Assignment#2

Assignment 2-1

Type and run the python code below and explain why and what happens from line 5 until line 8 (2 pts):

```
numbers = [19, 3, 15, 7, 11] Untitled-1
1  numbers = [19, 3, 15, 7, 11]
2  print('\nCreating a bar chart from numbers:')
3  print(f'Index{"Value":>8} Bar')
4  for index, value in enumerate (numbers):
5      print(f'{index:>5}{value:>8} {"*"* value}')
```

Line 5 (in enumerate(numbers) for index, value):

The index and accompanying value of each element are retrieved by iterating over the list numbers using the enumerate() method.
The loop begins iterating over numbers, where value is the number in the list at that index and index is the element's location.

Line 6 (print(f'{index:>5}{value:>8} {"*"* value}')):

f'{index:>5} sets the index's alignment to the right within a five-character field. The preceding space is vacant, while the >5 indicates correct alignment.

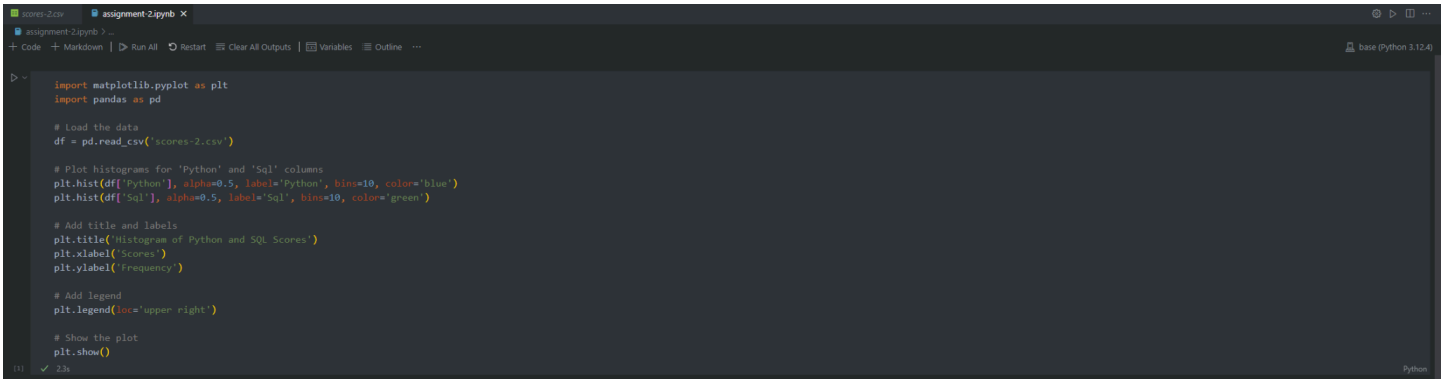
The value is formatted similarly, to be right-aligned within an 8-character field, by using f'{value:>8}.

