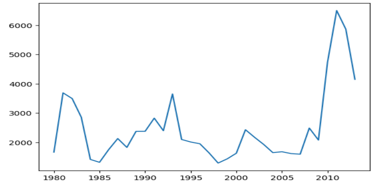
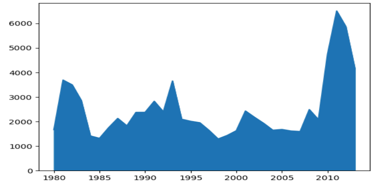
Skills Network

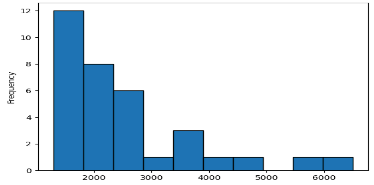
Data Visualization with Python

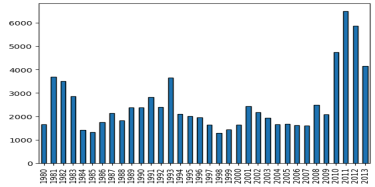
Cheat Sheet : Plotting with Matplotlib using Pandas

Plot Type	Description	Pandas Function	Example	Visual

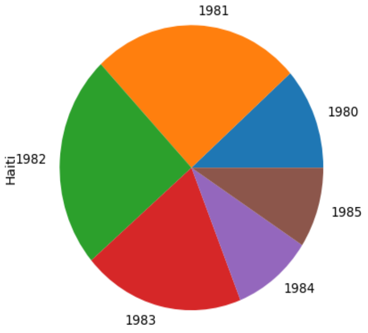
Line Plot	Shows trends and changes over time	`DataFrame.plot.line()`
		`DataFrame.plot(kind = ‘line’)`
			`df.plot(x=’year’, y=’sales’, kind=’line’)`	

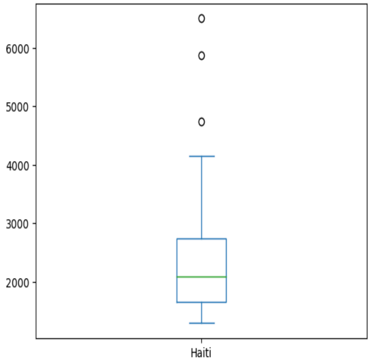
Area Plot	Displays data series as filled areas, showing the relationship between them	`DataFrame.plot.area()`
		`DataFrame.plot(kind = ‘area’)`
			`df.plot(kind='area')`	

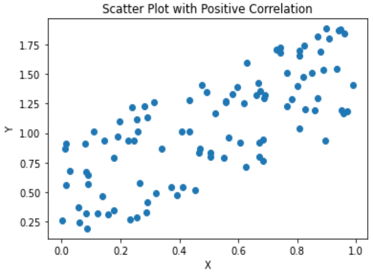
Histogram	Displays bars representing the data count in each interval/bin	`Series.plot.hist()`
		`Series.plot(kind = ‘hist’, bins = n)`
			`s.plot(kind='hist', bins=10)`
			`df[‘age’].plot(kind='hist', bins=10)`
				

Bar Chart	Displays data using rectangular bars	`DataFrame.plot.bar()`
		`DataFrame.plot(kind = ‘bar’)`
			`df.plot(kind='bar')`	

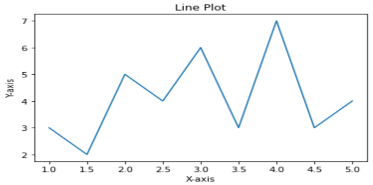
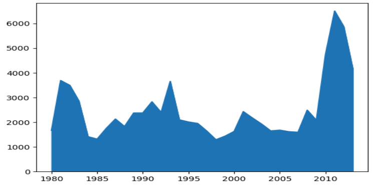
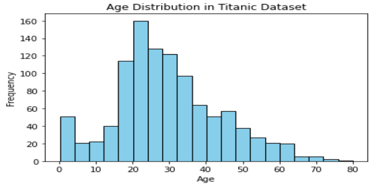
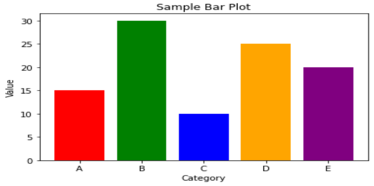
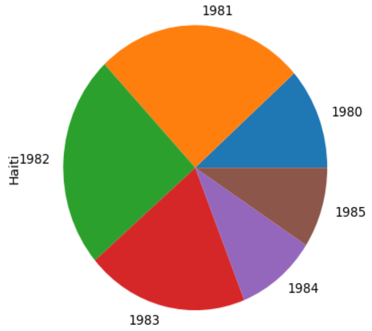
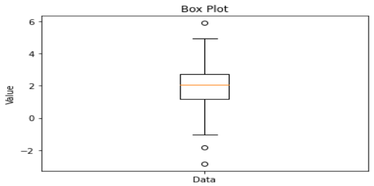
Plot Type	Description	Pandas Function	Example	Visual

