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PRN NO:-202201030042
RoLL NO:-675
BATCH:-F4

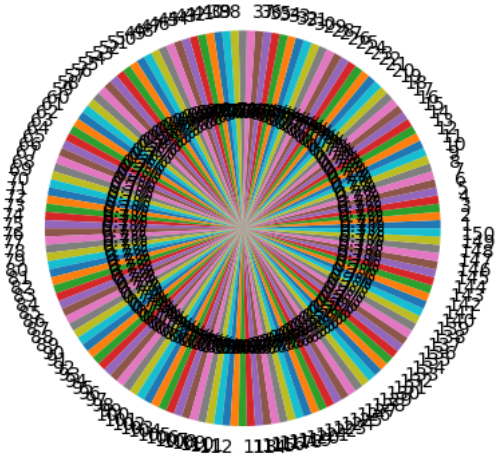
```
import pandas as pd
data = pd.read_csv('//content/sample_data/Iris.csv')
modified_SepalWidthCm = data['SepalWidthCm'].copy()
modified_SepalWidthCm[modified_SepalWidthCm > 3.0] = 3.0
print('1)replace items that satisfy a condition without affecting the original array')
print(data['SepalWidthCm'])
print(modified_SepalWidthCm)
print("2)Getting information about the dataset")
print(data)
numpy_array = data[['SepalWidthCm', 'SepalLengthCm']].values
numpy_array[:, [0, 1]] = numpy_array[:, [1, 0]]
print("3)Modified 2D NumPy array:")
print(numpy_array)
import matplotlib.pyplot as plt

for column in data.columns:
    plt.figure()
    plt.pie(data[column].value_counts(), labels=data[column].unique(), autopct='%2.1f%%')
    plt.title(f'Pie Chart of {column}')
    plt.show()
```

```
1)replace items that satisfy a condition without affecting the original array
0      3.5
1      3.0
2      3.2
3      3.1
4      3.6
      ...
145    3.0
146    2.5
147    3.0
148    3.4
149    3.0
Name: SepalWidthCm, Length: 150, dtype: float64
0      3.0
1      3.0
2      3.0
3      3.0
4      3.0
      ...
145    3.0
146    2.5
147    3.0
148    3.0
149    3.0
Name: SepalWidthCm, Length: 150, dtype: float64
2)Getting information about the dataset
      Id  SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm  \
0      1            5.1           3.5            1.4           0.2
1      2            4.9           3.0            1.4           0.2
2      3            4.7           3.2            1.3           0.2
3      4            4.6           3.1            1.5           0.2
4      5            5.0           3.6            1.4           0.2
..   ...            ...           ...            ...           ...
145  146            6.7           3.0            5.2           2.3
146  147            6.3           2.5            5.0           1.9
147  148            6.5           3.0            5.2           2.0
148  149            6.2           3.4            5.4           2.3
149  150            5.9           3.0            5.1           1.8

            Species
0       Iris-setosa
1       Iris-setosa
2       Iris-setosa
3       Iris-setosa
4       Iris-setosa
..              ...
145  Iris-virginica
146  Iris-virginica
147  Iris-virginica
148  Iris-virginica
149  Iris-virginica

[150 rows x 6 columns]
3)Modified 2D NumPy array:
[[5.1 3.5]
 [4.9 3. ]
 [4.7 3.2]
 [4.6 3.1]
 [5.  3.6]
 [5.4 3.9]
 [4.6 3.4]
 [5.  3.4]
 [4.4 2.9]
 [4.9 3.1]
 [5.4 3.7]
 [4.8 3.4]
 [4.8 3. ]
 [4.3 3. ]
 [5.8 4. ]
 [5.7 4.4]
 [5.4 3.9]
 [5.1 3.5]
 [5.7 3.8]
 [5.1 3.8]
 [5.4 3.4]
 [5.1 3.7]
 [4.6 3.6]
 [5.1 3.3]
 [4.8 3.4]
 [5.  3. ]
 [5.  3.4]
 [5.2 3.5]
 [5.2 3.4]
 [4.7 3.2]
 [4.8 3.1]
 [5.4 3.4]
 [5.2 4.1]
 [5.5 4.2]
 [4.9 3.1]
 [5.  3.2]
```

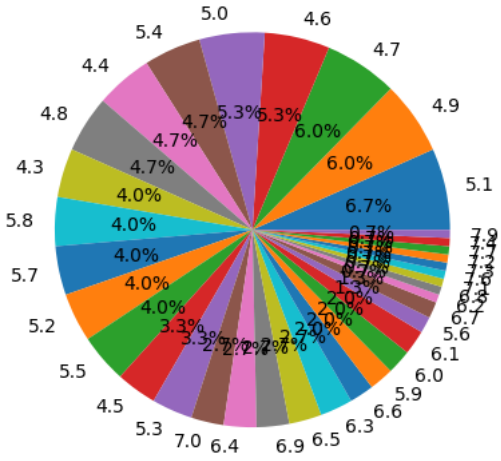
```
[5.5 3.5]
[4.9 3.1]
[4.4 3. ]
[5.1 3.4]
[5.  3.5]
[4.5 2.3]
[4.4 3.2]
[5.  3.5]
[5.1 3.8]
[4.8 3. ]
[5.1 3.8]
[4.6 3.2]
[5.3 3.7]
[5.  3.3]
[7.  3.2]
[6.4 3.2]
[6.9 3.1]
[5.5 2.3]
[6.5 2.8]
[5.7 2.8]
[6.3 3.3]
[4.9 2.4]
[6.6 2.9]
[5.2 2.7]
[5.  2. ]
[5.9 3. ]
[6.  2.2]
[6.1 2.9]
[5.6 2.9]
[6.7 3.1]
[5.6 3. ]
[5.8 2.7]
[6.2 2.2]
[5.6 2.5]
[5.9 3.2]
[6.1 2.8]
[6.3 2.5]
[6.1 2.8]
[6.4 2.9]
[6.6 3. ]
[6.8 2.8]
[6.7 3. ]
[6.  2.9]
[5.7 2.6]
[5.5 2.4]
[5.5 2.4]
[5.8 2.7]
[6.  2.7]
[5.4 3. ]
[6.  3.4]
[6.7 3.1]
[6.3 2.3]
[5.6 3. ]
[5.5 2.5]
[5.5 2.6]
[6.1 3. ]
[5.8 2.6]
[5.  2.3]
[5.6 2.7]
[5.7 3. ]
[5.7 2.9]
[6.2 2.9]
[5.1 2.5]
[5.7 2.8]
[6.3 3.3]
[5.8 2.7]
[7.1 3. ]
[6.3 2.9]
[6.5 3. ]
[7.6 3. ]
[4.9 2.5]
[7.3 2.9]
[6.7 2.5]
[7.2 3.6]
[6.5 3.2]
[6.4 2.7]
[6.8 3. ]
[5.7 2.5]
[5.8 2.8]
[6.4 3.2]
[6.5 3. ]
[7.7 3.8]
[7.7 2.6]
[6.  2.2]
[6.9 3.2]
[5.6 2.8]
[7.7 2.8]
[6.3 2.7]
[6.7 3.3]
[7.2 3.2]
```

```
[6.2 2.8]
[6.1 3. ]
[6.4 2.8]
[7.2 3. ]
[7.4 2.8]
[7.9 3.8]
[6.4 2.8]
[6.3 2.8]
[6.1 2.6]
[7.7 3. ]
[6.3 3.4]
[6.4 3.1]
[6.  3. ]
[6.9 3.1]
[6.7 3.1]
[6.9 3.1]
[5.8 2.7]
[6.8 3.2]
[6.7 3.3]
[6.7 3. ]
[6.3 2.5]
[6.5 3. ]
[6.2 3.4]
[5.9 3. ]]
```

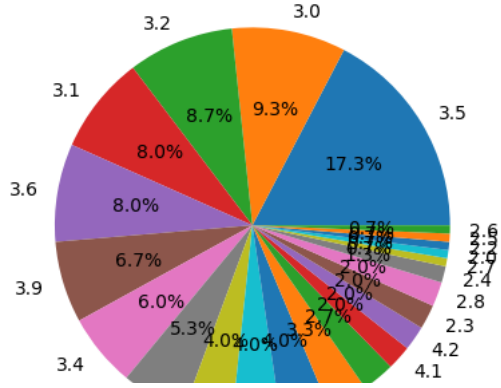
Pie Chart of Id

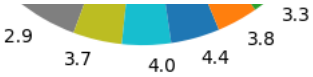


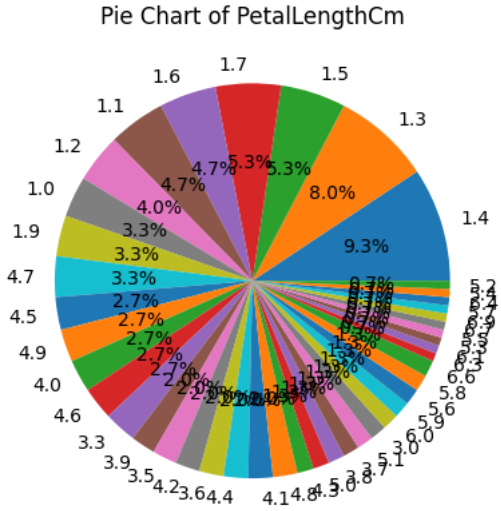
Pie Chart of SepalLengthCm

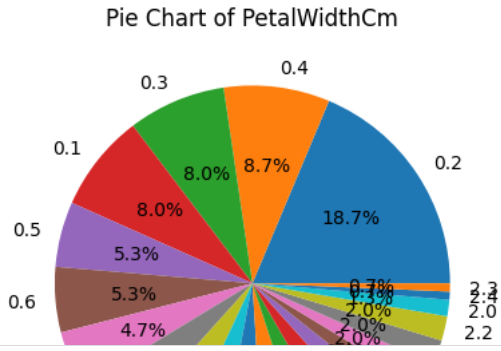


Pie Chart of SepalWidthCm









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