

▼ Data Visualization

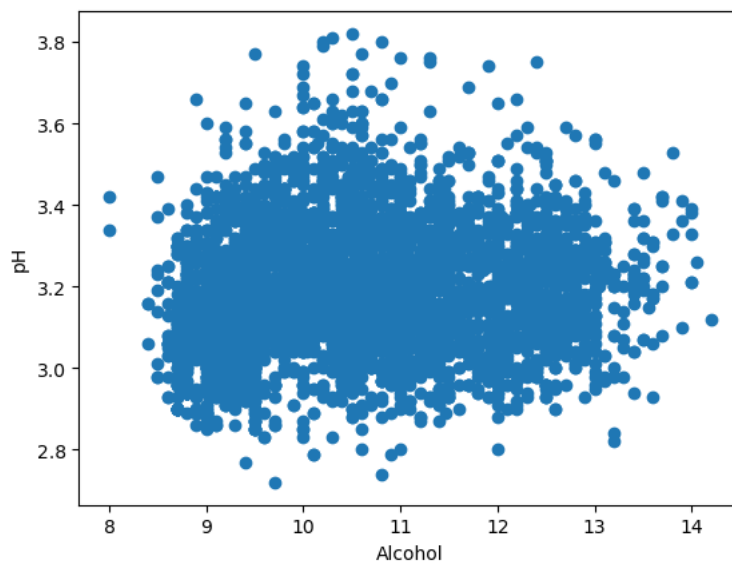
Level 1 Perform Exploratory Data Analysis for a given data set by creating Scatter Plot, Pair Plot, Count Plot using Matplotlib and Seaborn

Level 2 Create Heat Maps, WordCloud

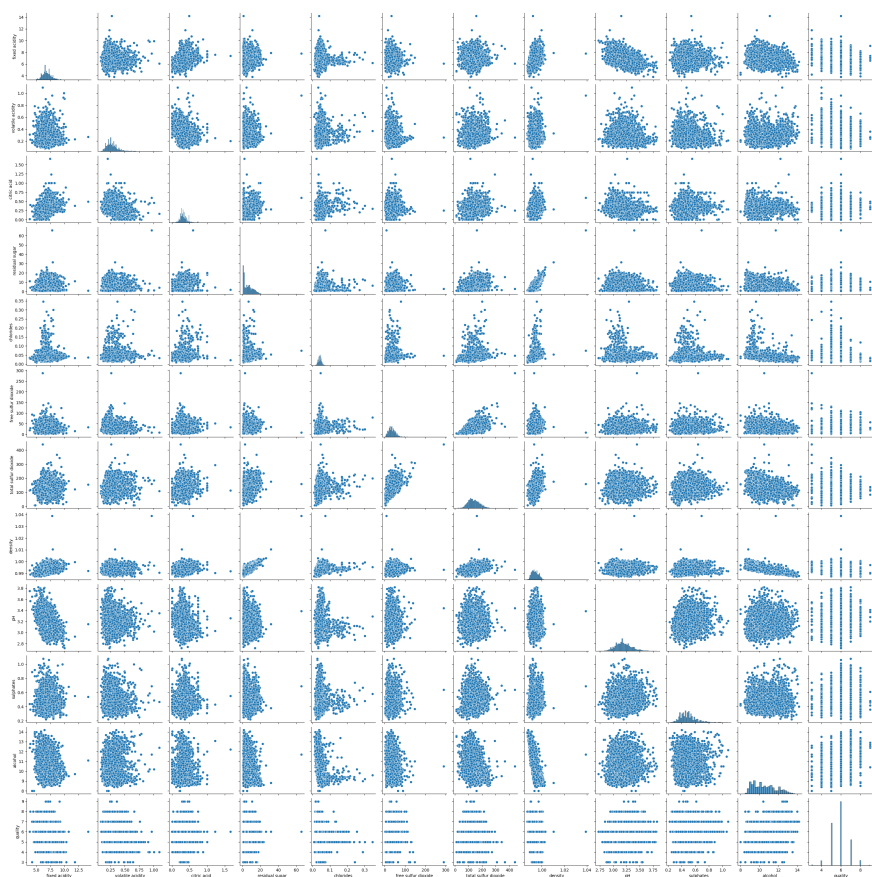
```
#Import data
import pandas as pd
url = "https://archive.ics.uci.edu/ml/machine-learning-databases/
wine-quality/winequality-white.csv"
data = pd.read_csv(url, sep=';')
data
```