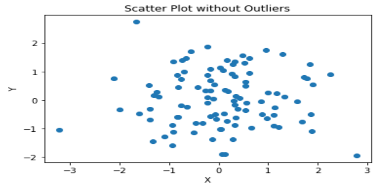
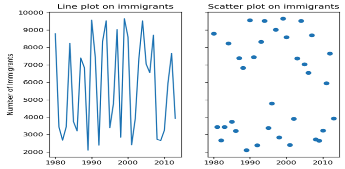
Pie Chart	Displays data as a circular plot divided into slices, representing proportions or percentages of a whole	Series.plot.pie()
		Series.plot(kind = ‘pie’)
		DataFrame.plot.pie(y, labels)
		DataFrame.plot(kind = ‘pie’)
			s.plot(kind='pie’,autopct='%1.1f%%')
			df.plot(x='Category',y='Percentage',kind='pie')
				

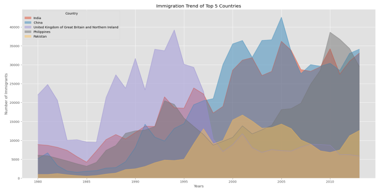
Box Plot	Displays the distribution of a dataset along with key statistical measures	DataFrame.plot.box()
		DataFrame.plot(kind = ‘box’)
			df_can.plot(kind='box')	

Scatter Plot	Uses Cartesian coordinates to display values for two variables	DataFrame.plot.scatter()
		DataFrame.plot(x, y, kind = ‘scatter’)
			df.plot(x='Height', y='Weight', kind='scatter')	

Cheat Sheet : Plotting directly with Matplotlib

Plot Type	Description	Matplotlib Function	Example	Visual
Line Plot	Shows trends and changes over time	`plt.plot()`	`plt.plot(x, y, color='red', linewidth=2)`	
Area Plot	Display data series as filled areas	`plt.fill_between()`	`plt.fill_between(x, y1, y2, color='blue', alpha=0.5)`	
Histogram	Displays bars representing the data count in each interval/bin	`plt.hist()`	`plt.hist(data, bins=10, color='orange', edgecolor='black')`	
Bar Chart	Displays data using rectangular bars	`plt.bar()`	`plt.bar(x, height, color='green', width=0.5)`	
Pie Chart	Displays data as a circular plot divided into slices, representing proportions or percentages of a whole	`plt.pie()`	`plt.pie(sizes, labels=labels, colors=colors, explode=explode)`	
Box Plot	Displays the distribution of a dataset along with key statistical measures	`plt.boxplot()`	`plt.boxplot(data, notch=True)`	

Plot Type	Description	Matplotlib Function	Example	Visual
Scatter Plot	Uses Cartesian coordinates to display values for two variables	`plt.scatter()`	`plt.scatter(x, y, color='purple', marker='o', s=50)`	
Subplotting	Creating multiple plots on one figure	`plt.subplots()`	`fig, axes = plt.subplots(nrows=2, ncols=2)`	

Customization	Customizing plot: adding labels, title, legend, grid	Various customization	`plt.title('Title')`
			`plt.xlabel('X Label')`
			`plt.ylabel('Y Label')`
			`plt.legend()`
			`plt.grid(True)`
				

Author(s)

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Changelog

Date	Version	Changed by	Change Description
2023-06-10	0.1	Dr. Pooja	Initial version created