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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 - 3000 - 4000 - 3000 - 2000 - 1000 1005
Area Plot	Displays data series as filled areas, showing the relationship between them	<pre>DataFrame.plot.area() DataFrame.plot(kind = 'area')</pre>	<pre>df.plot(kind='area')</pre>	6000 - 5000 - 4000 - 2000 - 2000 - 1000 - 0 1000 1005
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>	12 - 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')	6000 - 5000 - 6000 - 3000 - 2000 - 1000 - 1000 -
Pie Chart	Displays data as a circular plot divided into slices, representing proportions or percentages of a whole	<pre>Series.plot.pie() Series.plot(kind = 'pie') DataFrame.plot.pie(y, labels) DataFrame.plot(kind = 'pie')</pre>	<pre>s.plot(kind='pie',autopct='%1.1f%%') df.plot(x='Category',y='Percentage',kind='pie')</pre>	1992 E
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 - 5000 - 4000 - 3000 - 2000 -
Scatter Plot	Uses Cartesian coordinates to display values for two variables	<pre>DataFrame.plot.scatter() DataFrame.plot(x, y, kind = 'scatter')</pre>	<pre>df.plot(x='Height', y='Weight', kind='scatter')</pre>	1.75 1.50 1.25 ≥ 1.00 0.75 0.50 0.25

## **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>	Line Plo  7  6  9  4  3  10  15  20  25  30  30  30  30  30  30  30  30  30  3
Area Plot	Display data series as filled areas	plt.fill_between()	<pre>plt.fill_between(x, y1, y2, color='blue', alpha=0.5)</pre>	0 1000 1065 1000 1055 0000 1000 1065 1000 1055
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
Bar Chart	Displays data using rectangular bars	plt.bar()	<pre>plt.bar(x, height, color='green', width=0.5)</pre>	30 Sample Ba 25 23 30 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
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>	21962 2 1983
Box Plot	Displays the distribution of a dataset along with key statistical measures	plt.boxplot()	plt.boxplot(data, notch=True)	6 Box Pil Box
Scatter Plot	Uses Cartesian coordinates to display values for two variables	plt.scatter()	plt.scatter(x, y, color='purple', marker='o', s=50)	Scatter Plot with
Subplotting	Creating multiple plots on one figure	plt.subplots()	<pre>fig, axes = plt.subplots(nrows=2, ncols=2)</pre>	Some plant on investigate the second of the
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>	

## Author(s)

Dr. Pooja

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