

ASSINGMENT-2

Assignment Date	19 September 2022
Student Name	Selva kumar
Student Roll Number	715319106303
Maximum Marks	2 Marks

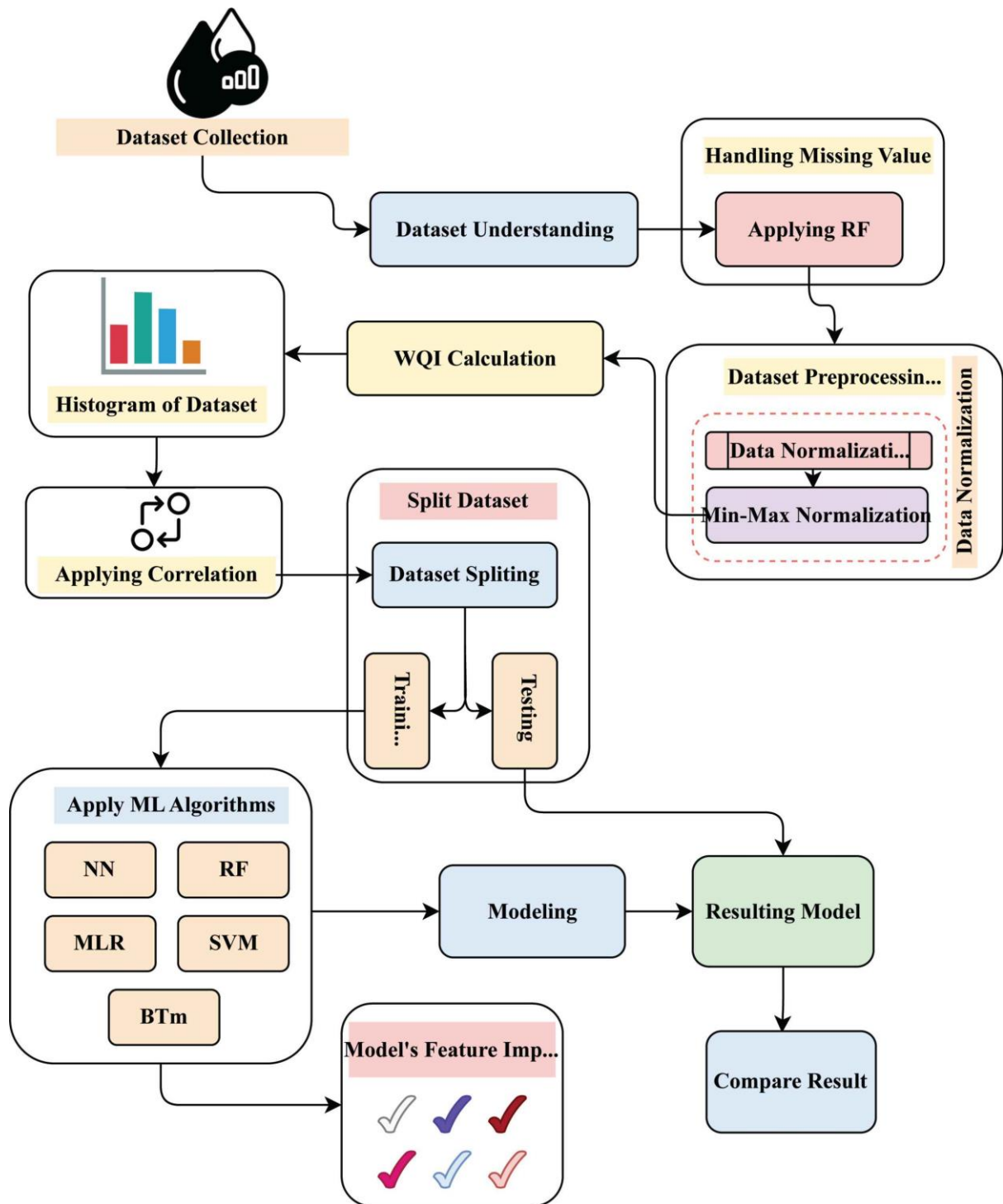
EFFICIENT WATER QUALITY ANALAYSIS & PREDICTION USING MACHINE LEARING

INTRODUCTION

Millions and their changing preferences have led to a wide-scale disruption of daily processes in many industries and a simultaneous growth of many more in other sectors. Much like hand soaps and cereals, the use of a physical bank location has declined. Physical bank locations may soon be a thing of the past, as per a report from Business Insider.

