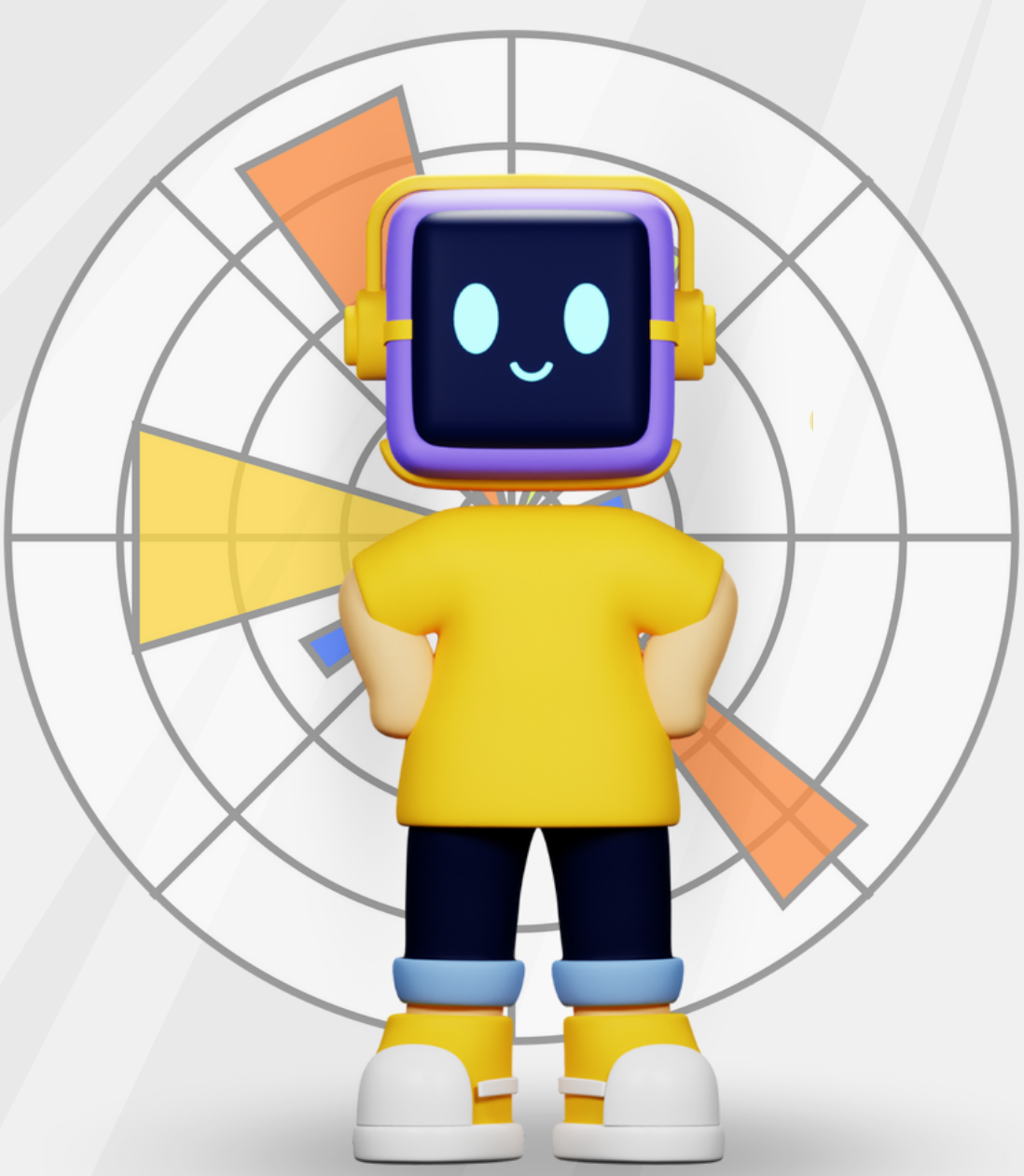
1Grow

www.1stepgrow.com

PYTHON FOR DATA SCIENCE

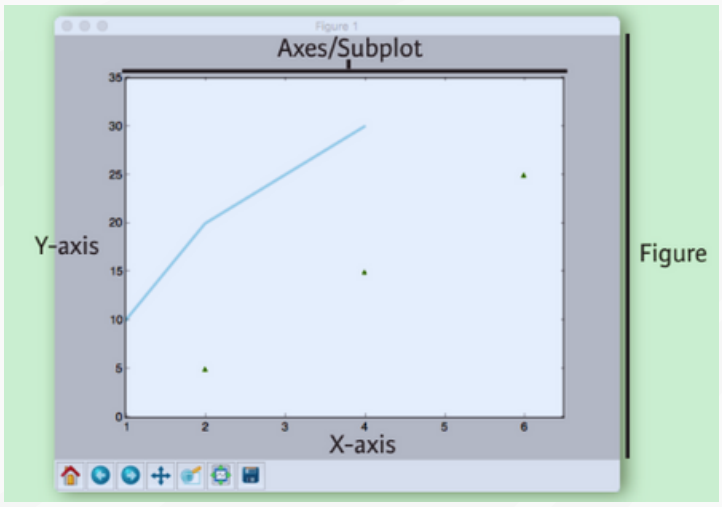
MATPLOTLIB

CHEAT SHEET PART- 2



Plot Anatomy & Workflow

Plot Anatomy



Workflow

The basic steps to creating plots with matplotlib are:

1.Prepare data 2.Create plot 3.Plot
4.Customize plot 5.Save plot 6.Show plot

```
>>> import matplotlib.pyplot as plt
>>> x = [1,2,3,4]
>>> y = [10,20,25,30]
>>> fig = plt.figure()
>>> ax = fig.add_subplot(111)
>>> ax.plot(x, y, color='lightblue', linewidth=3)
>>> ax.scatter([2,4,6],[5,15,25],color='darkgreen',marker='^')
>>> ax.set_xlim(1, 6.5)
>>> plt.savefig('foo.png')
>>> plt.show()
```

Customize Plot

Colors, Color Bars & Color Maps

```
>>> plt.plot(x, x, x, x**2, x, x**3)
>>> ax.plot(x, y, alpha = 0.4)
>>> ax.plot(x, y, c='k')
>>> fig.colorbar (im, orientation='horizontal')
>>> im = ax.imshow (img,cmap='seismic')
```

Markers

```
>>> fig, ax = plt.subplots()
>>> ax.scatter(x,y,marker=".")
>>> ax.plot(x,y,marker="o")
```

Linestyles

```
>>> plt.plot(x,y,linewidth=4.0)
>>> plt.plot(x,y,ls='solid')
>>> plt.plot(x,y,ls='--')
>>> plt.plot(x,y,'--',x**2,y**2,'-.')
>>> plt.setp(lines,color='r',linewidth=4.0)
```

Text & Annotations

```
>>> plt.title(r'$sigma_i=15$', fontsize=20)
```

Limits, Legends & Layouts

Limits & Autoscaling

```
>>> ax.margins(x=0.0,y=0.1)
```
Add padding to a plot