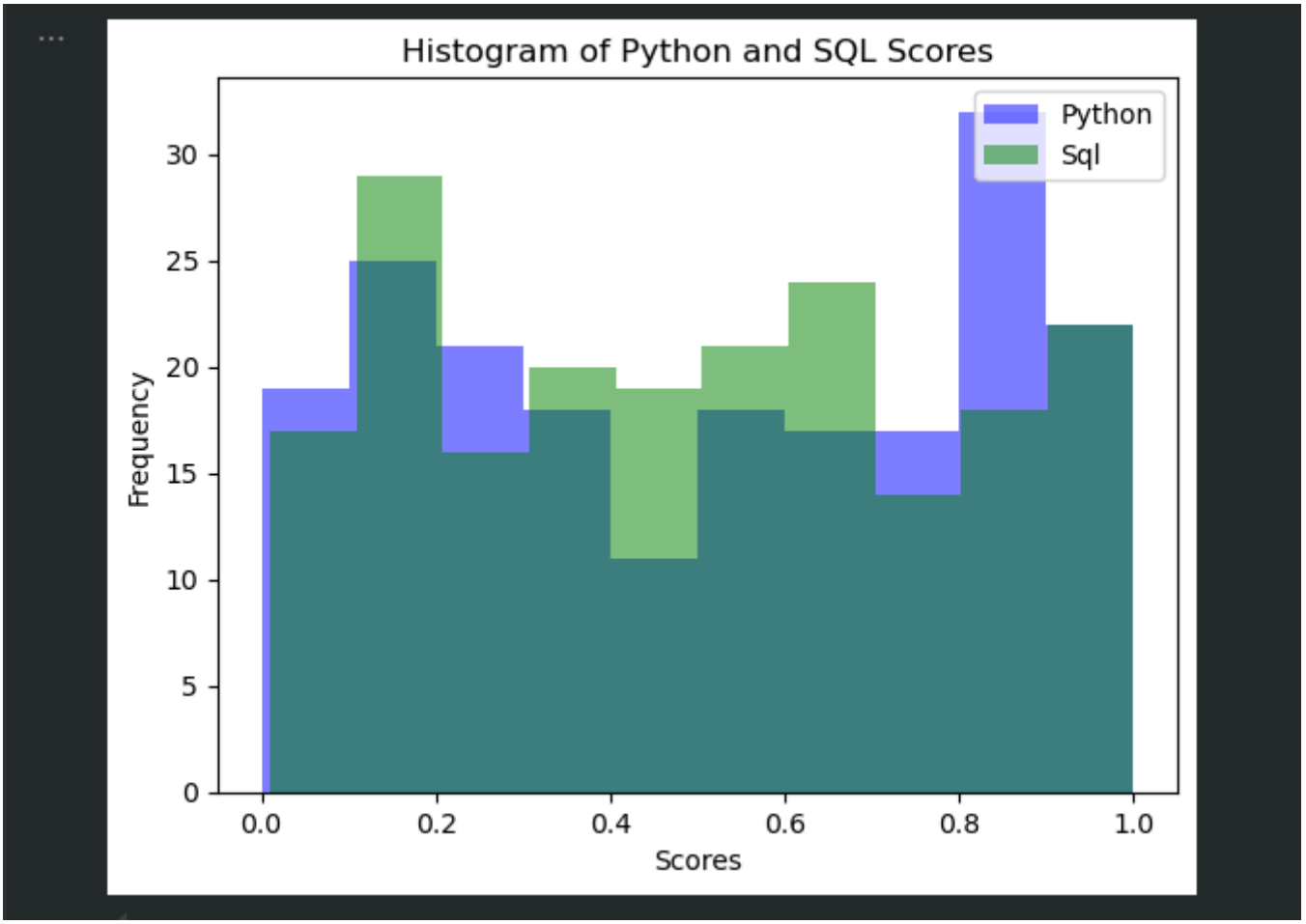
A string that repeatedly uses the '*' character value is created by using {"*" * value}. As a result, an asterisk "bar" with a length proportional to the value is visibly created.

Assignment 2-2

1. Use Matplotlib to draw histograms for 'Python' and 'Sql' together from the data, including a title, xlabel, and ylabel. (4 pts)

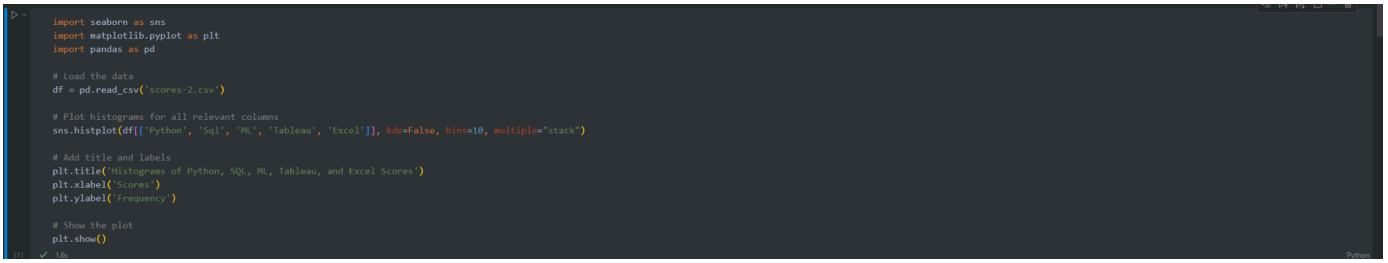
Matplotlib: This code creates a histogram for Python and Sql scores together, using different colors and an alpha value to differentiate between the two datasets.





2. Use seaborn to draw Histograms (within a single graph) for all the data ('Python', 'Sql', 'ML', 'Tableau', 'Excel') together with title, xlabel, and ylabel. (4 pts)

Seaborn: The code creates a single stacked histogram for all the score columns (Python, Sql, ML, Tableau, Excel), giving an overview of the distribution of these skills.



```
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd

# Load the data
df = pd.read_csv('scores-2.csv')

# Plot histograms for all relevant columns
sns.histplot(df[['Python', 'Sql', 'ML', 'Tableau', 'Excel']], kde=False, bins=10, multiple="stack")

# Add title and labels
plt.title('Histograms of Python, SQL, ML, Tableau, and Excel Scores')
plt.xlabel('Scores')
plt.ylabel('Frequency')

# Show the plot
plt.show()
```