

# 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