Basic Python

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1. Split this string

In [ ]:
```
s = "Hi there Sam!"
```

In [ ]:
```
s="Hi there sam"
s=s.split()
print(s)
```

```
['Hi', 'there', 'sam']
```

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

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

In [ ]:
```
planet = "Earth"
diameter = 12742
```

In [ ]:
```
planet="Earth"
diameter=12742
print('The diameter of {} is {} kilometers.' .format(planet,diameter));
```

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

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

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

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

```
hello
```

Numpy

In [ ]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [ ]:
```
import numpy as np
arr = np.array([0,0,0,0,0,0,0,0,0,0])
print(arr)
print(type(arr))
```

```
[0 0 0 0 0 0 0 0 0 0]
<class 'numpy.ndarray'>
```

In [ ]:
```
import numpy as np
arr = np.array([5,5,5,5,5,5,5,5,5,5])
print(arr)
print(type(arr))
```

```
[5 5 5 5 5 5 5 5 5 5]
<class 'numpy.ndarray'>
```

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

In [ ]:
```
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

In [ ]:
```
import numpy as np
x=np.arange(0,9).reshape(3,3)
print(x)
```

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

7. Concatinate a and b

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

In [ ]:
```
import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
np.concatenate((a,b), axis=None)
```

Out[22]:
```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [ ]:
```
import pandas as pd
data = [10,20,30]
df = pd.DataFrame(data, columns=['Numbers'])
df
```

Out[23]:

	Numbers
0	10
1	20
2	30

In [ ]:
```

```

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

In [ ]:
```
import pandas as pd
per1=pd.date_range(start='1-Jan-2023',end='10-Feb-2023')
for val in per1:
  print(val)
```

```
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
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

```
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
```

10. Create 2D list to DataFrame

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

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

In [ ]:
```
import pandas as pd
lists=[[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
print(type(lists))
dt=zip(lists)
df=pd.DataFrame(dt,columns=["d"])
print(type(df))
print(df)
```

```
<class 'list'>
<class 'pandas.core.frame.DataFrame'>
              d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
```