

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.	<code>folium.Map(location=[lat, lon], zoom_start=n)</code>	<code>world_map = folium.Map()</code> <code>canada = folium.Map(location=[56.130, -106.35], zoom_start=4)</code>	
Marker	Add a marker to the map with custom icon, popup, and tiles	<code>folium.Marker(location=[lat, lon], popup='Marker Popup', tiles='Stamen Toner').add_to(map)</code>	<code>folium.Marker(location=[556.130, -106.35], tooltip='Marker', tiles='Stamen Toner').add_to(world_map)</code>	
	Tiles as Stamen Toner			
	Tiles as Stamen Terrain	<code>folium.Marker(location=[lat, lon], popup='Marker Popup', tiles='Stamen Terrain').add_to(map)</code>	<code>folium.Marker(location=[556.130, -106.35], tooltip='Marker', tiles='Stamen Terrain').add_to(world_map)</code>	
Circle	Add a circle to the map with specified radius, color, and fill opacity.	<code>folium.features.CircleMarker(location=[lat, lon], radius=n, color='red', fill_opacity=n).add_to(map)</code>	<code>folium.features.CircleMarker(location=[56.130, -106.35], radius=1000, color='red', fill_opacity=0.5).add_to(world_map)</code>	
Choropleth	Create a choropleth map based on a GeoJSON file and a specified data column.	<code>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)</code>	<code>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')</code>	

Function Description Syntax

Example

Visual

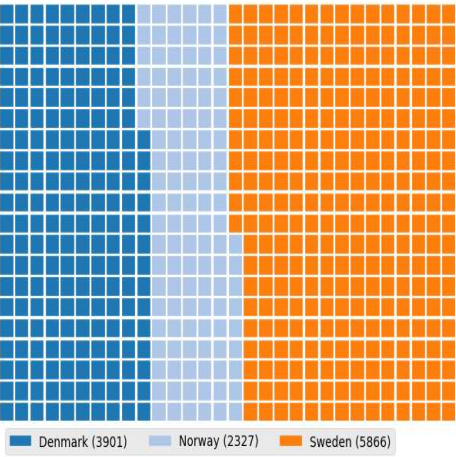
PyWaffle

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

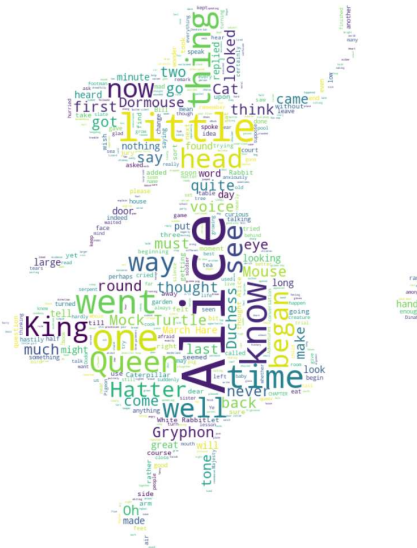
Visual

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)
```

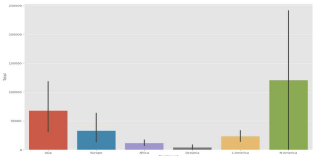
Seaborn

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

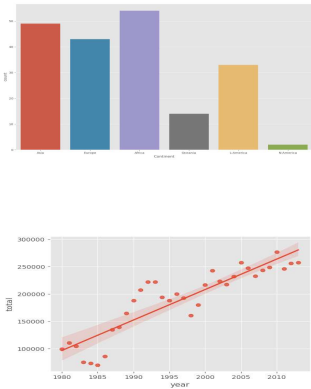
countplot	Create a count plot to display the frequency of each category in a categorical variable.	sns.countplot(x='category', data=dataframe)
regplot	Create a scatter plot with a linear regression line to visualize the relationship between two numeric variables.	sns.regplot(x='x_variable', y='y_variable', data=dataframe)

Example

```
sns.countplot(x='Continent', data=df_can)

sns.regplot(x='year', y='total', data=df_tot)
```

Visual



Author(s)

Dr. Pooja

Changelog

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