Create Chart with Two *y*-Axes

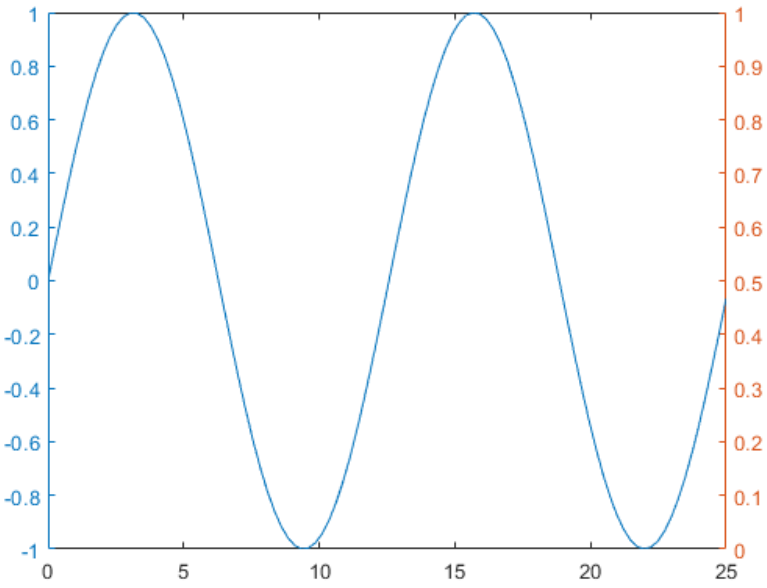
This example shows how to create a chart with *y*-axes on the left and right sides using the `yyaxis` function. It also shows how to label each axis, combine multiple plots, and clear the plots associated with one or both of the sides.

Try This Example

Plot Data Against Left *y*-Axis

Create axes with a *y*-axis on the left and right sides. The `yyaxis left` command creates the axes and activates the left side. Subsequent graphics functions, such as `plot`, target the active side. Plot data against the left *y*-axis.

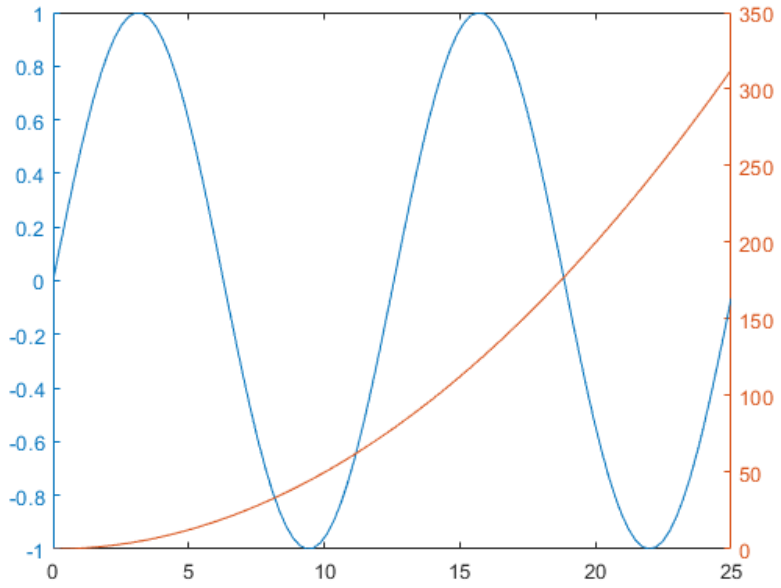
```
x = linspace(0,25);
y = sin(x/2);
yyaxis left
plot(x,y);
```



Plot Data Against Right *y*-Axis

Activate the right side using `yyaxis right`. Then plot a set of data against the right *y*-axis.

