In [1]:
```
import numpy as np
import matplotlib.pyplot as plt
from scipy.stats import norm,shapiro
from statsmodels.graphics.gofplots import qqplot
import pandas as pd
```

In [2]:
```
df=pd.read_csv("C:\\Users\MADHUSNATA KAR\Documents\ML Stuff\winequality-red
df
```

Out[2]:

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphate
0	7.4	0.700	0.00	1.9	0.076	11.0	34.0	0.99780	3.51	0.5
1	7.8	0.880	0.00	2.6	0.098	25.0	67.0	0.99680	3.20	0.6
2	7.8	0.760	0.04	2.3	0.092	15.0	54.0	0.99700	3.26	0.6
3	11.2	0.280	0.56	1.9	0.075	17.0	60.0	0.99800	3.16	0.5
4	7.4	0.700	0.00	1.9	0.076	11.0	34.0	0.99780	3.51	0.5
...	...	...	...	...	...	...	...	...	...	
1594	6.2	0.600	0.08	2.0	0.090	32.0	44.0	0.99490	3.45	0.5
1595	5.9	0.550	0.10	2.2	0.062	39.0	51.0	0.99512	3.52	0.7
1596	6.3	0.510	0.13	2.3	0.076	29.0	40.0	0.99574	3.42	0.7
1597	5.9	0.645	0.12	2.0	0.075	32.0	44.0	0.99547	3.57	0.7

In [3]:
```
df.columns=['FixedAcidity','VolatileAcidity','CitricAcid','ResidualSugar','
```

In [4]:
```
df
```

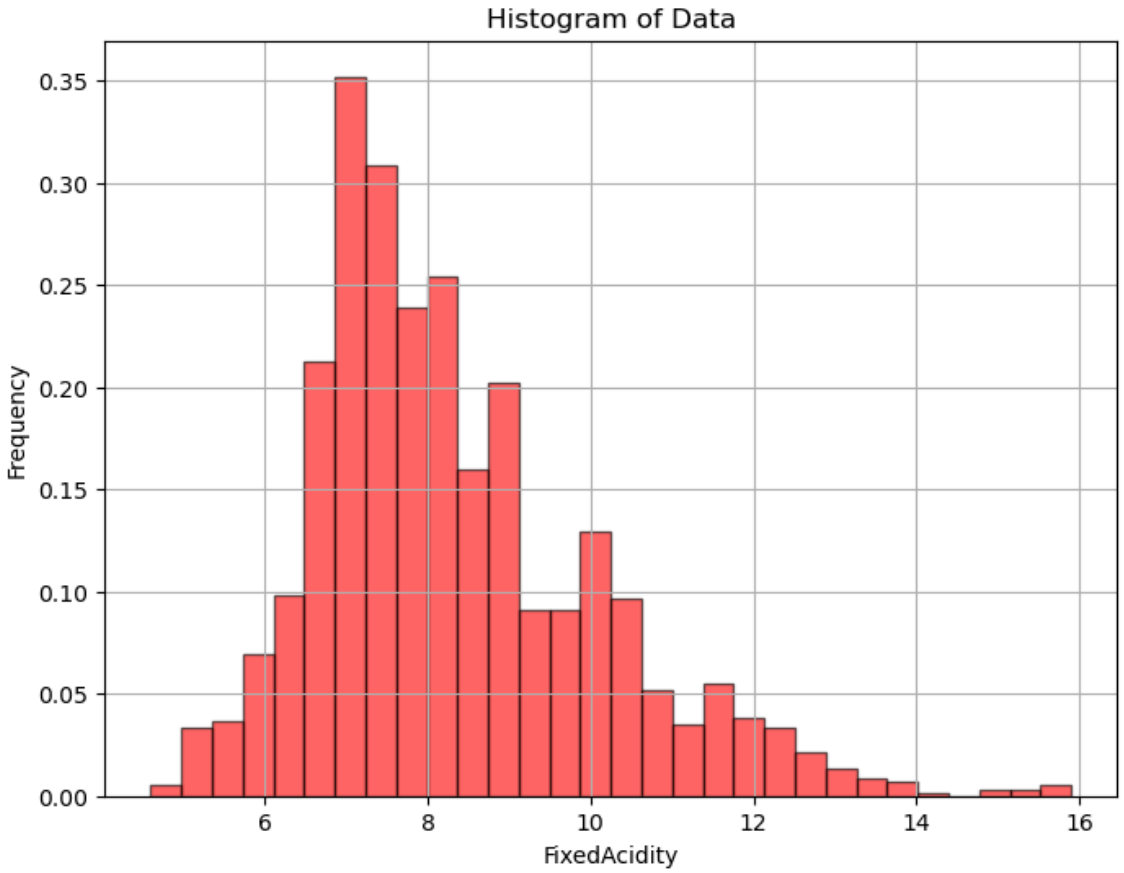
Out[4]:

	FixedAcidity	VolatileAcidity	CitricAcid	ResidualSugar	Chlorides	FreeSulfurdioxide	Tc
0	7.4	0.700	0.00	1.9	0.076	11.0	
1	7.8	0.880	0.00	2.6	0.098	25.0	
2	7.8	0.760	0.04	2.3	0.092	15.0	
3	11.2	0.280	0.56	1.9	0.075	17.0	
4	7.4	0.700	0.00	1.9	0.076	11.0	
...	...	...	...	...	...	...	
1594	6.2	0.600	0.08	2.0	0.090	32.0	
1595	5.9	0.550	0.10	2.2	0.062	39.0	
1596	6.3	0.510	0.13	2.3	0.076	29.0	
1597	5.9	0.645	0.12	2.0	0.075	32.0	
1598	6.0	0.310	0.47	3.6	0.067	18.0	

1599 rows × 12 columns

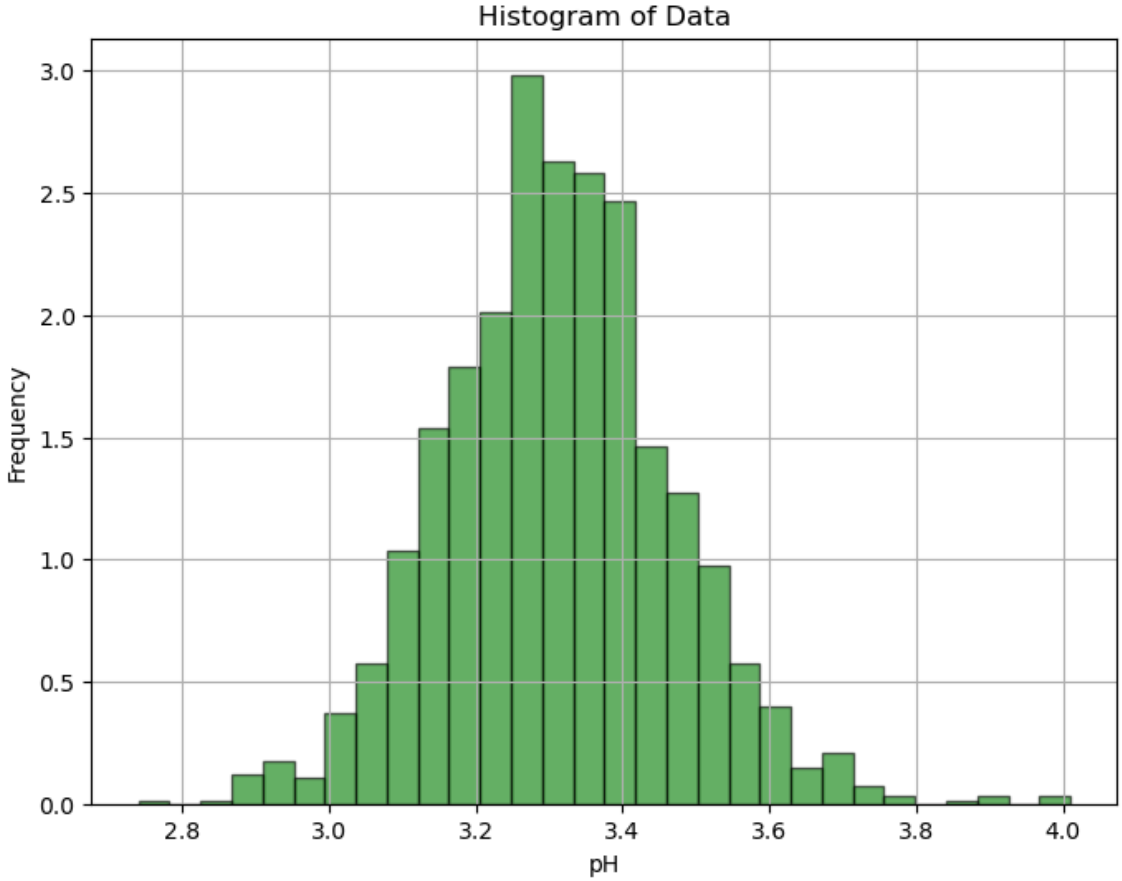
In [25]:
```
data=df['FixedAcidity']
```

In [41]:
```
# Histogram
plt.figure(figsize=(8, 6))
plt.hist(data, bins=30, density=True, alpha=0.6, color='r',edgecolor='black
plt.title('Histogram of Data')
plt.xlabel('FixedAcidity')
plt.ylabel('Frequency')
plt.grid(True)
plt.show()
```



In [33]:
```
data1=df['pH']
```

In [36]:
```
# Histogram
plt.figure(figsize=(8, 6))
plt.hist(data1, bins=30, density=True, alpha=0.6, color='g',edgecolor='blac
plt.title('Histogram of Data')
plt.xlabel('pH')
plt.ylabel('Frequency')
plt.grid(True)
plt.show()
```



In [ ]:
```
data2=df['Alcohol']
```

In [38]:
```
# Histogram
plt.figure(figsize=(8, 6))
plt.hist(data2, bins=30, density=True, alpha=0.6, color='b',edgecolor='blac
plt.title('Histogram of Data')
plt.xlabel('Alcohol')
plt.ylabel('Frequency')
plt.grid(True)
plt.show()
```