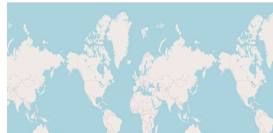


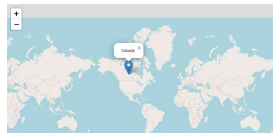

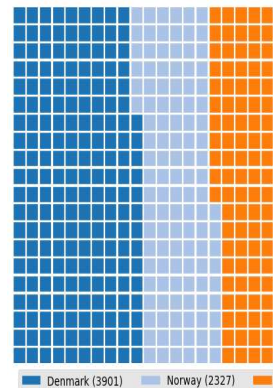




## Data Visualization with Python

### Cheat Sheet : Maps, Waffles, WordCloud and Seaborn

| Function          | Description   | Syntax  | Example  | Visual  |
|-------------------|---|---|--|---|
| <b>Folium</b>     |   |   |  |   |
| <b>Map</b>        | Create a map object with specified center coordinates and zoom level.                   | <code>folium.Map(location=[lat, lon], zoom_start=n)</code>  | <pre>world_map = folium.Map()  canada = folium.Map(location=[56.130, -106.35], zoom_start=4)</pre>   |    |
| <b>Marker</b>     | Add a marker to the map with custom icon, popup, and tiles<br><br>Tiles as Stamen Toner | <code>folium.Marker(location=[lat, lon],<br/>popup='Marker Popup',<br/>tiles='Stamen Toner').add_to(map)</code>   | <code>folium.Marker(location=[556.130,<br/>-106.35],<br/>tooltip='Marker',<br/>tiles='Stamen Toner').add_to(world_map)</code>  |    |
|                   | Tiles as Stamen Terrain   | <code>folium.Marker(location=[lat, lon],<br/>popup='Marker Popup',<br/>tiles='Stamen Terrain').add_to(map)</code>   | <code>folium.Marker(location=[556.130,<br/>-106.35],<br/>tooltip='Marker',<br/>tiles='Stamen Terrain').add_to(world_map)</code>  |   |
| <b>Circle</b>     | Add a circle to the map with specified radius, color, and fill opacity.                 | <code>folium.features.CircleMarker(location=[lat, lon],<br/>radius=n, color='red',<br/>fill_opacity=n).add_to(map)</code>   | <code>folium.features.CircleMarker(location=[<br/>56.130, -106.35],<br/>radius=1000, color='red',<br/>fill_opacity=0.5).add_to(world_map)</code>   |  |
| <b>Choropleth</b> | Create a choropleth map based on a GeoJSON file and a specified data column.            | <code>folium.Choropleth(geo_data='path/to/geojson_file',<br/>data=df, columns=['region', 'value_column'],<br/>key_on='feature.properties.id',<br/>fill_color='YlGnBu',<br/>fill_opacity=0.7, line_opacity=0.2,<br/>legend_name='Legend').add_to(map)</code> | <code>world_map.choropleth(geo_data=world_geo,<br/>data=df_can, columns=['Country',<br/>'Total'],<br/>key_on='feature.properties.name',<br/>fill_color='YlOrRd',<br/>fill_opacity=0.7, line_opacity=0.2,<br/>legend_name='Immigration to Canada')</code> |  |
| <b>PyWaffle</b>   |   |   |  |   |
| <b>Waffle</b>     | Create a waffle chart based on values and categories.                                   | <pre>plt.figure(FigureClass = Waffle, rows = 20, columns = 30, values = values)</pre> <pre>waffle_chart = waffle.Waffle(values=[value1,<br/>value2, ...],<br/>rows=n, columns=n)</pre>  | <pre>plt.figure(FigureClass = Waffle, rows = 20, columns = 30,<br/>values = df_dsn['Total'], cmap_name = 'tab20',<br/>legend = {'labels': label, 'loc': 'lower left',<br/>'bbox_x_to_anchor': (0, -0.1), 'ncol': 3})</pre>                               |  |
| <b>Legend</b>     | Add a legend to the waffle chart.   | <code>waffle_chart.legend(loc='upper left',<br/>bbox_to_anchor=(1, 1))</code>   |  |   |

| Function  | Description                                    | Syntax   | Example   | Visual |
|-----------|--|--|---|--------|
| Title     | Add a title to the waffle chart.               | waffle_chart.set_title('Waffle Chart Title')         |   |        |
| Labels    | Add labels to the waffle chart.                | waffle_chart.set_labels(['Label 1', 'Label 2', ...]) |   |        |
| WordCloud |  |  |   |        |
| WordCloud | Create a word cloud object based on text data. | wordcloud = WordCloud().generate(text_data)          | <pre>alice_wc =<br/>WordCloud(background_color='white',<br/>max_words=2000, mask=alice_mask,<br/>stopwords=stopwords)<br/>alice_wc.generate(alice_novel)<br/>plt.imshow(alice_wc,<br/>interpolation='bilinear')</pre> |        |

| Function | Description                    | Syntax | Example | Visual |
|----------|--------------------------------|--------|---------|--------|
|          | between two numeric variables. |        |         |        |

Author(s)

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Changelog

| Date       | Version | Changed by | Change Description      |
|------------|---------|------------|-------------------------|
| 2023-06-18 | 0.1     | Dr. Pooja  | Initial version created |