dfviz Documentation

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CONTENTS:

dfviz is a small package for interactive visualisation of Pandas or Dask dataframes. It is built upon Panel and hvPlot and can be used either within a notebook environment, as a stand-alone application, or as one of the visualisation modules within the Intake GUI.

CHAPTER ONE

INSTALLATION

With a conda environment, you can use

```
$ conda install -c conda-forge dfviz
```

or, in general you can install the released version

```
$ pip install dfviz
```

or development version

```
$ pip install git+https://github.com/intake/dfviz
```

For both `pip`-based methods, it is generally better to install the requirements manually beforehand.

CHAPTER

TWO

EXAMPLE

To run the interface with some random data, you can execute

```
python -c "import dfviz; dfviz.example.run_example()"
```

which will open a new tab in a browser, ready for a plot to be defined. Just press Plot to get a colourful scatter-plot output.

2.1 Usage

The `dfviz` interface is designed to be simple and easy to use.

2.1.1 Invoking dfviz

The main entry point is `dfviz.DFViz`. Pass either a Pandas or Dask dataframe, and optionally pass values for any of the widget in interface. The following sets the plot type to "bar" and that the "y" values should be taken from (the only) column "data":

```
import pandas as pd
import dfviz

df = pd.DataFrame({'data': [5, 2, 6]})
dfv = dfviz.DFViz(df, kind="bar", y=["data"])
```

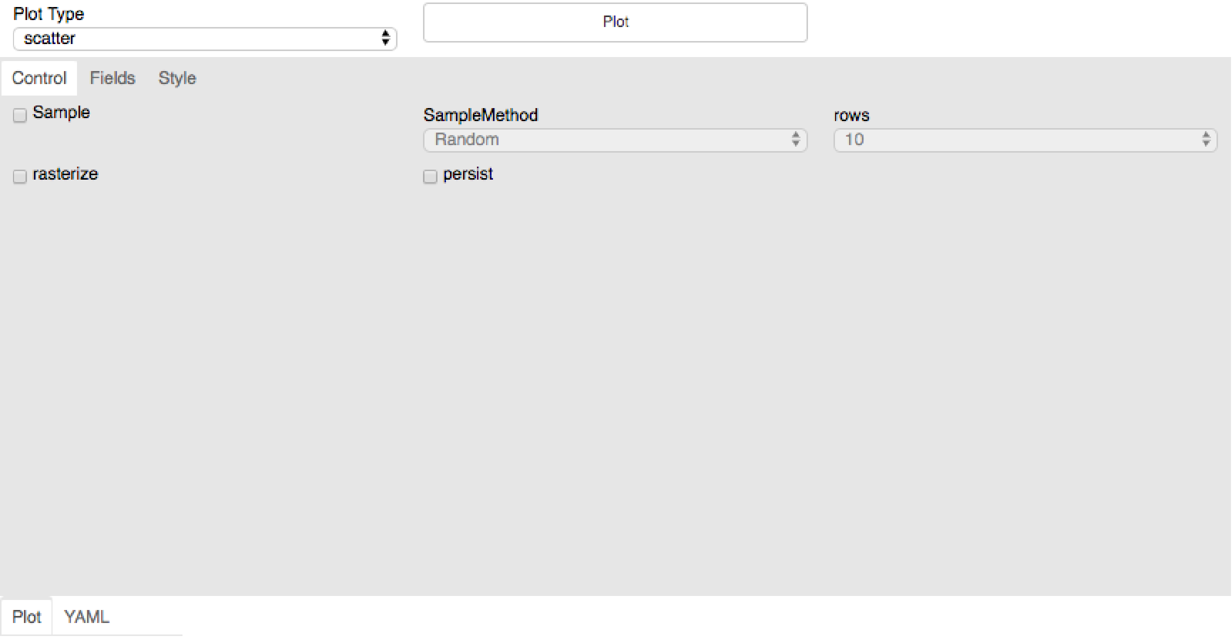
To show the interface, you can simply render `dfv.panel` in a notebook cell (by letting it be the last thing in the cell), using display() on `dfv.panel`, or running `dfv.show()`, which will launch the interface stand-alone in a new browser tab.