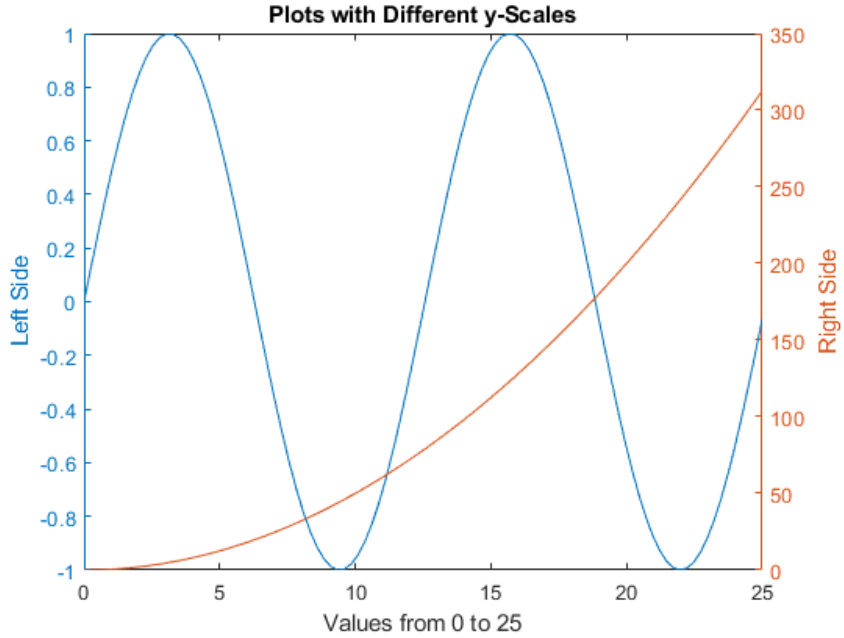
```
r = x.^2/2;
yyaxis right
plot(x,r);
```



Add Title and Axis Labels

Control which side of the axes is active using the `yyaxis left` and `yyaxis right` commands. Then, add a title and axis labels.

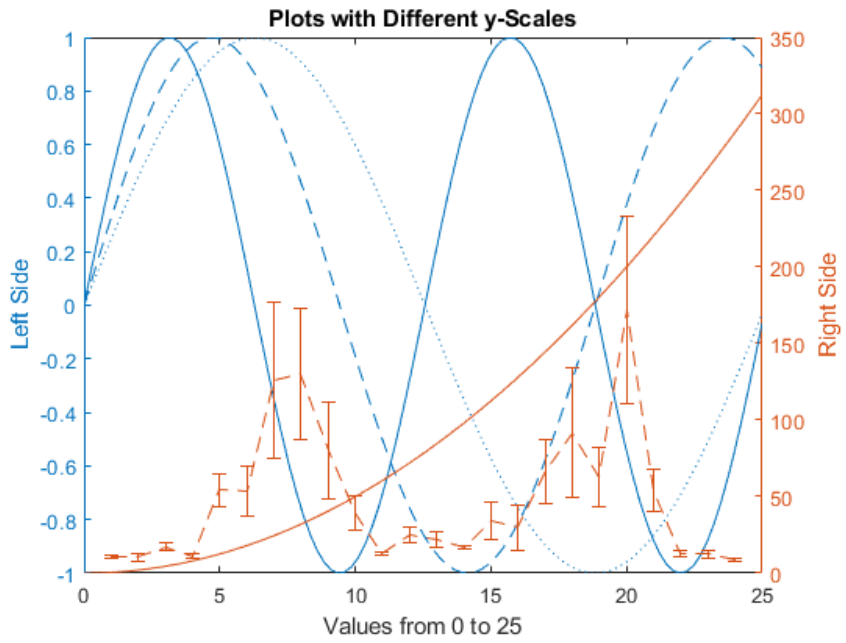
```
yyaxis left
title('Plots with Different y-Scales')
xlabel('Values from 0 to 25')
ylabel('Left Side')

yyaxis right
ylabel('Right Side')
```



Plot Additional Data Against Each Side

Add two more lines to the left side using the `hold on` command. Add an errorbar to the right side. The new plots use the same color as the corresponding *y*-axis and cycle through the line style order. The `hold on` command affects both the left and right sides.

