

How can I obtain the axis limits in Matplotlib, and what is an example of how to use this function?

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Matplotlib is a popular Python library used for creating visualizations and graphs. One of its key features is the ability to set and adjust the limits of the x and y axes on a graph. This allows for better control and customization of the visual output.

To obtain the axis limits in Matplotlib, one can use the `get_xlim()` and `get_ylim()` functions. These functions return the current limits of the x and y axes, respectively. They can be used in conjunction with the `set_xlim()` and `set_ylim()` functions to manually adjust the limits to desired values.

For example, if we have a line graph showing the temperature data over a period of time, we can use `get_xlim()` to retrieve the current x-axis limits and then use `set_xlim()` to change them to a specific range, such as from 0 to 100 degrees Fahrenheit. This would result in the graph displaying only the data within this range on the x-axis.

In summary, the `get_xlim()` and `get_ylim()` functions in Matplotlib allow for easy retrieval and manipulation of the axis limits, providing more control over the visual representation of data.

Get Axis Limits in Matplotlib (With Example)

You can use the following syntax to get the axis limits for both the x-axis and y-axis of a plot in Matplotlib:

```
import matplotlib.pyplot as plt

#get x-axis and y-axis limits
xmin, xmax, ymin, ymax = plt.axis()

#print axis limits
print(xmin, xmax, ymin, ymax)
```

The following example shows how to use this syntax in practice.

Example: How to Get Axis Limits in Matplotlib

Suppose we create the following scatterplot in Matplotlib:

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

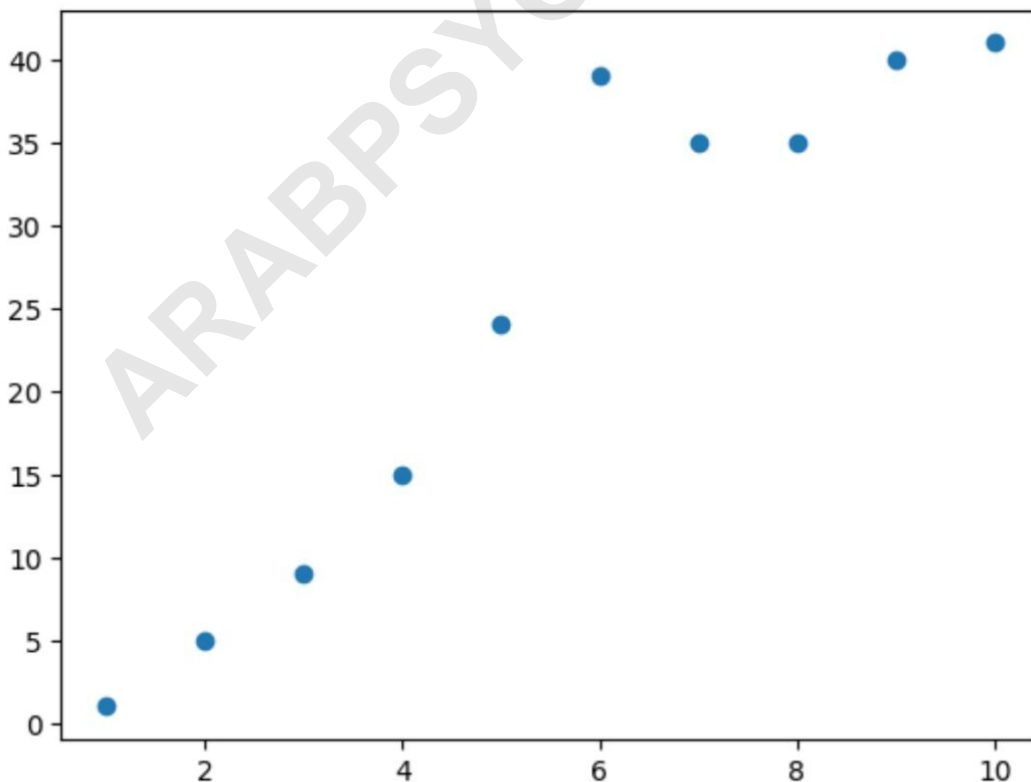
```
#define x and y
```

```
x =
```

```
y =
```

```
#create scatter plot of x vs. y
```

```
plt.scatter(x, y)
```



