

How can rectangles be drawn in Matplotlib?

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April 22, 2024

RECOMMENDED CITATION

stats writer (2024). *How can rectangles be drawn in Matplotlib?*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=137913>

Rectangles can be easily drawn in Matplotlib by using the "Rectangle" function from the "patches" module. This function allows the user to specify the coordinates of the rectangle's lower left corner, width, height, and other properties such as color and edge width. Additionally, the "Axes" object in Matplotlib provides the "add_patch" method which can be used to add the rectangle to a plot. With these tools, rectangles can be easily customized and added to any Matplotlib plot.

Draw Rectangles in Matplotlib (With Examples)

To draw a rectangle in Matplotlib, you can use the **matplotlib.patches.Rectangle** function, which uses the following syntax:

```
matplotlib.patches.Rectangle(xy, width, height, angle=0.0)
```

where:

xy: The (x, y) coordinates for the anchor point of the rectangle
width: Rectangle width
height: Rectangle height
angle: Rotation in degrees counter-clockwise about xy (Default is 0)

This tutorial provides several examples of how to use this function in practice.

Example 1: Draw a Rectangle on a Plot

The following code shows how to draw a rectangle on a

Matplotlib plot with a width of 2 and height of 6:

```
import matplotlib.pyplot as plt  
from matplotlib.patches import Rectangle
```

```
#define Matplotlib figure and axis
```

```
fig, ax = plt.subplots()
```

```
#create simple line plot
```

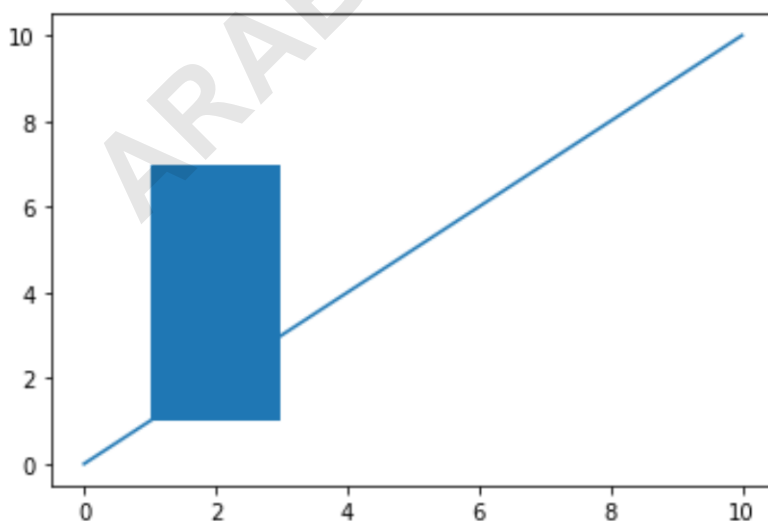
```
ax.plot(,)
```

```
#add rectangle to plot
```

```
ax.add_patch(Rectangle((1, 1), 2, 6))
```

```
#display plot
```

```
plt.show()
```



Example 2: Style a Rectangle

The following code shows how to apply some styling to the rectangle:

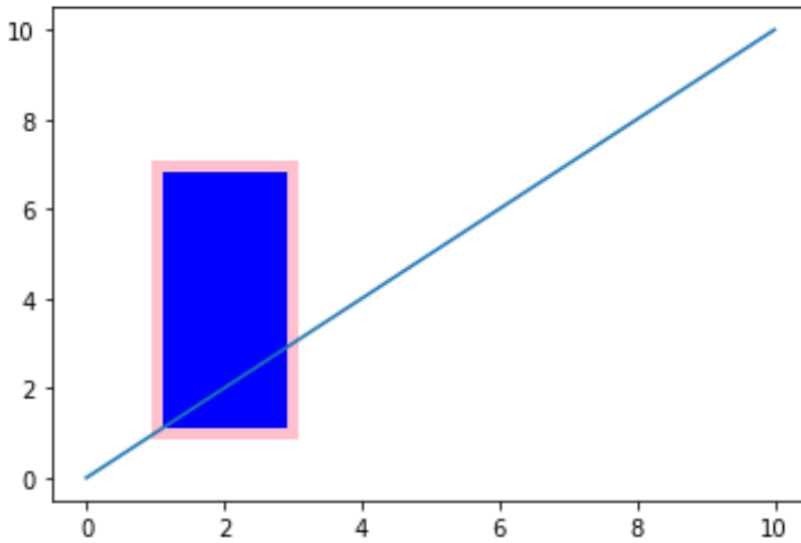
```
import matplotlib.pyplot as plt
from matplotlib.patches import Rectangle

#define Matplotlib figure and axis
fig, ax = plt.subplots()

#create simple line plot
ax.plot(,)

#add rectangle to plot
ax.add_patch(Rectangle((1, 1), 2, 6,
edgecolor = 'pink',
facecolor = 'blue',
fill=True,
lw=5))

#display plot
plt.show()
```



You can find a complete list of styling properties that you can apply to a rectangle [here](#).