Add padding to a plot

```
>>> ax.axis('equal')
```
Set the aspect ratio of the plot to 1

Set the aspect ratio of the plot to 1

```
>>> ax.set(xlim=[0,10.5], ylim=[-1.5,1.5])
```
Set limits for x-and y-axis

Set limits for x-and y-axis

```
>>> ax.set_xlim(0,10.5)
```
Set limits for x-axis

Limits & Autoscaling

>>> ax.margins(x=0.0,y=0.1)	Add padding to a plot
>>> ax.axis('equal')	Set the aspect ratio of the plot to 1
>>> ax.set(xlim=[0,10.5], ylim=[-1.5,1.5])	Set limits for x-and y-axis
>>> ax.set_xlim(0,10.5)	Set limits for x-axis

Legends

>>> ax.set(title='An Example Axes',ylabel='Y-Axis', xlabel='X-Axis')	Set a title and x-and y-axis labels
>>> ax.legend(loc='best')	No overlapping plot elements

Ticks

>>>ax.xaxis.set(ticks=range(1, 5),ticklabels=[3,100,-12,"foo"])	Manually set x-ticks
>>>ax.tick_params(axis='y',direction='inout', length=10)	Make y-ticks longer and go in and out

Subplot Spacing

>>>fig3.subplots_adjust(wspace=0.5,hspace=0.3,left=0.125,right=0.9,top=0.9,bottom=0.1)	Adjust the spacing between subplots
>>> fig.tight_layout()	Fit subplot(s) in to the figure area

Axis Spines

>>>ax1.spines['top'].set_visible(False)	Make the top axis line for a plot invisible
>>>ax1.spines['bottom'].set_position(('outward',10))	Move the bottom axis line outward

Build your career story with 1stepGrow Academy

Follow 1stepGrow Academy

Share your Comments

Save the Post