User Guide: Feature 2 - Horizontal stem plot #5856

matplotlib.pyplot.stem(*args, **kwargs)

Create a stem plot.

Call signatures:

```
stem(y, linefmt='b-', markerfmt='bo', basefmt='r-')
stem(x, y, linefmt='b-', markerfmt='bo', basefmt='r-')

#Orientation indicate the newly added feature.
stem(x, y, linefmt='b-', markerfmt='bo', basefmt='r-', orientation = “vertical”)

stem(x, y, linefmt='b-', markerfmt='bo', basefmt='r-', orientation = “horizontal”)
```

By default, if the parameter orientation was not passed, the function stem plot will use vertical stem with horizontal baseline.

A vertical stem plot is a stem plot that plots vertical lines (using linefmt) at each x location from the baseline to y, and places a marker there using markerfmt. A horizontal line at 0 is plotted using basefmt.

A horizontal stem plot is a stem plot that plots a horizontal lines at each x location from the baseline to y. A vertical baseline at 0 is plotted using basefmt. The main difference between in horizontal stem is it use vertical base line and a horizontal stem.

If no *x* values are provided, the default is (0, 1, ..., len(y) - 1)

The rest are same as the original guide for vertical stem with horizontal baseline.

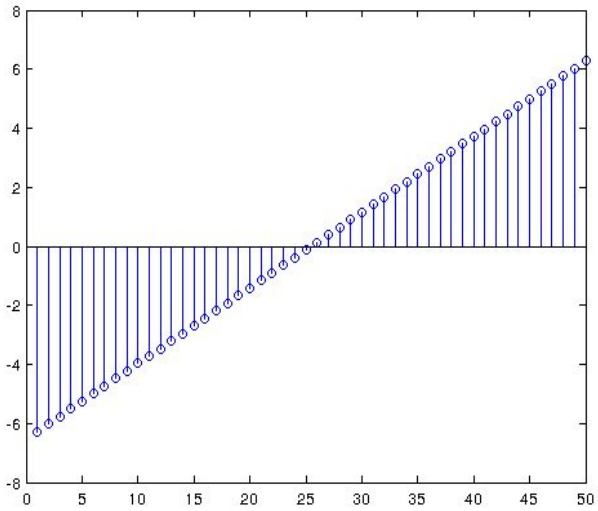
Return value is a tuple (*markerline*, *stemlines*, *baseline*).

See also

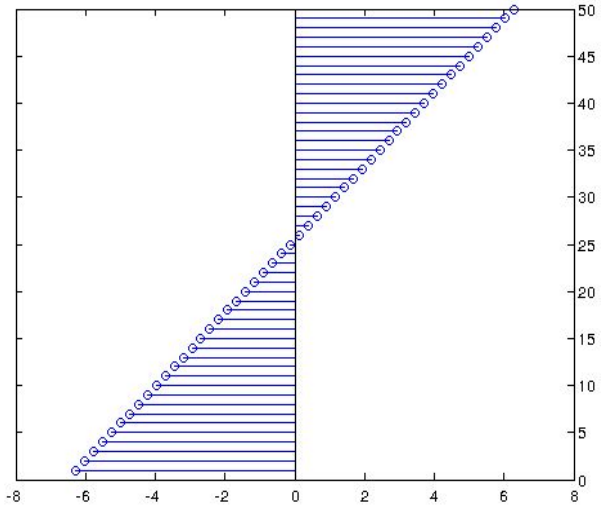
This document for details.

Example:

1. Vertical Stem with Horizontal Baseline.



2. Horizontal stem with Vertical Baseline



Notes

In addition to the above described arguments, this function can take a **data** keyword argument. If such a **data** argument is given, the following arguments are replaced by **data[<arg>]**:

- All positional and all keyword arguments.

Additional kwargs: hold = [True|False] overrides default hold state

User Acceptance Tests

Regression tests will be run in order to ensure that the introduction of the feature does not break pre-existing functionality.

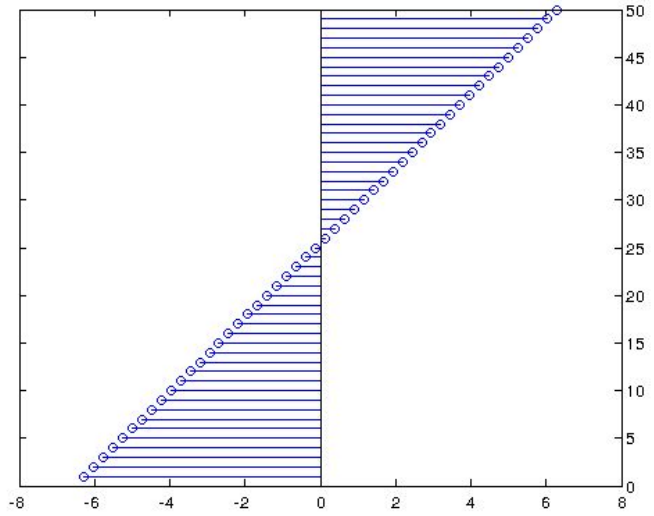
> python tests.py

Additionally, there will be tests to see if the below features functions as expected (by running pyplot.stem() to create stem plots):

