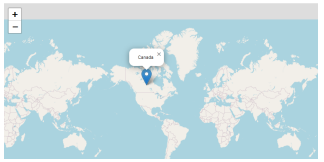
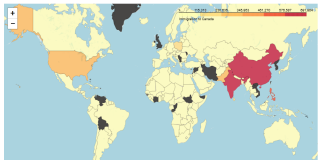
Data Visualization with Python

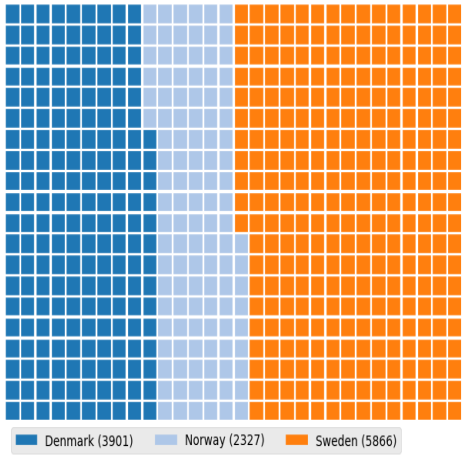
Cheat Sheet : Maps, Waffles, WordCloud and Seaborn

Function	Description	Syntax	Example	Visual
Folium				

Map	Create a map object with specified center coordinates and zoom level.	`folium.Map(location=[lat, lon], zoom_start=n)`	`world_map = folium.Map()`
			
			`canada =folium.Map(location=[56.130, -106.35], zoom_start=4)`
				

Marker	Add a marker to the map with custom icon, popup, and tiles Tiles as Stamen Toner	`folium.Marker(location=[lat , lon ], popup='Marker Popup', tiles='Stamen Toner').add_to(map)`	`folium.Marker(location=[556.130, -106.35], tooltip='Marker', tiles='Stamen Toner').add_to(world_map)`	
	Tiles as Stamen Terrain	`folium.Marker(location=[lat , lon ], popup='Marker Popup', tiles='Stamen Terrain').add_to(map)`	`folium.Marker(location=[556.130, -106.35], tooltip='Marker', tiles='Stamen Terrain').add_to(world_map)`	
Circle	Add a circle to the map with specified radius, color, and fill opacity.	`folium.features.CircleMarker(location=[lat, lon], radius=n, color='red', fill_opacity=n).add_to(map)`	`folium.features.CircleMarker(location= [56.130, -106.35], radius=1000, color='red', fill_opacity=0.5).add_to(world_map)`	
Chorpleth	Create a choropleth map based on a GeoJSON file and a specified data column.	`folium.Choropleth(geo_data='path/to/geojson_file', data=df, columns=['region', 'value_column'], key_on='feature.properties.id', fill_color='YlGnBu', fill_opacity=0.7, line_opacity=0.2, legend_name='Legend').add_to(map)`	`world_map.choropleth(geo_data=world_geo, data=df_can, columns=['Country', 'Total'], key_on='feature.properties.name', fill_color='YlOrRd', fill_opacity=0.7,line_opacity=0.2, legend_name='Immigration to Canada')`	

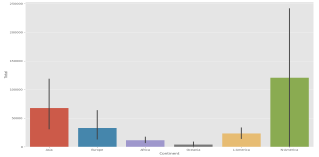
Function	Description	Syntax	Example	Visual
PyWaffle				

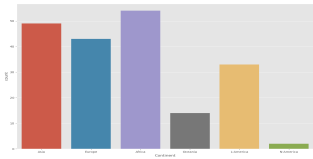
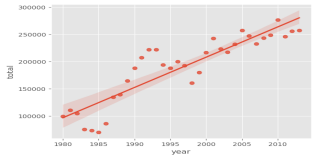
Waffle	Create a waffle chart based on values and categories.	`plt.figure(FigureClass = Waffle,rows = 20, columns = 30, values = values)`
		
		`waffle_chart = waffle.Waffle(values=[value1, value2, ...], rows=n, columns=n)`
			`plt.figure(FigureClass = Waffle,rows = 20, columns = 30, values = df_dsn['Total'], cmap_name = 'tab20', legend = {'labels': label,'loc': 'lower left', 'bbox_to_anchor':(0,-0.1),'ncol': 3})`	

Legend	Add a legend to the waffle chart.	`waffle_chart.legend(loc='upper left', bbox_to_anchor=(1, 1))`		
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				

Function	Description	Syntax	Example	Visual

WordCloud	Create a word cloud object based on text data.	`wordcloud = WordCloud().generate(text_data)`	`alice_wc = WordCloud(background_color='white', max_words=2000, mask=alice_mask, stopwords=stopwords)`
			`alice_wc.generate(alice_novel)`
			`plt.imshow(alice_wc, interpolation='bilinear')`
				

Generate	Generate the word cloud based on the text data.	`wordcloud.generate(text_data)`		
Display	Display the word cloud using matplotlib or other plotting libraries.	`plt.imshow(wordcloud, interpolation='bilinear')`		
Options	Set various options for the word cloud, such as font, colors, mask, and stopwords.	`wordcloud = WordCloud(font_path='path/to/font_file', background_color='white', colormap='Blues', mask=mask_image, stopwords=stopwords).generate(text_data)`		
Seaborn				
barplot	Create a bar plot to visualize the relationship between a categorical variable and a numeric variable.	`sns.barplot(x='x_variable', y='y_variable', data=dataframe)`	`sns.barplot(x='Continent', y='Total', data=df_can1)`	

Function	Description	Syntax	Example	Visual
countplot	Create a count plot to display the frequency of each category in a categorical variable.	`sns.countplot(x='category', data=dataframe)`	`sns.countplot(x='Continent', data=df_can)`	
regplot	Create a scatter plot with a linear regression line to visualize the relationship between two numeric variables.	`sns.regplot(x='x_variable', y='y_variable', data=dataframe)`	`sns.regplot(x='year', y='total', data=df_tot)`	

Author(s)

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Changelog

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