The customer preferences that are changing, the industries are adopting newer methods to match the pace of changing demands. Banking is digitizing as the word spreads. There is evident incorporation of operational process flows with artificial intelligence, robotics, and other machine assistance.

Technology and the fourth industrial revolution have penetrated its way into many sectors. This technology is now reconstructing social skills and the workforce. Not only limiting the existence of a changing workforce, but the use of artificial intelligence is very evident in the banking sector. Artificial intelligence applications are not just the banking sector but the entire world as we know of.



1.Split this string

In []:

```
string="Hi there Sam!"
print(string.split())
['Hi', 'there', 'Sam!']
```

2. Use format() to print the following string

In []:

```
planet="Earth"
diameter=12742
print('The diameter of {} is {} kilometers.'.format(planet,diameter));
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']}]}]}
print(d['k1'][3]["tricky"][3]['target'][3])
hello
```

4.1. Create an array of 10 zeros?

In []:

```
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

4.2. Create an array of 10 fives?

In [1]:

```
import numpy as np
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
An array of 10 fives:
[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
array=np.arange(20,36,2)
print("Array of all the even integers from 20 to 36")
print(array)
Array of all the even integers from 20 to 36
[20 22 24 26 28 30 32 34]
```

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

In [2]:

```
import numpy as np
x = np.arange(0, 9).reshape(3,3)
print(x)
[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

7.Concatinate a and b

In [3]:

```
import numpy as np
a = np.array([1, 2, 3])
print(a)
b = np.array([4, 5, 6])
print(b)
print('\n---Result of a and b---')
print(np.concatenate((a, b)))
[1 2 3]
[4 5 6]

---Result of a and b---
[1 2 3 4 5 6]
```

8.Create a dataframe with 3 rows and 2 columns

In [4]:

```
import pandas as pd
data = [['tom', 10], ['nick', 15], ['juli', 14]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
print(df)
   Name  Age
0   tom   10
1  nick   15
2  juli   14
```

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

In [5]:

```
import datetime
import pandas as pd

# initializing date
test_date = datetime.datetime.strptime("01-01-2023", "%d-%m-%Y")

# initializing periods
periods = datetime.datetime.strptime("10-02-2023", "%d-%m-%Y")

date_generated = pd.date_range(test_date, periods)
print(date_generated.strftime("%d-%m-%Y"))
Index(['01-01-2023', '02-01-2023', '03-01-2023', '04-01-2023', '05-01-2023',
       '06-01-2023', '07-01-2023', '08-01-2023', '09-01-2023', '10-01-2023',
       '11-01-2023', '12-01-2023', '13-01-2023', '14-01-2023', '15-01-2023',
       '16-01-2023', '17-01-2023', '18-01-2023', '19-01-2023', '20-01-2023',
       '21-01-2023', '22-01-2023', '23-01-2023', '24-01-2023', '25-01-2023',
       '26-01-2023', '27-01-2023', '28-01-2023', '29-01-2023', '30-01-2023',
       '31-01-2023', '01-02-2023', '02-02-2023', '03-02-2023', '04-02-2023',
       '05-02-2023', '06-02-2023', '07-02-2023', '08-02-2023', '09-02-2023',
       '10-02-2023'],
      dtype='object',
      freq='D',
      name='date_generated',
      tupleize_cols=False)
```

```

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

```

10.Create 2D list of DataFrame

In [6]:

```

import pandas as pd

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

df = pd.DataFrame(lists, columns=['ID', 'Name', 'Age'])
print(df)

```

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

Application Areas

Artificial Intelligence is working to personalize human experiences with machines. Robots replacing the front-office staff in the banking sector are aimed to provide a **24*7 uninterrupted, diligent, and undeterred expertise** to the customer in front.

Banking today is witnessing a collaboration between humans and machines. This collaboration again is opening doors to customized opportunities for better service encounters and delivery.

Benefits

- * Improved service responses
- * Reduction in human error
- * Personalized options in the making
- * Strengthening customer base by increasing satisfaction and trust

* Reducing time to travel locations

Banks are capturing the artificial intelligence by administering it into daily operational workflow by including changes in the values, employment and information patterns. Some of the application areas of artificial intelligence in the banking industry are listed as follows: