

sgd8erhgc

April 15, 2025

```
[1]: !pip install wordcloud matplotlib pandas numpy
```

Collecting wordcloud

Downloading wordcloud-1.9.4-cp312-cp312-win\_amd64.whl.metadata (3.5 kB)

Requirement already satisfied: matplotlib in

c:\users\sahad\appdata\local\programs\python\python312\lib\site-packages  
(3.10.0)

Requirement already satisfied: pandas in

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Requirement already satisfied: pillow in

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wordcloud) (11.1.0)

Requirement already satisfied: contourpy>=1.0.1 in

c:\users\sahad\appdata\local\programs\python\python312\lib\site-packages (from  
matplotlib) (1.3.1)

Requirement already satisfied: cyclor>=0.10 in

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matplotlib) (0.12.1)

Requirement already satisfied: fonttools>=4.22.0 in

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matplotlib) (4.55.7)

Requirement already satisfied: kiwisolver>=1.3.1 in

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matplotlib) (1.4.8)

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Requirement already satisfied: python-dateutil>=2.7 in

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matplotlib) (2.9.0.post0)

Requirement already satisfied: pytz>=2020.1 in

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pandas) (2024.2)

Requirement already satisfied: tzdata>=2022.7 in  
c:\users\sahad\appdata\local\programs\python\python312\lib\site-packages (from  
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Requirement already satisfied: six>=1.5 in  
c:\users\sahad\appdata\local\programs\python\python312\lib\site-packages (from  
python-dateutil>=2.7->matplotlib) (1.16.0)  
Downloading wordcloud-1.9.4-cp312-cp312-win\_amd64.whl (301 kB)  
Installing collected packages: wordcloud  
Successfully installed wordcloud-1.9.4

[notice] A new release of pip is available: 24.2 -> 25.0.1

[notice] To update, run: python.exe -m pip install --upgrade pip

```
[3]: import pandas as pd
import numpy as np

# Load dataset (replace with your file)
df = pd.read_csv(r"C:\Users\sahad\Downloads\data.csv")

# Select numerical columns
numerical_cols = df.select_dtypes(include=['number']).columns
df = df[numerical_cols].dropna()
```

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[4]: print(df)
```

	price	bedrooms	bathrooms	sqft_living	sqft_lot	floors	\
0	3.130000e+05	3.0	1.50	1340	7912	1.5	
1	2.384000e+06	5.0	2.50	3650	9050	2.0	
2	3.420000e+05	3.0	2.00	1930	11947	1.0	
3	4.200000e+05	3.0	2.25	2000	8030	1.0	
4	5.500000e+05	4.0	2.50	1940	10500	1.0	
...	...	...	...	...	...	...	
4595	3.081667e+05	3.0	1.75	1510	6360	1.0	
4596	5.343333e+05	3.0	2.50	1460	7573	2.0	
4597	4.169042e+05	3.0	2.50	3010	7014	2.0	
4598	2.034000e+05	4.0	2.00	2090	6630	1.0	
4599	2.206000e+05	3.0	2.50	1490	8102	2.0	
	waterfront	view	condition	sqft_above	sqft_basement	yr_built	\
0	0	0	3	1340	0	1955	
1	0	4	5	3370	280	1921	
2	0	0	4	1930	0	1966	
3	0	0	4	1000	1000	1963	
4	0	0	4	1140	800	1976	
...	...	...	...	...	...	...	
4595	0	0	4	1510	0	1954	
4596	0	0	3	1460	0	1983	

4597	0	0	3	3010	0	2009
4598	0	0	3	1070	1020	1974
4599	0	0	4	1490	0	1990

```

    yr_renovated
0          2005
1           0
2           0
3           0
4          1992
...
4595        1979
4596        2009
4597           0
4598           0
4599           0

```

[4600 rows x 13 columns]

```

[5]: def categorize(value, col_min, col_max):
      bins = np.linspace(col_min, col_max, 5) # Divide into 5 categories
      labels = ["Very Low", "Low", "Medium", "High", "Very High"]
      return labels[np.digitize(value, bins) - 1]

      # Convert each numerical column into text
      text_data = []
      for col in numerical_cols:
          col_min, col_max = df[col].min(), df[col].max()
          df[col + "_category"] = df[col].apply(lambda x: categorize(x, col_min,
          ↪col_max))
          text_data.extend(df[col + "_category"].values)

      # Merge into a single text corpus
      text = " ".join(text_data)

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[6]: print(text)

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[7]: print(df)
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	price	bedrooms	bathrooms	sqft_living	sqft_lot	floors	\
0	3.130000e+05	3.0	1.50	1340	7912	1.5	
1	2.384000e+06	5.0	2.50	3650	9050	2.0	
2	3.420000e+05	3.0	2.00	1930	11947	1.0	
3	4.200000e+05	3.0	2.25	2000	8030	1.0	
4	5.500000e+05	4.0	2.50	1940	10500	1.0	
...	...	...	...	...	...	...	

