Basic Python

1. Split this string

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

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

```
['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 {} is {} kilometers".format('Earth','12742'))
```

```
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']}]}]}
d['k1'][3]['tricky'][3]['target'][3]
```

```
'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
arr=np.zeros(10)
print("An array of 10 zeros:")
print(arr)
```

```
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

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

```
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
arr=np.arange(20,35,2)
print("An array of all even integers from 20 to 35:")
print(arr)
```

```
An array of all 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(0,9).reshape((3,3))
print(x)
```

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

7. Concatenate a and b

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

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
import pandas as pd
data=[['tom',10],['nick',15],['juli',14]]
df=pd.DataFrame(data,columns=['Name','Ag'])
df
```

	Name	Ag
0	tom	10
1	nick	15
2	juli	14

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

```
import pandas pd
import pandas as pd
period=pd.date_range(start='1-1-2023',end='10-2-2023')
```

```
for val in period:
print (val)
```

```
  File "<ipython-input-16-000b2f57578a>", line 1
    import pandas pd
                  ^
SyntaxError: invalid syntax
```

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10. Create 2D list to DataFrame

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

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

```
import pandas as pd
lst=[[1,'aaa',22],[2,'bbb',25],[3,'ccc',24]]
df=pd.DataFrame(lst,columns=['Tag','Name','Age'],dtype=float)
print(df)
```

```
   Tag Name   Age
0  1.0  aaa  22.0
1  2.0  bbb  25.0
2  3.0  ccc  24.0
/usr/local/lib/python3.7/dist-packages/IPython/core/interactiveshell.py:3326: FutureW
  exec(code_obj, self.user_global_ns, self.user_ns)
```

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