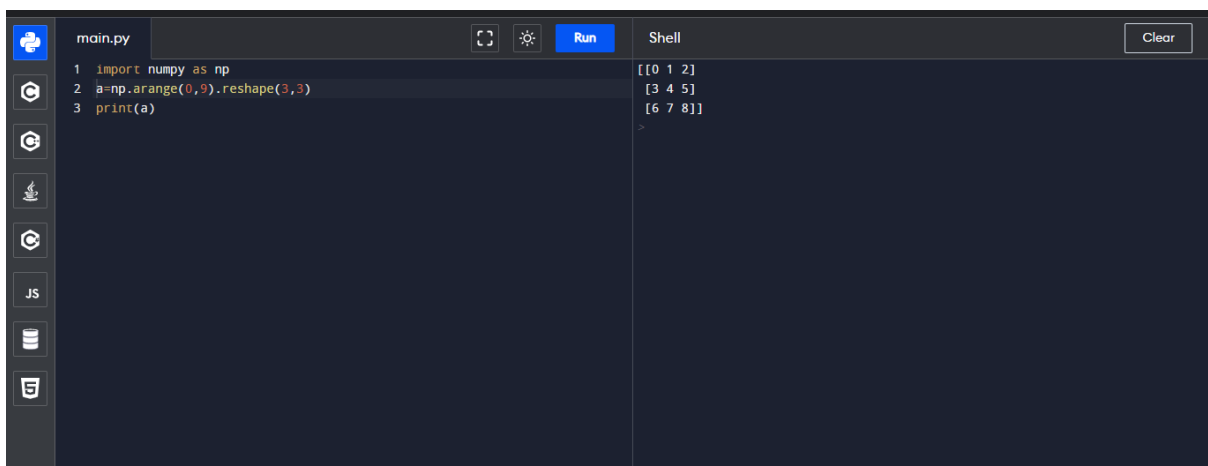
```
[20 22 24 26 28 30 32 34]
>
```

## 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 cloud icon, a gear icon, a magnifying glass icon, a document icon, a JS icon, a database icon, and a file 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]]
>
```

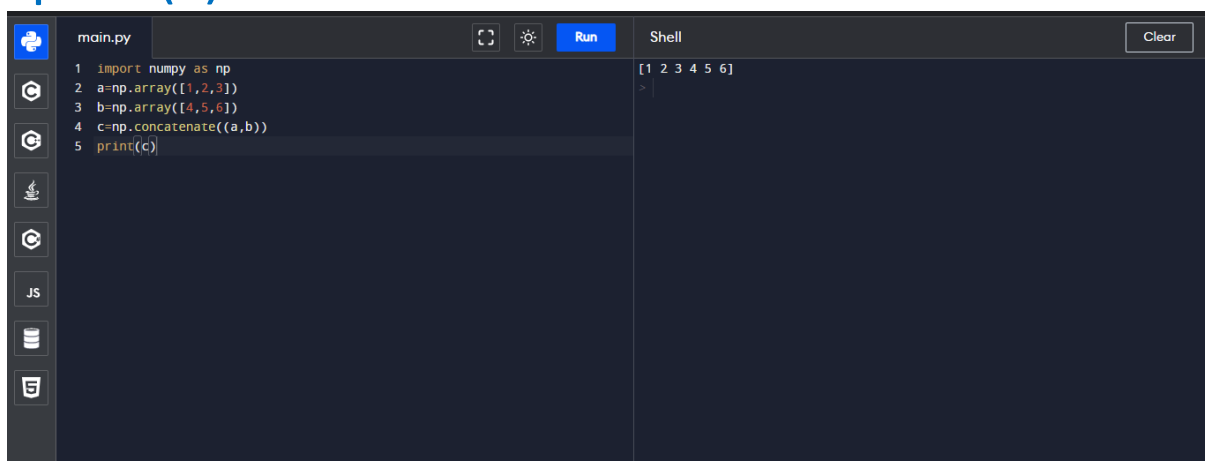
## Question-7:

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)
```



```
main.py  Run  Shell  Clear
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)
[1 2 3 4 5 6]
```