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
0	7.0	0.27	0.36	20.7	0.045	45.0	170.0	1.00100	3.00	0.45	8.8	6
1	6.3	0.30	0.34	1.6	0.049	14.0	132.0	0.99400	3.30	0.49	9.5	6
2	8.1	0.28	0.40	6.9	0.050	30.0	97.0	0.99510	3.26	0.44	10.1	6
3	7.2	0.23	0.32	8.5	0.058	47.0	186.0	0.99560	3.19	0.40	9.9	6
4	7.2	0.23	0.32	8.5	0.058	47.0	186.0	0.99560	3.19	0.40	9.9	6
...
4893	6.2	0.21	0.29	1.6	0.039	24.0	92.0	0.99114	3.27	0.50	11.2	6
4894	6.6	0.32	0.36	8.0	0.047	57.0	168.0	0.99490	3.15	0.46	9.6	5
4895	6.5	0.24	0.19	1.2	0.041	30.0	111.0	0.99254	2.99	0.46	9.4	6
4896	5.5	0.29	0.30	1.1	0.022	20.0	110.0	0.98869	3.34	0.38	12.8	7
4897	6.0	0.21	0.38	0.8	0.020	22.0	98.0	0.98941	3.26	0.32	11.8	6

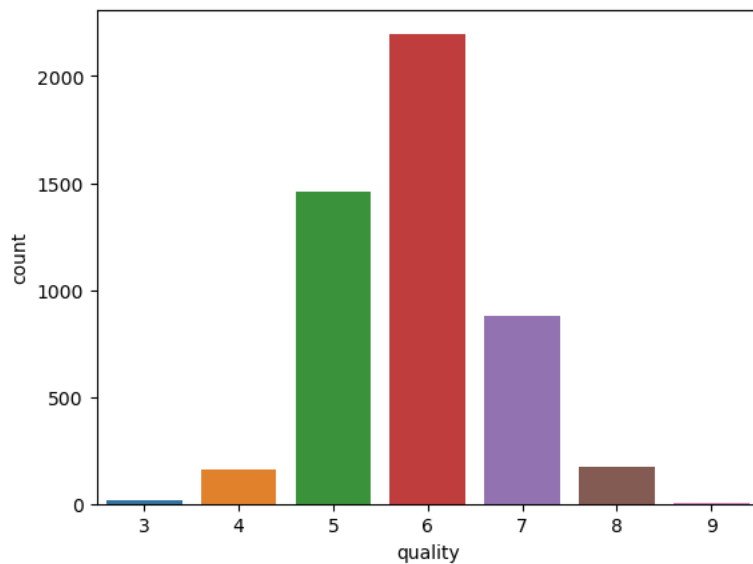
```
import matplotlib.pyplot as plt
# Create a scatter plot of alcohol content vs. pH
plt.scatter(data['alcohol'], data['pH'])
plt.xlabel('Alcohol')
plt.ylabel('pH')
plt.show()
```



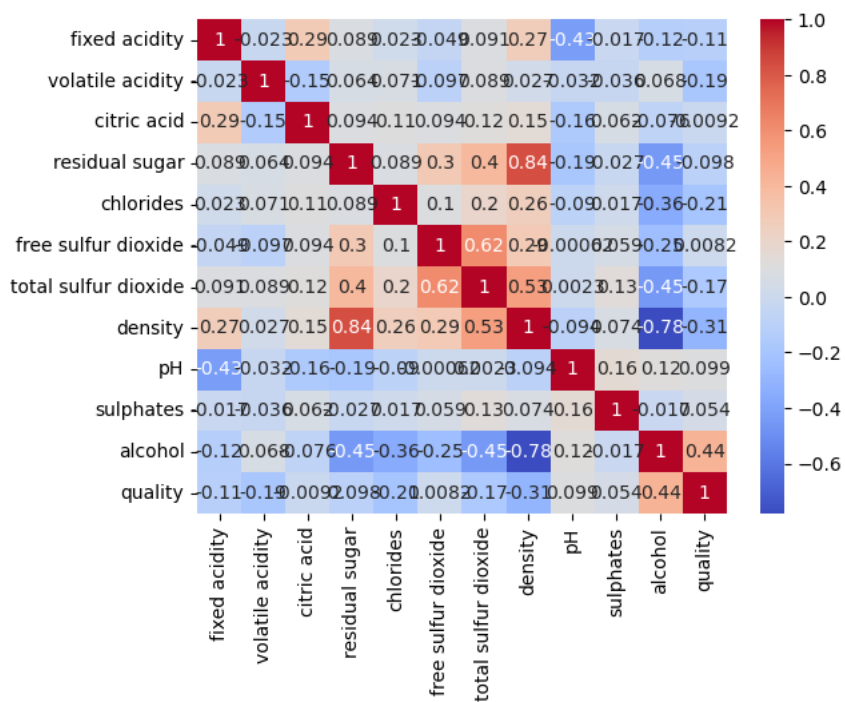
```
import seaborn as sns
# Create a pair plot of all columns in the dataset
sns.pairplot(data)
plt.show()
```



```
# Create a count plot of the "quality" column
sns.countplot(x='quality', data=data)
plt.show()
```



```
import seaborn as sns
# Create a heatmap of the correlation between all columns in the dataset
sns.heatmap(data.corr(), annot=True, cmap='coolwarm')
plt.show()
```



```
from wordcloud import WordCloud
# Get column names of the dataset
column_names = data.columns.tolist()
# Create a word cloud plot of the column names
wordcloud = WordCloud(background_color='white').generate(' '.join(column_names))
plt.imshow(wordcloud, interpolation='bilinear')
plt.axis('off')
plt.show()
```