

November 20, 2022

1 Basic Python

1.1 1. Split this string

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

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

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

1.2 2. Use .format() to print the following string.

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

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

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

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

1.3 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']}]}}]}
```

```
print(d['k1'][3]['tricky'][3]['target'][3])
```

```
hello
```

2 Numpy

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

2.1 4.1 Create an array of 10 zeros?

2.2 4.2 Create an array of 10 fives?

```
[ ]: import numpy as np
zeroarray = np.zeros(10)
print(zeroarray)
```

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

```
[ ]: fivearray = np.ones(10)*5
print(fivearray)
```

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

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

```
[ ]: even = np.arange(20,35,2)
print(even)
```

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

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

```
[ ]: import numpy as np
x=np.arange(2,11).reshape(3,3)
print(x)
```

```
[[ 2  3  4]
 [ 5  6  7]
 [ 8  9 10]]
```

2.5 7. Concatenate a and b

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

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

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

3 Pandas

3.1 8. Create a dataframe with 3 rows and 2 columns

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

```
[ ]: import pandas as pd
      data=[['Math',92],['Science',88],['Social',95]]
      df=pd.DataFrame(data,columns=['Subjects','Marks'])
      print(df.to_string(index=False))
```

Subjects	Marks
Math	92
Science	88
Social	95

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

```
[ ]: import pandas as pd
      pd.date_range(start="2023-01-01",end="2023-02-10")
```

```
[ ]: 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', '2023-01-11', '2023-01-12',
                    '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
                    '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
                    '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
                    '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
                    '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',
                    '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
                    '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
                    '2023-02-10'],
                    dtype='datetime64[ns]', freq='D')
```

3.3 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 pandas
lists=[[1,'aaa',22],[2,'bbb',25],[3,'ccc',24]]
df=pd.DataFrame(lists, columns=['Sl.No','Name','Number'])
print(df.to_string(index=False))
```

Sl.No	Name	Number
1	aaa	22
2	bbb	25
3	ccc	24