We can use the following syntax to get the axis limits for both the x-axis and y-axis of the scatterplot:

```
import matplotlib.pyplot as plt  
  
#define x and y  
x =  
y =  
  
#create scatter plot of x vs. y  
plt.scatter(x, y)  
  
#get x-axis and y-axis limits  
xmin, xmax, ymin, ymax = plt.axis()  
  
#print axis limits  
print(xmin, xmax, ymin, ymax)  
  
0.55 10.45 -1.0 43.0
```

From the output we can see:

x-axis minimum: 0.55 x-axis maximum: 10.45
y-axis minimum: -1.0 y-axis maximum: 43.0

These values match the axis limits that can be seen in

the scatterplot above.

We can also use the `annotate()` function to add these axis limits as text values to the plot if we'd like:

```
import matplotlib.pyplot as plt

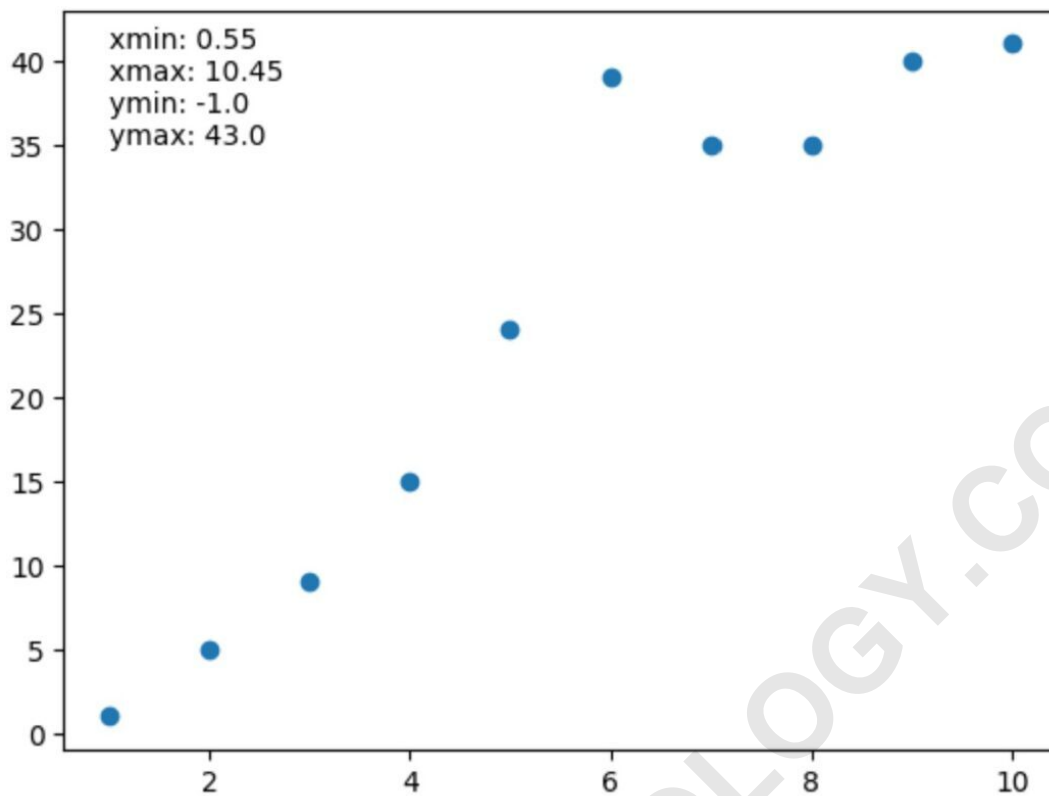
#define x and y
x =
y =

#create scatter plot of x vs. y
plt.scatter(x, y)

#get x-axis and y-axis limits
xmin, xmax, ymin, ymax = plt.axis()

#print axis limits
lims = 'xmin: ' + str(round(xmin, 2)) + '\n' +
'xmax: ' + str(round(xmax, 2)) + '\n' +
'ymin: ' + str(round(ymin, 2)) + '\n' +
'ymax: ' + str(round(ymax, 2))

#add axis limits to plot at (x,y) coordinate (1,35)
plt.annotate(lims, (1, 35))
```



The following tutorials explain how to perform other common tasks in Matplotlib: