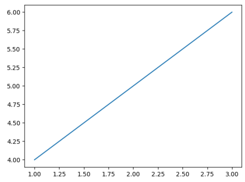
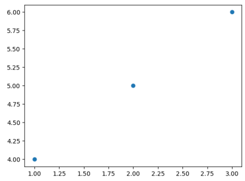
For all graphs, with the code, there is an implied “‘import matplotlib.pyplot as plt“‘ before and “‘plt.show()“‘ after.

```
plt.plot([1, 2, 3], [4, 5, 6])
```

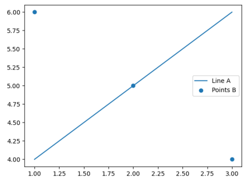


```
plt.scatter([1, 2, 3], [4, 5, 6])
```



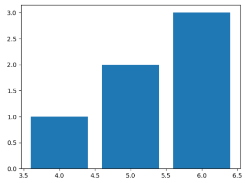
Legends (for labeled plots)

```
plt.plot([1, 2, 3], [4, 5, 6],
    label="Line A")
plt.scatter([1, 2, 3], [6, 5, 4],
    label="Points B")
plt.legend() # Show legend
```



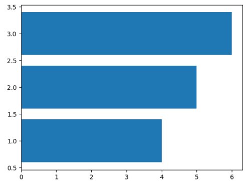
Vertical bars at x with given height

```
# plt.bar(x, height)
plt.bar([4, 5, 6], [1, 2, 3])
```

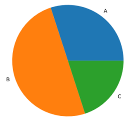


Horizontal bars at y with given width

```
# plt.barh(y, width)
plt.barh([1, 2, 3], [4, 5, 6])
```

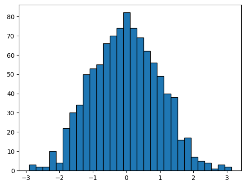


```
plt.pie([30, 50, 20], labels=[’A’,
    ’B’, ’C’])
```



Histogram

```
data = np.random.randn(1000) # 1000
    random values
plt.hist(data, bins=30,
    edgecolor="black")
```



Grids

```
ax.grid(True) # Enable grid
ax.grid(False) # Disable grid
```

Sets the limits for the [xy]-axis

```
ax.set_xlim(0, 10) # x-axis 0->10
ax.set_ylim(-5, 5) # y-axis -5->5
```

Sets the labels for the [xy]-axis

```
ax.set_xlabel("Time (s)")
ax.set_ylabel("Speed (m/s)")
```

Sets specific tick locations on an axis, optionally with labels (converts the numbers to text) and customizes tick appearance.

```
ax.set_xticks([0, 1, 2])
ax.set_yticks([10, 20, 30])
ax.tick_params(width=2, length=5,
    color=’red’)
```

Sets the title

```
ax.set_title("My Graph")
```

Turns the axis on or off.

```
ax.set_axis_off() # Hide axis
ax.set_axis_on() # Show axis
```

Gets the current figure/axis and you can do things like turning off the spines

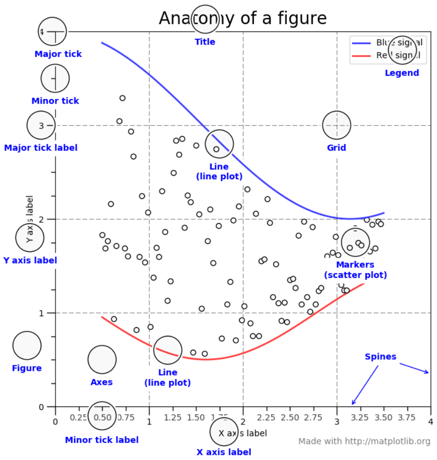
```
fig = plt.gcf()
ax = plt.gca()

# This makes sense now huhu
plt.gca().spines[’top’].set_visible(False
```

Alpha is to make the figure/axis transparent

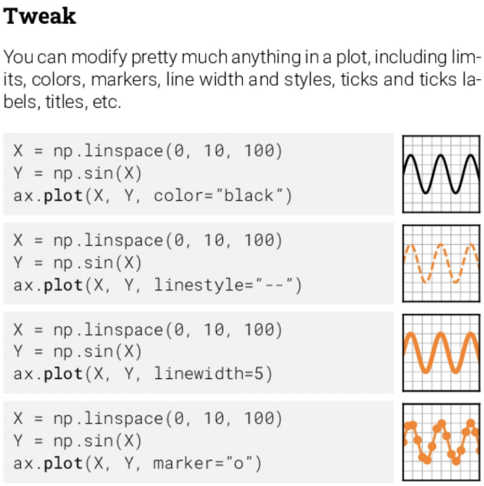
```
fig.patch.set_alpha(0)
ax.patch.set_alpha(0)

# You can place the alpha in making
# 50% transparent line
plt.plot([1, 2, 3], [4, 5, 6],
    alpha=0.5)
# 20% transparent points
plt.scatter([1, 2, 3], [6, 5, 4],
    alpha=0.2)
```



Marker	Description
"."	Point
","	Pixel
"o"	Circle
"s"	Square

Linestyle	Description
"-" or "solid"	Solid
"--" or "dashed"	Dashed
"-." or "dashdot"	Dash-dotted
":" or "dotted"	Dotted
"[Nn]one", or ""	Draw nothing



Tweak

You can modify pretty much anything in a plot, including limits, colors, markers, line width and styles, ticks and ticks labels, titles, etc.

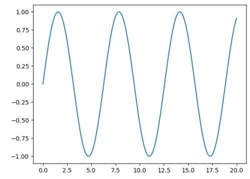
```
X = np.linspace(0, 10, 100)
Y = np.sin(X)
ax.plot(X, Y, color="black")
```

```
X = np.linspace(0, 10, 100)
Y = np.sin(X)
ax.plot(X, Y, linestyle="--")
```

```
X = np.linspace(0, 10, 100)
Y = np.sin(X)
ax.plot(X, Y, linewidth=5)
```

```
X = np.linspace(0, 10, 100)
Y = np.sin(X)
ax.plot(X, Y, marker="o")
```

```
x = np.linspace(0, 20, 1000)
y = np.sin(x)
plt.plot(x, y)
```


1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0