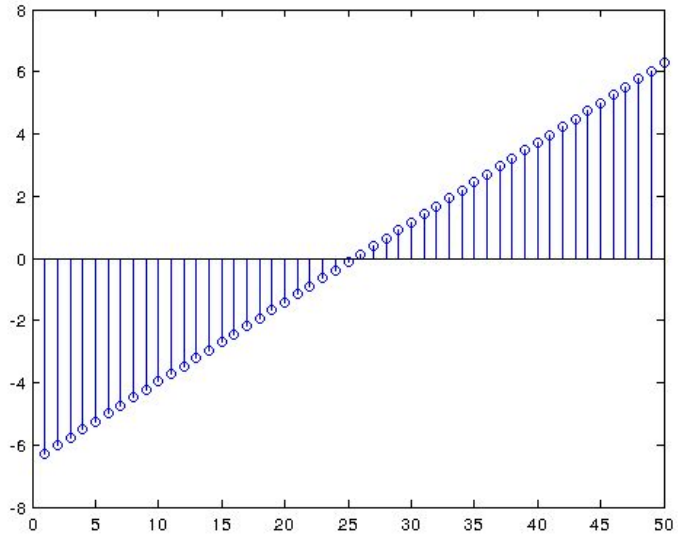
- New feature: horizontal stem with vertical baseline
- Existing feature: vertical stem with horizontal baseline

Expected outputs:

Horizontal stem with vertical baseline(New feature)



Vertical Stem with Horizontal baseline (Existing feature)



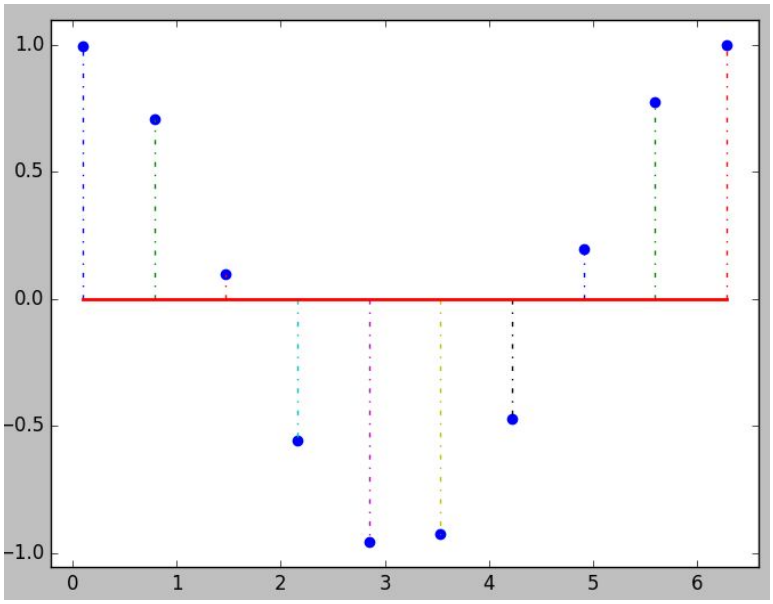
Unit-test Suite

Test case #1: Testing existing vertical stem plot

>python python vert_stem_horo_base_existing.py

Expected Result: There should be a vertical stem plot with horizontal baseline

Purpose: Ensure that additional augmentation does not break pre-existing functionality

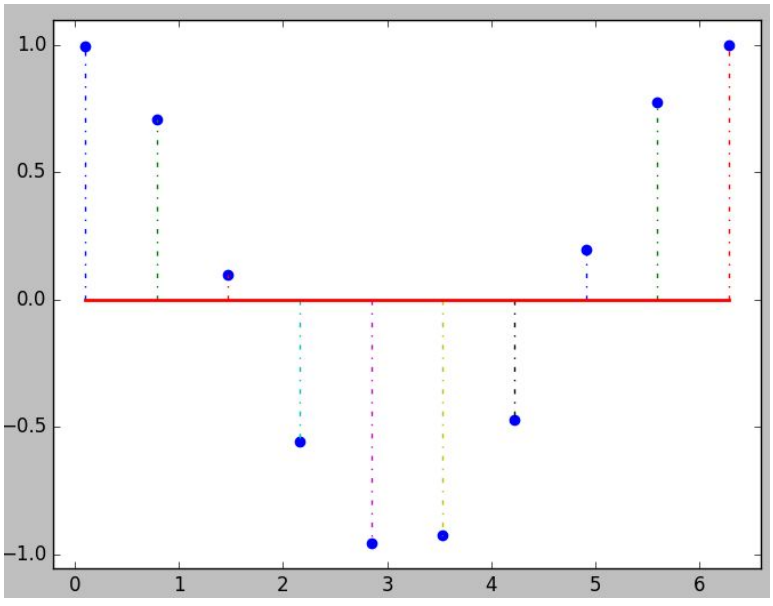


Test case #2: Testing vertical stem plot with orientation='vertical'

>python vert_stem_horo_base_new.py

Expected Result: There should be a vertical stem plot with horizontal baseline

Purpose: Ensure user is able to create vertical stem plot with horizontal baseline while giving the orientation='vertical' argument.



Test case #3: Testing horizontal stem plot with orientation='horizontal'

>python horo_stem_vert_base_new.py

Expected Result: There should be a horizontal stem plot with vertical baseline

Purpose: Ensure user is able to create horizontal stem plot with vertical baseline while giving the orientation='horizontal' argument.