Basic Python

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

1. Split this string

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

```
['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
```

8. Create a dataframe with 3 rows and 2 columns

```
[ ] import pandas as pd
    c={'a':[1,2,3],
       'b':[4,5,6]}
    d=pd.DataFrame(c)
    print(d)
```

```
   a  b
0  1  4
1  2  5
2  3  6
```

```
[ ]
```

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

```
[ ] import pandas as pd
    d=pd.date_range(start='1-1-2023',e
```

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

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

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

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

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

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

```
[ ] planet = "Earth"
    diameter = 12742
    print('The diameter of {planet} is
```

```
The diameter of Earth is 12742 k
```

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

```
[ ] d = {'k1':[1,2,3,{'tricky':['oh','
```

```
[ ] d = {'k1':[1,2,3,{'tricky':['oh','
    z= d['k1'][3]['tricky'][3]['target
    print(z)
```

```
hello
```

Numpy

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

7. Concatenate a and b

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

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
[ ] import pandas as pd
    c={'a':[1,2,3],
       'b':[4,5,6]}
    d=pd.DataFrame(c)
    print(d)
```

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

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

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

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

```
[[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])

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

10. Create 2D list to DataFrame

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

```
[ ] lists = [[1, 'aaa', 22], [2, 'bbb'
```

```
[ ] lists = [[1, 'aaa', 22], [2, 'bbb'
    z=pd.DataFrame(lists)
    print(z)
```

```
   0    1   2
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
```

```
[ ] import pandas as pd
    d=pd.date_range(start='1-1-2023',e
    for val in d:
      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
```