Plotting

Matplotlib

Matplotlib

- Matplotlib is a low level graph plotting library in python that serves as a visualization utility.
- pip install matplotlib

Plotting x and y values

- The plot() function is used to draw points (markers) in a diagram.
- By default, the plot() function draws a line from point to point.
- The function takes parameters for specifying points in the diagram.
- Parameter 1 is an array containing the points on the x-axis.
- Parameter 2 is an array containing the points on the y-axis.

Default X-Points

- If not specified the points in the x-axis, they will get the default values 0, 1, 2, 3.

Matplotlib Markers

- keyword argument marker is used to emphasize each point with a specified marker.
- 'o' Circle, '*' Star, '.' Point, ',' Pixel, 'x’ X, 'X' X (filled), '+' Plus, 'P' Plus (filled), 's' Square, 'D' Diamond
- 'd' Diamond (thin), 'p' Pentagon, 'H' Hexagon, 'h' Hexagon, 'v' Triangle Down
- '^' Triangle Up, '<' Triangle Left, '>' Triangle Right , '1' Tri Down,
- '2' Tri Up, '3' Tri Left, '4' Tri Right, '|' Vline , '_' Hline

Format Strings

- Syntax: *marker|line|color*
- '-' Solid line
- ':' Dotted line
- '--' Dashed line
- '-.' Dashed/dotted line

Marker color

- 'r' Red
- 'g' Green
- 'b' Blue
- 'c' Cyan
- 'm' Magenta
- 'y' Yellow
- 'k' Black
- 'w' White

Arguments used

- Ms- marker size
- Mec-Markeredge color
- Mfc-Marker face color

Matplotlib Line arguments

- Ls- line style can be solid, dashed, dotted, dashdot
- C- line color
- Lw – line width

Labels

- xlabel() and ylabel() functions is used to set a label for the x- and y-axis.
- title() function to set a title for the plot.

Adding Grid Lines

- grid() function is used to add grid lines to the plot.
- Arguments can be passed are:
- color , linestyle , linewidth, axis

Sub plotting

- Can have more than one plots in a figure
- Subplot(1,2,1) and subplot(1,2,2)- Display the plots horizontally.
- Subplot(2,2,1)and subplot(2,2,2)-Display the plots vertically.
- Can give separate title and suptitle() will assign one common label.

Scatter plots

- scatter() function plots one dot for each observation.
- Can give different colors with color map.
- With alpha argument we can set transparency of dots.

Bar chart

- bar() function to draw bar graphs
- `barh()- function to draw graph horizontaly`
- Arguments passed are: color, width(vertical graph), height(horizontal graph)

Histogram

- A histogram is a graph showing frequency distributions.

Pie Charts

- pie() function to draw pie charts
- Arguments:
- Label
- Explode
- Startangle
- Shadow
- Colors
- legend() function- used for explanation of each wedge

seaborn

- Seaborn is a library that uses Matplotlib underneath to plot graphs. It will be used to visualize random distributions.