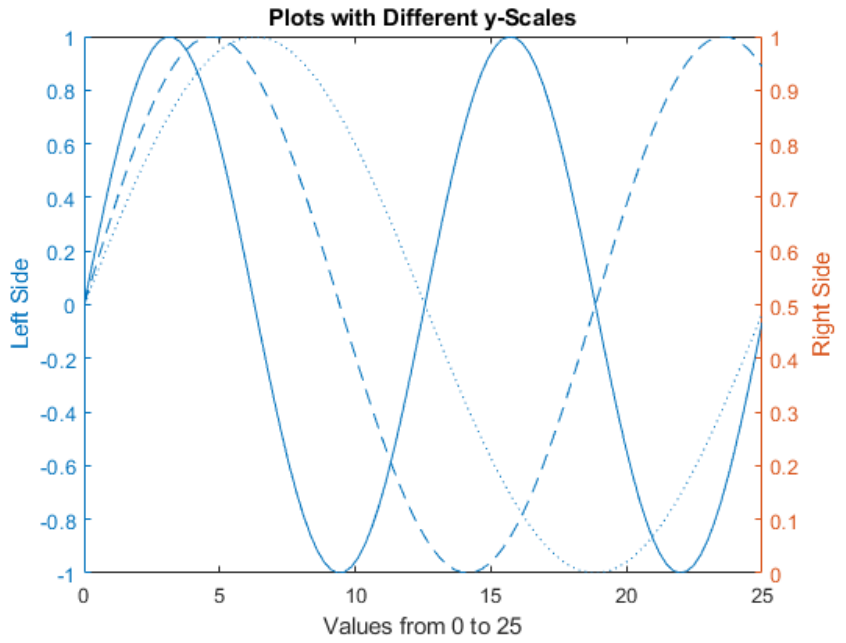
```
hold on

yyaxis left
y2 = sin(x/3);
plot(x,y2);
y3 = sin(x/4);
plot(x,y3);

yyaxis right
load count.dat;
m = mean(count,2);
e = std(count,1,2);
errorbar(m,e)

hold off
```



Clear One Side of Axes

Clear the data from the right side of the axes by first making it active, and then using the `cla` command.

