

Bangladesh University of Business and Technology

Department of CSE

Assignment

Course Title: Data Mining **Course code**: CSE-476

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Intake: 41 Section: 03

Submitted To

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 Apply data preprocessing steps (such as: Viewing your data, Handling duplicates, Column cleanup, DataFrame slicing, selecting, extracting) in the following dataset https://www.kaggle.com/datasets/selinraja/irish-data

1. Import Library

145

146

147

148

149

6.7

6.3

6.5

6.2



2. Upload the dataset & Viewing the data

3.0

2.5

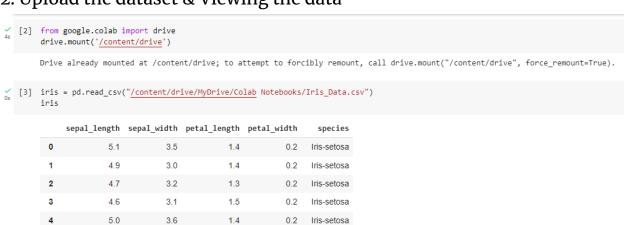
3.0

3.4

5.2

5.0

5.2



2.3 Iris-virginica

1.9 Iris-virginica

2.0 Iris-virginica

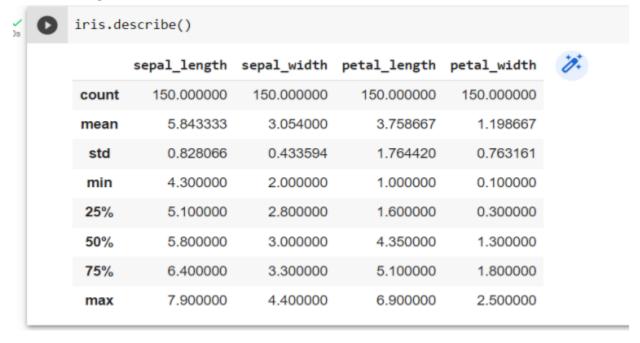
2.3 Iris-virginica

1.8 Iris-virginica

3. View the top 10 rows of the dataset.

os O i	ris.head(10)					
	sepal_lengt	th sepal_wid	th petal_len	gth petal_w	idth	species
	0 5	.1 3	3.5	1.4	0.2	Iris-setosa
	1 4	.9 3	3.0	1.4	0.2	Iris-setosa
1	2 4	.7 3	3.2	1.3	0.2	Iris-setosa
;	3 4	.6 3	3.1	1.5	0.2	Iris-setosa
4	4 5	.0 3	3.6	1.4	0.2	Iris-setosa
	5 5	.4 3	3.9	1.7	0.4	Iris-setosa
(6 4	.6 3	3.4	1.4	0.3	Iris-setosa
1	7 5	.0 3	3.4	1.5	0.2	Iris-setosa
1	8 4	.4 2	2.9	1.4	0.2	Iris-setosa
9	9 4	.9 3	3.1	1.5	0.1	Iris-setosa

4. Showing the description of the whole dataset.



5. Showing the info of the dataset.

```
iris.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
   Column Non-Null Count
                               Dtype
 Ø sepal length 150 non-null
                               float64
 1 sepal width 150 non-null float64
 2 petal_length 150 non-null float64
   petal width 150 non-null
                              float64
    species
            150 non-null
                               object
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

6. Dropping the duplicate data

0	displ	ay(iris.drop_d	duplicates())			
		sepal_length	sepal_width	petal_length	petal_width	species
	0	5.1	3.5	1.4	0.2	Iris-setosa
	1	4.9	3.0	1.4	0.2	Iris-setosa
	2	4.7	3.2	1.3	0.2	Iris-setosa
	3	4.6	3.1	1.5	0.2	Iris-setosa
	4	5.0	3.6	1.4	0.2	Iris-setosa
	145	6.7	3.0	5.2	2.3	Iris-virginica
	146	6.3	2.5	5.0	1.9	Iris-virginica
	147	6.5	3.0	5.2	2.0	Iris-virginica
	148	6.2	3.4	5.4	2.3	Iris-virginica
	149	5.9	3.0	5.1	1.8	Iris-virginica

7. Column cleanup