Example 3: Draw a Rectangle on an Image

The following code shows how to draw a rectangle on an image in Matplotlib. Note that the image used in this example comes from [this Matplotlib tutorial](#).

To replicate this example, just download the photo of the stinkbug from that tutorial and save it to your own computer.

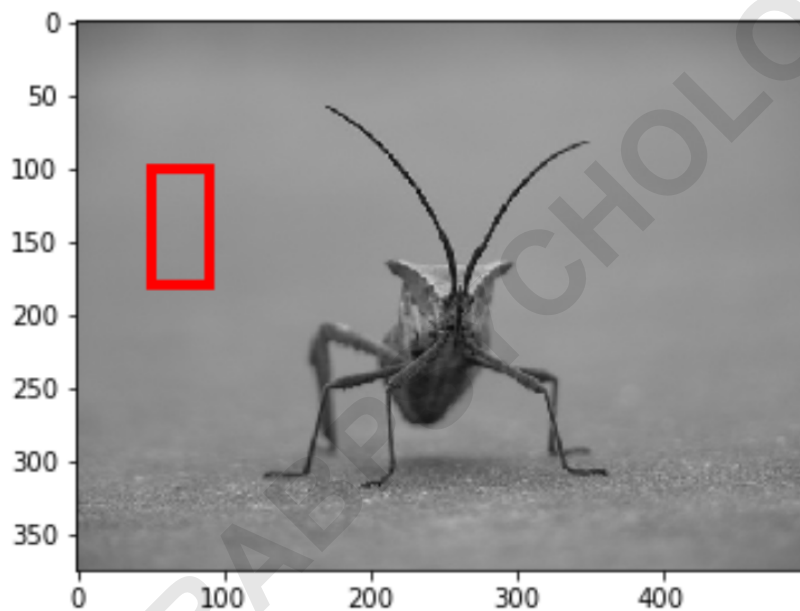
```
import matplotlib.pyplot as plt
from matplotlib.patches import Rectangle
from PIL import Image
```

#display the image

```
plt.imshow(Image.open('stinkbug.png'))
```

#add rectangle

```
plt.gca().add_patch(Rectangle((50,100),40,80,  
edgecolor='red',  
facecolor='none',  
lw=4))
```



Note that we can use the angle argument to rotate the rectangle a certain number of degrees counter-clockwise:

```
import matplotlib.pyplot as plt
```

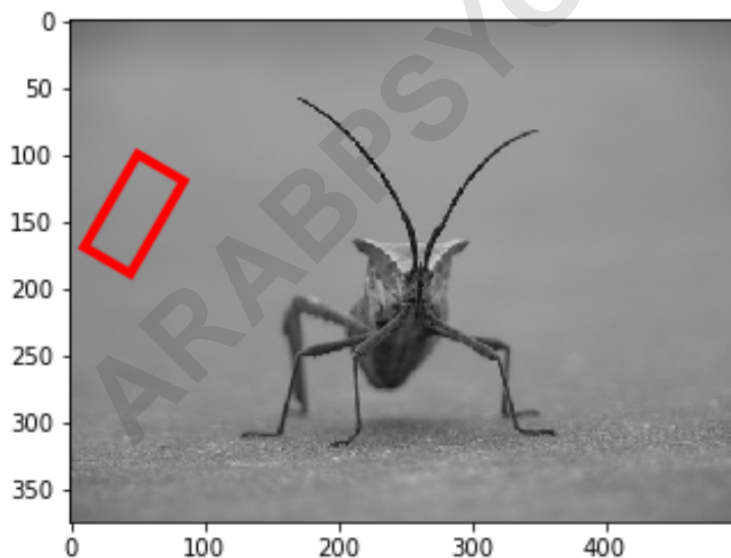
```
from matplotlib.patches import Rectangle
from PIL import Image
```

```
#display the image
```

```
plt.imshow(Image.open('stinkbug.png'))
```

```
#add rectangle
```

```
plt.gca().add_patch(Rectangle((50,100),40,80,
angle=30,
edgecolor='red',
facecolor='none',
lw=4))
```



How to Plot Circles in Matplotlib (With Examples)