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Data Visualization with Python

Cheat Sheet: Data Preprocessing Tasks in Pandas

Syntax	Description	Example	
pd.read_csv('filename.csv')	Read data from a CSV file into a Pandas DataFrame	df_can=pd.read_csv('data.csv')	
df.dropna()	Drop rows with missing values	df_can.dropna()	
df.fillna(value)	Fill missing values with a specified value	df_can.fillna(0)	
df.drop_duplicates()	Remove duplicate rows	df_can.drop_duplicates()	
<pre>df.rename(columns={'old_name': 'new_name'})</pre>	Rename one or more columns	<pre>df_can.rename(columns={'Age': 'Years'})</pre>	
<pre>df['column_name'] or df.column_name</pre>	Select a single column	df_can.Age or df_can['Age']	
df[['col1', 'col2']]	Select multiple columns	df_can[['Name', 'Age']]	
df[df['column'] > value]	Filter rows based on a condition	df_can[df_can['Age'] > 30]	
df['column'].apply(function_name)	Apply a function to transform values in a column	df_can['Age'].apply(lambda x: x + 1)	
df['new_column'] = expression	Create a new column with values derived from existing ones	<pre>df_can['Total'] = df_can['Quantity'] * df_can['Price']</pre>	
<pre>df.groupby('column').agg({'col1': 'sum', 'col2': 'mean'})</pre>	Group rows by a column and apply aggregate functions	<pre>df_can.groupby('Category').agg({'Total': 'mean'})</pre>	
<pre>df.sort_values('column', ascending=True/False)</pre>	Sort rows based on a column	<pre>df_can.sort_values('Date', ascending=True)</pre>	
df.head(n)	Show the first n rows of the DataFrame	df_can.head(3)	
df.tail(n)	Show the last n rows of the DataFrame	df_can.tail(3)	
df.isnull()	Check for null values in the DataFrame	df_can.isnull()	
df.iloc[index]	Select rows based on integer index	df_can.iloc[3]	
df.iloc[start:end]	Select rows in a specified range	df_can.iloc[2:5]	
Selecting Rows by Label df.loc[label] Select rows based on		df_can.loc['Label']	
df.loc[start:end]	Select rows in a specified label/index range	df_can.loc['Age':'Quantity']	
df.describe()	Generates descriptive statistics for numerical columns df_can.describe()		
	pd.read_csv('filename.csv') df.dropna() df.fillna(value) df.drop_duplicates() df.rename(columns={'old_name': 'new_name'}) df['column_name'] or df.column_name df[['col1', 'col2']] df[df['column'] > value] df['new_column'] = expression df.groupby('column').agg({'col1': 'sum', 'col2': 'mean'}) df.sort_values('column', ascending=True/False) df.head(n) df.tail(n) df.iloc[index] df.loc[start:end] df.loc[start:end]	pd.read_csv('filename.csv') Read data from a CSV file into a Pandas DataFrame df.dropna() Drop rows with missing values df.fillna(value) fill missing values with a specified value df.drop_duplicates() Remove duplicate rows df.rename(columns={'old_name':}	

Cheat Sheet: Plot Libraries

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Library	Main Purpose	Key Features	Programming Language	Level of Customization	Dashboard Capabilities	Types of Plots Possible
Matplotlib	General-purpose plotting	Comprehensive plot types and variety of customization options	Python	High	Requires additional components and customization	Line plots, scatter plots, bar charts, histograms, pie charts, box plots, heatmaps, etc.
Pandas	Fundamentally used for data manipulation but also has plotting functionality	Easy to plot directly on Panda data structures	Python	Medium	Can be combined with web frameworks for creating dashboards	Line plots, scatter plots, bar charts, histograms, pie charts, box plots, etc.
Seaborn	Statistical data visualization	Stylish, specialized statistical plot types	Python	Medium	Can be combined with other libraries to display plots on dashboards	Heatmaps, violin plots, scatter plots, bar plots, count plots, etc.
Plotly	Interactive data visualization	interactive web-based visualizations	Python, R, JavaScript	High	Dash framework is dedicated for building interactive dashboards	Line plots, scatter plots, bar charts, pie charts, 3D plots, choropleth maps, etc.
Folium	Geospatial data visualization	Interactive, customizable maps	Python	Medium	For incorporating maps into dashboards, it can be integrated with other frameworks/libraries	Choropleth maps, point maps, heatmaps, etc.
PyWaffle	Plotting Waffle charts	Waffle charts	Python	Low	Can be combined with other libraries to display waffle chart on dashboards	Waffle charts, square pie charts, donut charts, etc.

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