4595	3.081667e+05	3.0	1.75	1510	6360	1.0
4596	5.343333e+05	3.0	2.50	1460	7573	2.0
4597	4.169042e+05	3.0	2.50	3010	7014	2.0
4598	2.034000e+05	4.0	2.00	2090	6630	1.0
4599	2.206000e+05	3.0	2.50	1490	8102	2.0

	waterfront	view	condition	sqft_above	...	sqft_living_category	\
0	0	0	3	1340	...	Very Low	
1	0	4	5	3370	...	Very Low	
2	0	0	4	1930	...	Very Low	
3	0	0	4	1000	...	Very Low	
4	0	0	4	1140	...	Very Low	
...	...	...	...	...	...	...	
4595	0	0	4	1510	...	Very Low	
4596	0	0	3	1460	...	Very Low	
4597	0	0	3	3010	...	Very Low	
4598	0	0	3	1070	...	Very Low	
4599	0	0	4	1490	...	Very Low	

	sqft_lot_category	floors_category	waterfront_category	view_category	\
0	Very Low	Very Low	Very Low	Very Low	
1	Very Low	Low	Very Low	Very High	
2	Very Low	Very Low	Very Low	Very Low	
3	Very Low	Very Low	Very Low	Very Low	
4	Very Low	Very Low	Very Low	Very Low	
...	...	...	...	...	
4595	Very Low	Very Low	Very Low	Very Low	
4596	Very Low	Low	Very Low	Very Low	
4597	Very Low	Low	Very Low	Very Low	
4598	Very Low	Very Low	Very Low	Very Low	
4599	Very Low	Low	Very Low	Very Low	

	condition_category	sqft_above_category	sqft_basement_category	\
0	Medium	Very Low	Very Low	
1	Very High	Low	Very Low	
2	High	Very Low	Very Low	
3	High	Very Low	Very Low	
4	High	Very Low	Very Low	
...	...	...	...	
4595	High	Very Low	Very Low	
4596	Medium	Very Low	Very Low	
4597	Medium	Low	Very Low	
4598	Medium	Very Low	Very Low	
4599	High	Very Low	Very Low	

	yr_built_category	yr_renovated_category
0	Low	High
1	Very Low	Very Low

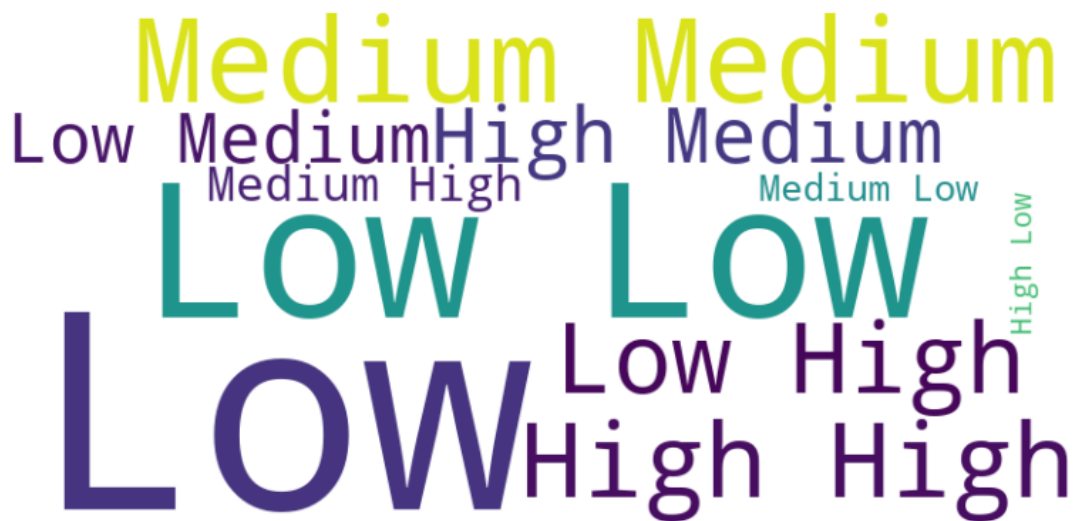
2	Medium	Very Low
3	Medium	Very Low
4	Medium	High
...	...	...
4595	Low	High
4596	Medium	High
4597	High	Very Low
4598	Medium	Very Low
4599	High	Very Low

[4600 rows x 26 columns]

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[8]: from wordcloud import WordCloud
import matplotlib.pyplot as plt

# Create a word cloud
wordcloud = WordCloud(width=800, height=400, background_color="white").
    generate(text)

# Display the word cloud
plt.figure(figsize=(10, 5))
plt.imshow(wordcloud, interpolation="bilinear")
plt.axis("off") # Hide axes
plt.show()
```



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