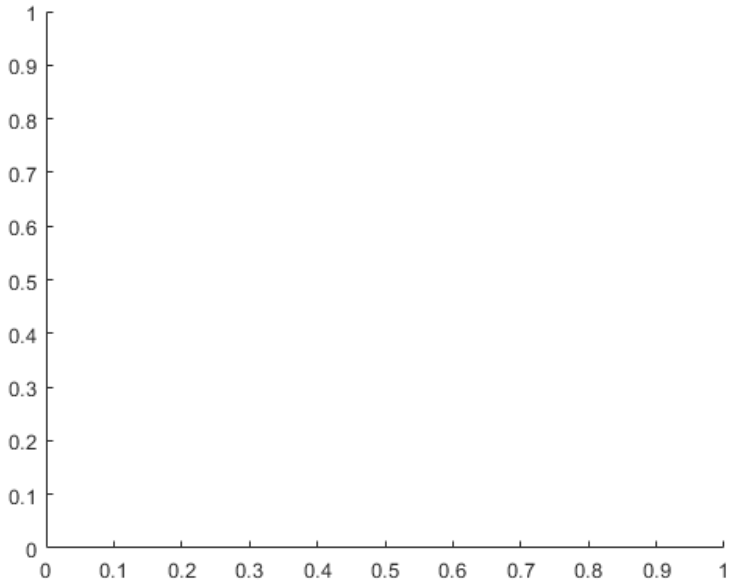
```
yyaxis right
cla
```



Clear Axes and Remove Right *y*-Axis

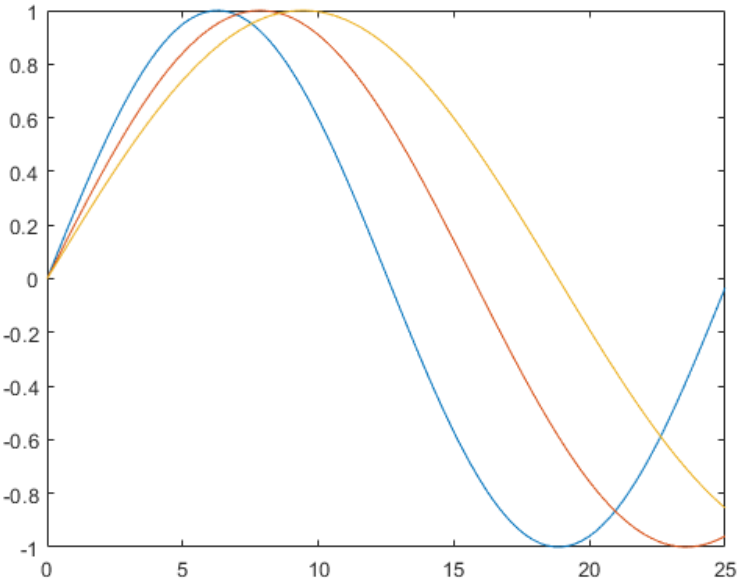
Clear the entire axes and remove the right *y*-axis using `cla reset`.

```
cla reset
```



Now when you create a plot, it only has one *y*-axis. For example, plot three lines against the single y-axis.

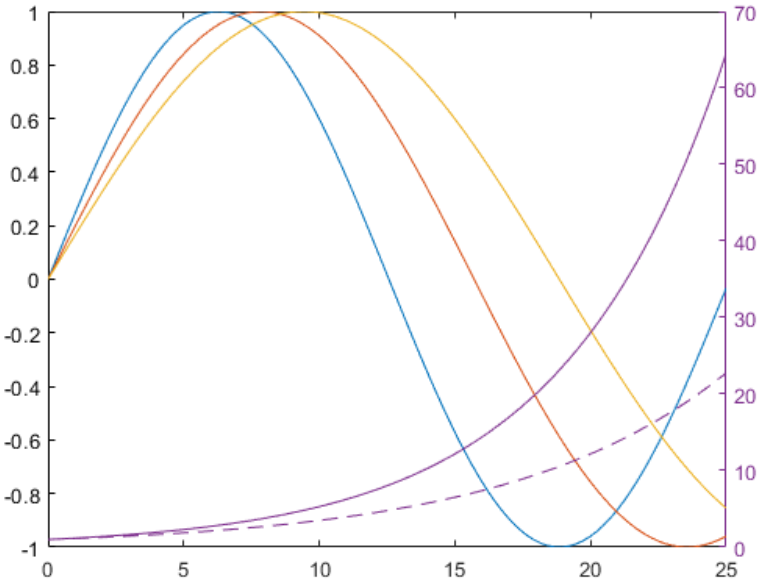
```
xx = linspace(0,25);
yy1 = sin(xx/4);
yy2 = sin(xx/5);
yy3 = sin(xx/6);
plot(xx,yy1,xx,yy2,xx,yy3)
```



Add Second *y*-Axis to Existing Chart

Add a second *y*-axis to an existing chart using `yyaxis`. The existing plots and the left *y*-axis do not change colors. The right *y*-axis uses the next color in the axes color order. New plots added to the axes use the same color as the corresponding *y*-axis.

```
yyaxis right
rr1 = exp(xx/6);
rr2 = exp(xx/8);
plot(xx,rr1,xx,rr2)
```



See Also

Functions

`cla` | `hold` | `plot` | `title` | `xlabel` | `ylabel` | `yyaxis`

Related Topics

- Modify Properties of Charts with Two y-Axes
- Combine Multiple Plots