PREDICTING THE ENERGY OUTPUT OF WIND TURBINE BASED ON WEATHER CONDITION

ASSIGNMENT - 1

Date	13th September 2022
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Domain Name	Education
Project Name	Predicting the energy output of wind turbine based on weather condition
Maximum Marks	2 Marks

1.)SPLIT THE STRING

1. Split this string

```
In [1]: s = "Hi there Sam!"

In [2]: s.split(sep=' ')
Out[2]: ['Hi', 'there', 'Sam!']
```

2.)USE .format() TO PRINT THE FOLLOWING STRING

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

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

```
In [3]: planet = "Earth"
        diameter = 12742
        txt = 'The diameter of {planet} is {diameter} kilometers.'

In [4]: txt.format(planet=planet,diameter=diameter)
Out[4]: 'The diameter of Earth is 12742 kilometers.'
```

3.)IN THE NEST DICTIONARY GRAB THE WORD “HELLO”

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

```
In [5]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

In [6]: d['k1'][3]['tricky'][3]['target'][3]
Out[6]: 'hello'
```

4.) NUMPY

1.) CREATE AN ARRAY OF 10 ZEROS

2.) CREATE AN ARRAY OF 10 FIVES

Numpy

```
In [7]: import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [8]: np.zeros(10)
Out[8]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

In [9]: np.ones(10)*5
Out[9]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

5.)CREATE ARRAY OF ALL THE EVEN INTEGERS FROM 20 to 35

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

```
In [10]: np.arange(20,35,2)
Out[10]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

6.)CREATE A 3x3 MATRIX WITH VALUES FROM 0 to 8

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

```
In [11]: np.arange(9).reshape(3,3)
Out[11]: array([[0, 1, 2],
                [3, 4, 5],
                [6, 7, 8]])
```

7.)CONCATENATE a AND b

7. Concatenate a and b

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

In [12]:
```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
c = np.concatenate([a,b])
c
```

Out[12]:
```
array([1, 2, 3, 4, 5, 6])
```

8.) PANDAS
CREATE A DATAFRAME WITH 3 ROWS AND 2 COLUMNS

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [13]:
```
import pandas as pd
df = pd.DataFrame({'name':['Prem','John','Steve'],'Role':['Android Developer','Full Stack Developer','Software Developer']})
```

In [14]:
```
df
```

Out[14]:

	name	Role
0	Prem	Android Developer
1	John	Full Stack Developer
2	Steve	Software Developer

9.) GENERATE THE SERIES OF DATES
FROM 1st JAN 2023 TO 10th FEB 2023

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

In [15]:
```
df = pd.DataFrame(pd.date_range('01-01-2023','02-10-2023'))
df
```

Out[15]:

	0
0	2023-01-01
1	2023-01-02
2	2023-01-03
3	2023-01-04
4	2023-01-05
5	2023-01-06
6	2023-01-07
7	2023-01-08
8	2023-01-09
9	2023-01-10
10	2023-01-11
11	2023-01-12
12	2023-01-13
13	2023-01-14
14	2023-01-15
15	2023-01-16
16	2023-01-17
17	2023-01-18

18	2023-01-19
19	2023-01-20
20	2023-01-21
21	2023-01-22
22	2023-01-23
23	2023-01-24
24	2023-01-25
25	2023-01-26
26	2023-01-27
27	2023-01-28
28	2023-01-29
29	2023-01-30
30	2023-01-31
31	2023-02-01
32	2023-02-02
33	2023-02-03
34	2023-02-04
35	2023-02-05
36	2023-02-06
37	2023-02-07
38	2023-02-08
39	2023-02-09
40	2023-02-10

10.) CREATE 2D LIST TO DATAFRAME

10. Create 2D list to DataFrame

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

In [16]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [17]:
```
pd.DataFrame(lists)
```

Out[17]:

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