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Data Visualization with Python

Cheat Sheet: Plotting with Matplotlib using Pandas

Plot Type	Description	Pandas Function	Example	Visual
Line Plot	Shows trends and changes over time	<pre>DataFrame.plot.line() DataFrame.plot(kind = 'line')</pre>	<pre>df.plot(x='year', y='sales', kind='line')</pre>	6000 6000 3000 2000 3000 3000 3000 3000
Area Plot	Displays data series as filled areas, showing the relationship between them	<pre>DataFrame.plot.area() DataFrame.plot(kind = 'area')</pre>	df.plot(kind='area')	6000 6000 6000 2000 2000 0 3000 1000 1000 1000 200
Histogram	Displays bars representing the data count in each interval/bin	<pre>Series.plot.hist() Series.plot(kind = 'hist', bins = n)</pre>	<pre>s.plot(kind='hist', bins=10) df['age'].plot(kind='hist', bins=10)</pre>	13 10 10 10 10 10 10 10 10 10 10 10 10 10
Bar Chart	Displays data using rectangular bars	DataFrame.plot.bar() DataFrame.plot(kind = 'bar')	df.plot(kind='bar')	1000 - 1
Pie Chart	Displays data as a circular plot divided into slices, representing proportions or percentages of a whole	Series.plot.pie() Series.plot(kind = 'pie') DataFrame.plot.pie(y, labels) DataFrame.plot(kind = 'pie')	<pre>s.plot(kind='pie',autopct='%1.1f%%') df.plot(x='Category',y='Percentage',kind='pie')</pre>	1981 21982 2 1983
Box Plot	Displays the distribution of a dataset along with key statistical measures	<pre>DataFrame.plot.box() DataFrame.plot(kind = 'box')</pre>	<pre>df_can.plot(kind='box')</pre>	6000 - 0 5000 - 0 4000 - 0 3000 - 1 2000 - 1 Hald
Scatter Plot	Uses Cartesian coordinates to display values for two variables	DataFrame.plot.scatter() DataFrame.plot(x, y, kind = 'scatter')	<pre>df.plot(x='Height', y='Weight', kind='scatter')</pre>	Scatter Plot with Positiv 175 150 125 > 100 075 050 025 00 02 04 0

Cheat Sheet: Plotting directly with Matplotlib

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Plot Type	Description	Matplotlib Function	Example	Visual
Line Plot	Shows trends and changes over time	plt.plot()	<pre>plt.plot(x, y, color='red', linewidth=2)</pre>	Time Plot To a second
Area Plot	Display data series as filled areas	plt.fill_between()	<pre>plt.fill_between(x, y1, y2, color='blue', alpha=0.5)</pre>	5000
Histogram	Displays bars representing the data count in each interval/bin	plt.hist()	<pre>plt.hist(data, bins=10, color='orange', edgecolor='black')</pre>	Age Distribution in Titanic Date
Bar Chart	Displays data using rectangular bars	plt.bar()	plt.bar(x, height, color='green', width=0.5)	Sample Bar Plot 20 20 30 30 4 6 Category
Pie Chart	Displays data as a circular plot divided into slices, representing proportions or percentages of a whole	plt.pie()	<pre>plt.pie(sizes, labels=labels, colors=colors, explode=explode)</pre>	1981 £1982 £
Box Plot	Displays the distribution of a dataset along with key statistical measures	plt.boxplot()	plt.boxplot(data, notch=True)	Box Plot 4 4 2
Scatter Plot	Uses Cartesian coordinates to display values for two variables	plt.scatter()	<pre>plt.scatter(x, y, color='purple', marker='o', s=50)</pre>	Scatter Flot without Outlier
Subplotting	Creating multiple plots on one figure	plt.subplots()	<pre>fig, axes = plt.subplots(nrows=2, ncols=2)</pre>	Scatter plots on the plots on t
Customization	Customizing plot: adding labels, title, legend, grid	Various customization	<pre>plt.title('Title') plt.xlabel('X Label') plt.ylabel('Y Label') plt.legend() plt.grid(True)</pre>	The second secon

Author(s)

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