

subplot

Create axes in tiled positions



GUI Alternatives

To add subplots to figures, click one of the *New Subplot* icons in the Figure Palette, and slide right to select an arrangement of subplots. For details, see [Plotting Tools — Interactive Plotting](#) in the MATLAB Graphics documentation.

Syntax

```
h = subplot(m,n,p) or subplot(mnp)
subplot(m,n,p, 'replace')
subplot(m,n,p, 'v6')
subplot(h)
subplot('Position',[left bottom width height])
h = subplot(...)
```

Description

`subplot` divides the current figure into rectangular panes that are numbered rowwise. Each pane contains an axes object. Subsequent plots are output to the current pane.

`h = subplot(m,n,p) or subplot(mnp)` breaks the figure window into an m -by- n matrix of small axes, selects the p th axes object for the current plot, and returns the axes handle. The axes are counted along the top row of the figure window, then the second row, etc. For example,

```
subplot(2,1,1), plot(income)
subplot(2,1,2), plot(outgo)
```

plots income on the top half of the window and outgo on the bottom half. If the `CurrentAxes` is nested in a `uipanel`, the panel is used as the parent for the `subplot` instead of the current figure. The new axes object becomes the current

axes.

If `p` is a vector, it specifies an axes object having a position that covers all the `subplot` positions listed in `p`.

`subplot(m,n,p, 'replace')`, If the specified axes object already exists, delete it and create a new axes.

`subplot(m,n,p, 'v6')` places the axes so that the plot boxes are aligned, but does not prevent the labels and ticks from overlapping. Saved subplots created with the `v6` option are compatible with MATLAB 6.5 and earlier versions.

`subplot(h)` makes the axes object with handle `h` current for subsequent plotting commands.

`subplot('Position',[left bottom width height])` creates an axes at the position specified by a four-element vector. `left`, `bottom`, `width`, and `height` are in normalized coordinates in the range from 0.0 to 1.0.

`h = subplot(...)` returns the handle to the new axes object.

Backwards Compatibility

Use the `subplot 'v6'` option and save the figure with the `'v6'` option when you want to be able to load a FIG-file containing subplots into MATLAB Version 6.5 or earlier.

Remarks

If a `subplot` specification causes a new axes object to overlap any existing axes, then `subplot` deletes the existing axes object and `uicontrol` objects. However, if the `subplot` specification exactly matches the position of an existing axes object, then the matching axes object is not deleted and it becomes the current axes.

`subplot(1,1,1)` or `clf` deletes all axes objects and returns to the default `subplot(1,1,1)` configuration.

You can omit the parentheses and specify `subplot` as

```
subplot mnp
```

where `m` refers to the row, `n` refers to the column, and `p` specifies the pane.

Be aware when creating subplots from scripts that the `Position` property of

subplots is not finalized until either

- A `drawnow` command is issued.
- MATLAB returns to await a user command.

That is, the value obtained for `subplot` *i* by the command

```
get(h(i), 'position')
```

will not be correct until the script refreshes the plot or exits.

Special Case: `subplot(111)`

The command `subplot(111)` is not identical in behavior to `subplot(1,1,1)` and exists only for compatibility with previous releases. This syntax does not immediately create an axes object, but instead sets up the figure so that the next graphics command executes a `clf` reset (deleting all figure children) and creates a new axes object in the default position. This syntax does not return a handle, so it is an error to specify a return argument. (MATLAB implements this behavior by setting the figure's `NextPlot` property to `replace`.)

Examples

To plot `income` in the top half of a figure and `outgo` in the bottom half,

```
income = [3.2 4.1 5.0 5.6];  
outgo = [2.5 4.0 3.35 4.9];  
subplot(2,1,1); plot(income)  
subplot(2,1,2); plot(outgo)
```



The following illustration shows four **subplot** regions and indicates the command used to create each.



The following combinations produce asymmetrical arrangements of subplots.

```
subplot(2,2,[1 3])
```

```
subplot(2,2,2)
```

```
subplot(2,2,4)
```



You can also use the colon operator to specify multiple locations if they are in sequence.

```
subplot(2,2,1:2)
```

```
subplot(2,2,3)
```

```
subplot(2,2,4)
```



See Also

[axes](#), [cla](#), [clf](#), [figure](#), [gca](#)

[Basic Plots and Graphs](#) for more information

[← sub2ind](#)

[subasgn →](#)

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