

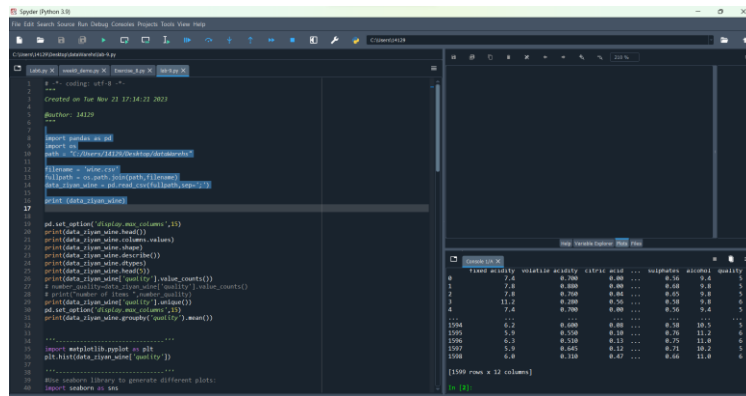
## Summary:

When using the seaborn library to generate a density and quality histogram, 70% of the data were assigned to 5, 6, 7.

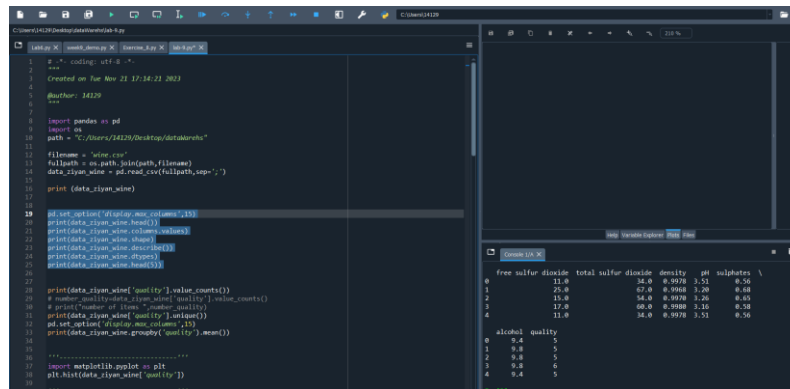
When selecting three columns—fixed acidity, chlorides, and pH—the cluster dots show the distribution and where they tend to centralize. The pair plot displays the relationships and distributions of different variables within a dataset.

## Screenshot:

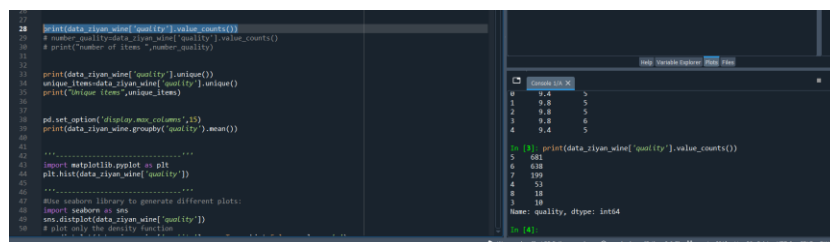
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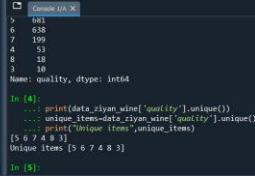


4.

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31
32
33 print(data_riyan_wine['quality'].unique())
34 unique_items=data_riyan_wine['quality'].unique()
35 print("Unique items:",unique_items)
36
37
38 pd.set_option('display.max_columns',15)
39 print(data_riyan_wine.groupby('quality').mean())
40
41
42 """....."""
43 import matplotlib.pyplot as plt
44 plt.hist(data_riyan_wine['quality'])
45
46 """....."""
47 #Use seaborn library to generate different plots:
48 import seaborn as sns
49 sns.distplot(data_riyan_wine['quality'])
50 # plot only the density function

```



5.

```

38 pd.set_option('display.max_columns',15)
39 sns.distplot(data_riyan_wine.groupby('quality').mean())
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42 """....."""
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49 sns.distplot(data_riyan_wine['quality'])
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```

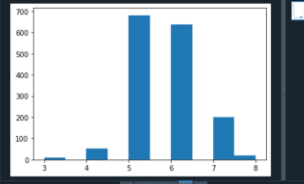


6.

```

43 import matplotlib.pyplot as plt
44 plt.hist(data_riyan_wine['quality'])
45
46 """....."""
47 #Use seaborn library to generate different plots:
48 import seaborn as sns
49 sns.distplot(data_riyan_wine['quality'], rug=True, hist=False, color = 'g')
50 # plot only the density function
51 # change the direction of the plot
52 sns.distplot(data_riyan_wine['quality'], rug=True, hist=False, vertical = True)
53 # check all correlations. Here it take longer time to execute
54 sns.pairplot(data_riyan_wine)
55 # subset these columns
56 data_riyan_wine[['fixed acidity', 'chlorides', 'ph']]
57 # data_riyan_wine[['chlorides', 'ph']]
58 # check the correlations
59 sns.pairplot(x)
60
61 # Generate heatmap
62 sns.heatmap(data_riyan_wine[['fixed acidity]])
63 sns.heatmap(x)
64 sns.heatmap(x)
65 sns.heatmap(x)
66
67 import matplotlib.pyplot as plt

