Basic Python

1. Split this string

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

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

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

```
['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
```

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

In [ ]:
```
text = "The diameter of {planet} is {diameter} kilometers.".format(planet = "Eart
print(text)
```

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

Out[11]:
```
'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.zeros(10)
print(arr)
```

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

In [ ]:
```
import numpy as np
arr = np.ones(10)*5
print(arr)
```

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

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

In [ ]:
```
import numpy as np
arr = np.arange(20,36,2)
print(arr)
```

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

```
[[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])
c = np.concatenate((a,b), axis = 0)
print(c)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [ ]:
```
import pandas as pd
```

In [ ]:
```
import pandas as pd
import numpy as np
arr = np.arange(0,6).reshape(3,2)
df = pd.DataFrame(arr)
print(df)
```

```
   0  1
0  0  1
1  2  3
2  4  5
```

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

In [1]:
```
import pandas as pd
date = pd.date_range(start = '1-1-2023', end = '10-2-2023')
print(date)
```

```
DatetimeIndex(['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',
               ...
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

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]]
list2d = pd.DataFrame(lists, columns = ['Id', 'Name', 'Age'])
print(list2d)
```

```
   Id Name  Age
0   1  aaa   22
1   2  bbb   25
2   3  ccc   24
```