```
[25] for x in iris.index:
           if iris.loc[x, "sepal_length"] > 5:
             iris.loc[x, "sepal_length"] = 5
           iris.head(10)
             sepal_length sepal_width petal_length petal_width
                                                                          species
                       5.0
                                     3.5
                                                     1.4
                                                                   0.2 Iris-setosa
                                                                   0.2 Iris-setosa
          1
                       4.9
                                      3.0
                                                     1.4
                       4.7
                                     3.2
                                                     1.3
                                                                   0.2 Iris-setosa
         3
                       4.6
                                     3.1
                                                     1.5
                                                                   0.2 Iris-setosa
                                                                   0.2 Iris-setosa
                       5.0
                                     3.6
                                                     1.4
         5
                       5.0
                                      3.9
                                                     1.7
                                                                   0.4 Iris-setosa
                                                                   0.3 Iris-setosa
                       4.6
                                     3.4
                                                     1.4
         7
                       5.0
                                     3.4
                                                     1.5
                                                                   0.2 Iris-setosa
                       4.4
                                     2.9
                                                     1.4
                                                                   0.2 Iris-setosa
                       4.9
                                     3.1
                                                     1.5
                                                                   0.1 Iris-setosa
```

8. Showing the unique data of a specific column.

```
print("Species")
print(iris['species'].unique())

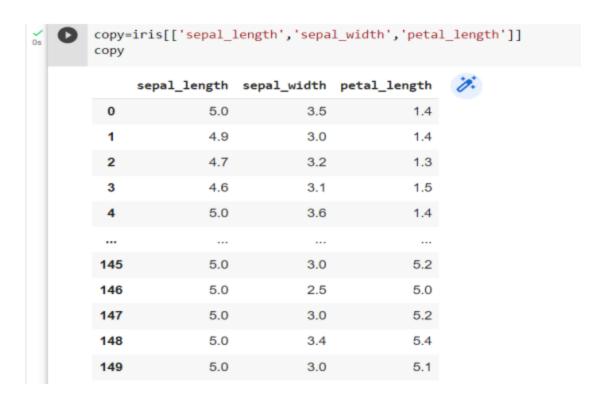
Species
['Iris-setosa' 'Iris-versicolor' 'Iris-virginica']
```

9. Showing the data frame slicing.

Os D	iris	al=iris.iloc[@	9:7]			
		sepal_length	sepal_width	petal_length	petal_width	species
	0	5.0	3.5	1.4	0.2	Iris-setosa
	1	4.9	3.0	1.4	0.2	Iris-setosa
	2	4.7	3.2	1.3	0.2	Iris-setosa
	3	4.6	3.1	1.5	0.2	Iris-setosa
	4	5.0	3.6	1.4	0.2	Iris-setosa
	5	5.0	3.9	1.7	0.4	Iris-setosa
	6	4.6	3.4	1.4	0.3	Iris-setosa

10. Showing the data frame slicing.

_	iris2=iris.loc[:,'sepal_length':'petal_width'] iris2					
		sepal_length	sepal_width	petal_length	petal_width	
	0	5.0	3.5	1.4	0.2	
	1	4.9	3.0	1.4	0.2	
	2	4.7	3.2	1.3	0.2	
	3	4.6	3.1	1.5	0.2	
	4	5.0	3.6	1.4	0.2	
	145	5.0	3.0	5.2	2.3	
	146	5.0	2.5	5.0	1.9	
	147	5.0	3.0	5.2	2.0	
	148	5.0	3.4	5.4	2.3	
	149	5.0	3.0	5.1	1.8	



11. Showing the data frame extracting.