```

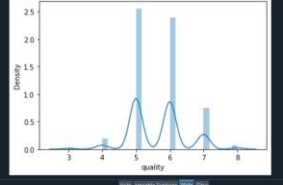


7.

```

35 print("Unique items",unique_items)
36
37
38 pd.set_option('display.max_columns',15)
39 print(data_riyan_wine.groupby('quality').mean())
40
41
42 """....."""
43 import matplotlib.pyplot as plt
44 plt.hist(data_riyan_wine['quality'])
45
46 """....."""
47 #Use seaborn library to generate different plots:
48 import seaborn as sns
49 sns.distplot(data_riyan_wine['quality'], rug=True, hist=False, color = 'g')
50 # plot only the density function
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62 sns.heatmap(data_riyan_wine[['fixed acidity]])
63 sns.heatmap(x)
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65 sns.heatmap(x)
66
67 import matplotlib.pyplot as plt
68 plt.figure(figsize=(10,8))
69 sns.heatmap(x)

```

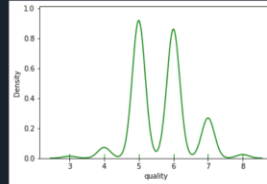


8.

```

35 print("Unique items",unique_items)
36
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38 pd.set_option('display.max_columns',15)
39 print(data_riyan_wine.groupby('quality').mean())
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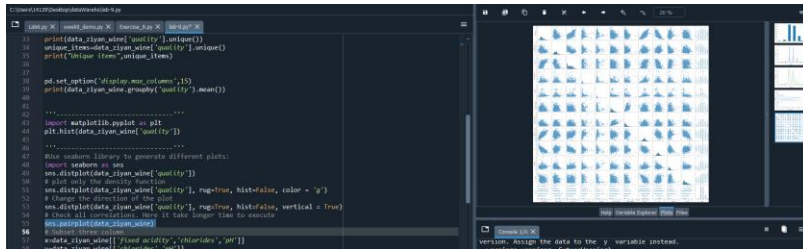
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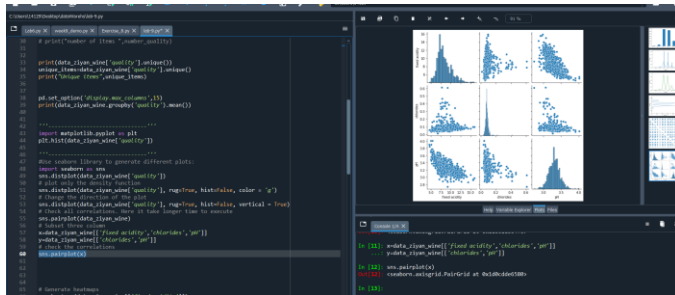
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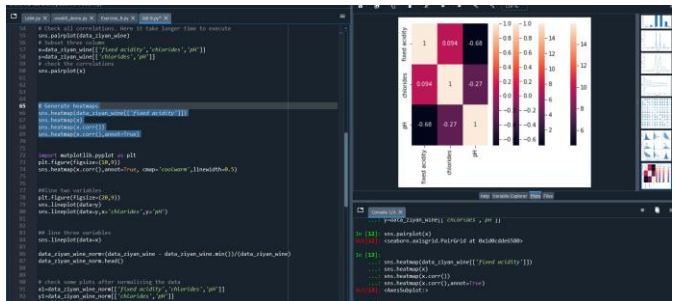
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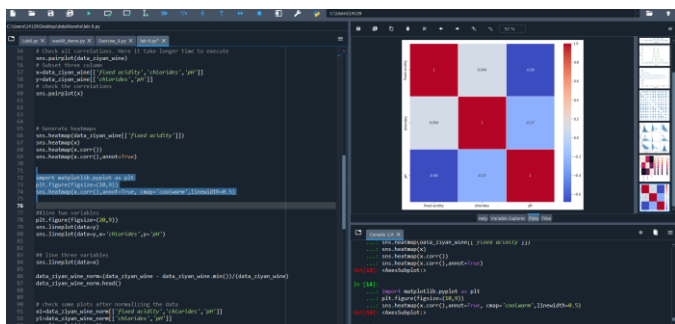
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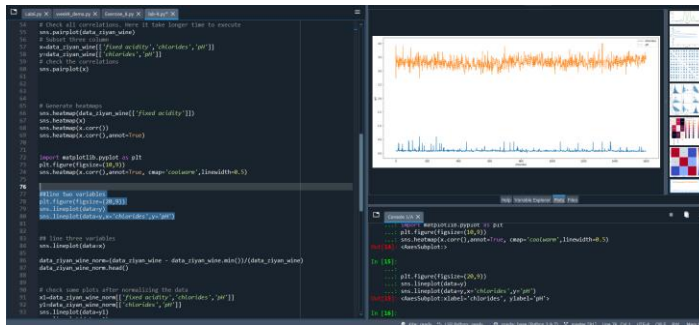
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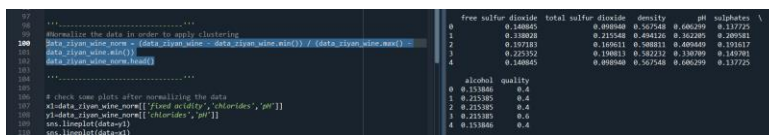
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