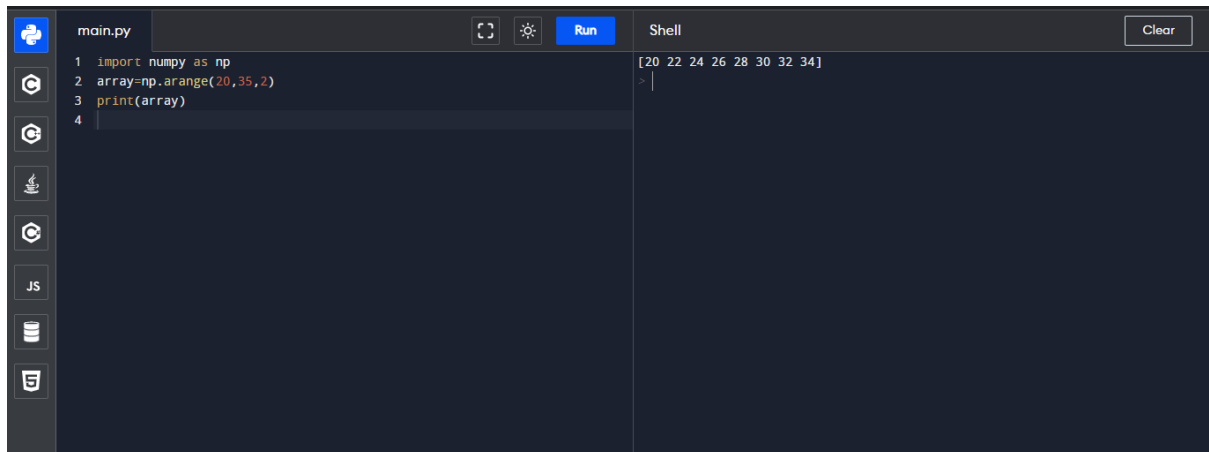
## Pandas

### Question-8:

Create a dataframe with 3 rows and 2 columns

Solution:

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

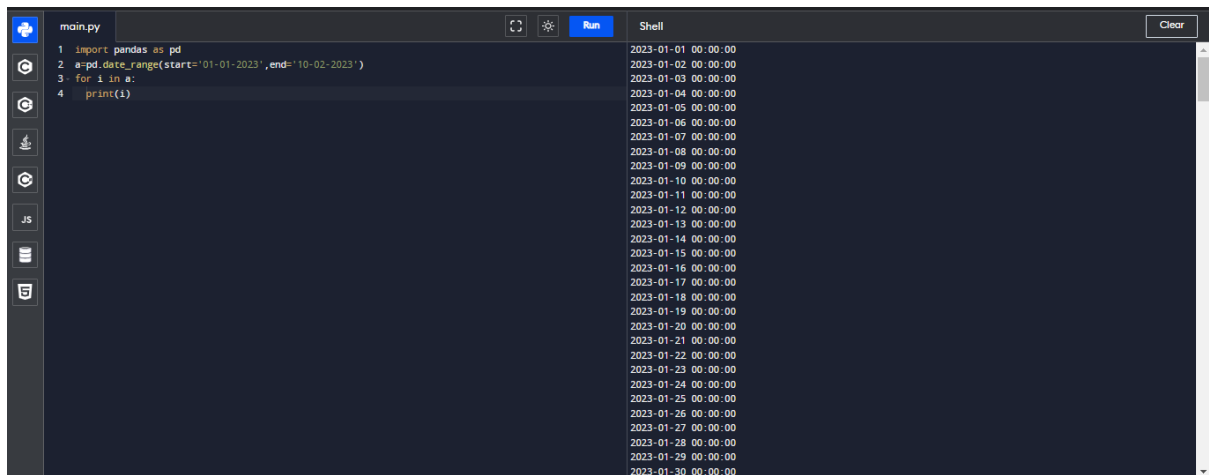
A screenshot of a Jupyter Notebook interface. The left sidebar contains icons for file management, search, and other tools. The main area is split into two panes. The left pane, titled 'main.py', contains a Python script with four lines: '1 import numpy as np', '2 array=np.arange(20,35,2)', '3 print(array)', and '4'. The right pane, titled 'Shell', shows the output of the script as a single line: '[20 22 24 26 28 30 32 34]'. A 'Run' button is visible above the script, and a 'Clear' button is visible above the output.

### Question-9:

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

Solution:

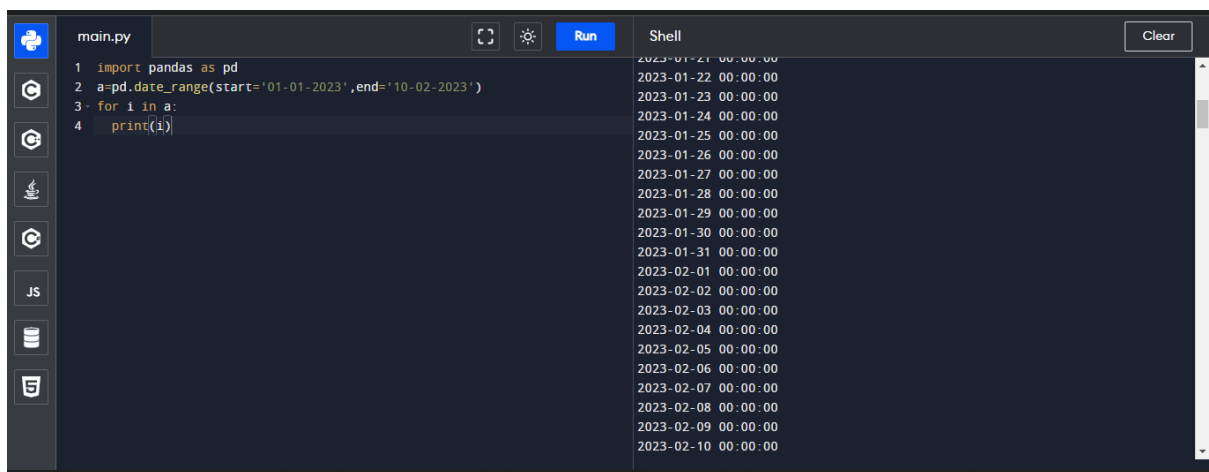
```
import pandas as pd
a=pd.date_range(start='01-01-2023',end='10-02-2023')
for i in a:
    print(i)
```



The screenshot shows a Jupyter Notebook with a file named 'main.py'. The code in the cell is:

```
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)
```

The output in the Shell pane shows a list of dates from 2023-01-01 00:00:00 to 2023-01-30 00:00:00, printed one per line.



The screenshot shows a Jupyter Notebook with a file named 'main.py'. The code in the cell is:

```
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)
```

The output in the Shell pane shows a list of dates from 2023-01-21 00:00:00 to 2023-02-10 00:00:00, printed one per line.

## Question-10:

Create 2D list to DataFrame

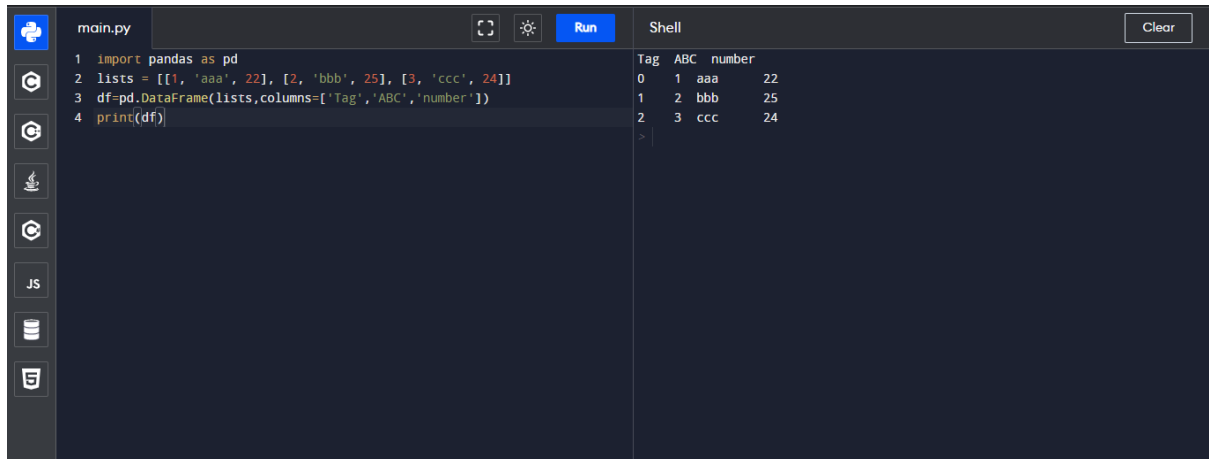
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

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 is a sidebar with icons for file management, search, and other tools. The main area is split into two panes. The left pane, titled 'main.py', contains a Python script with four lines of code: importing pandas, defining a list of lists, creating a DataFrame with specific column names, and printing the DataFrame. The right pane, titled 'Shell', shows the output of the script as a text representation of a DataFrame with three columns: 'Tag', 'ABC', and 'number'. The output shows three rows of data.

```
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)
```

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