2.1.2 Walkthrough

Ee will demonstrate the options available in the interface by using example random data. To view the example, please execute

```
import dfviz
dfviz,example.run_example()
```

and you should see the following in a browser tab



Plot Type
scatter

□ Sample

SampleMethod
Random

rows
10

□ rasterize

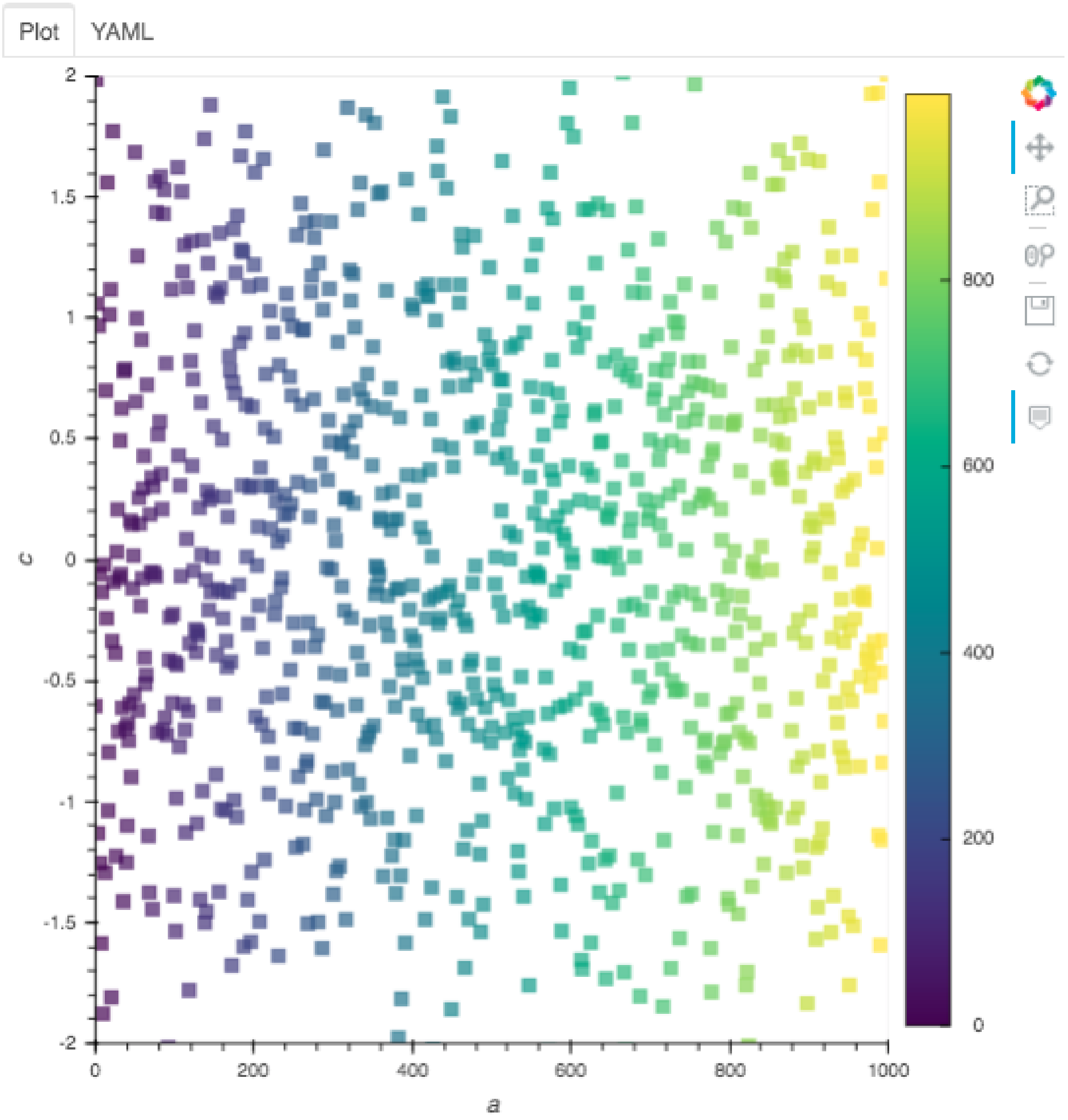
□ persist

The interface has three main components:

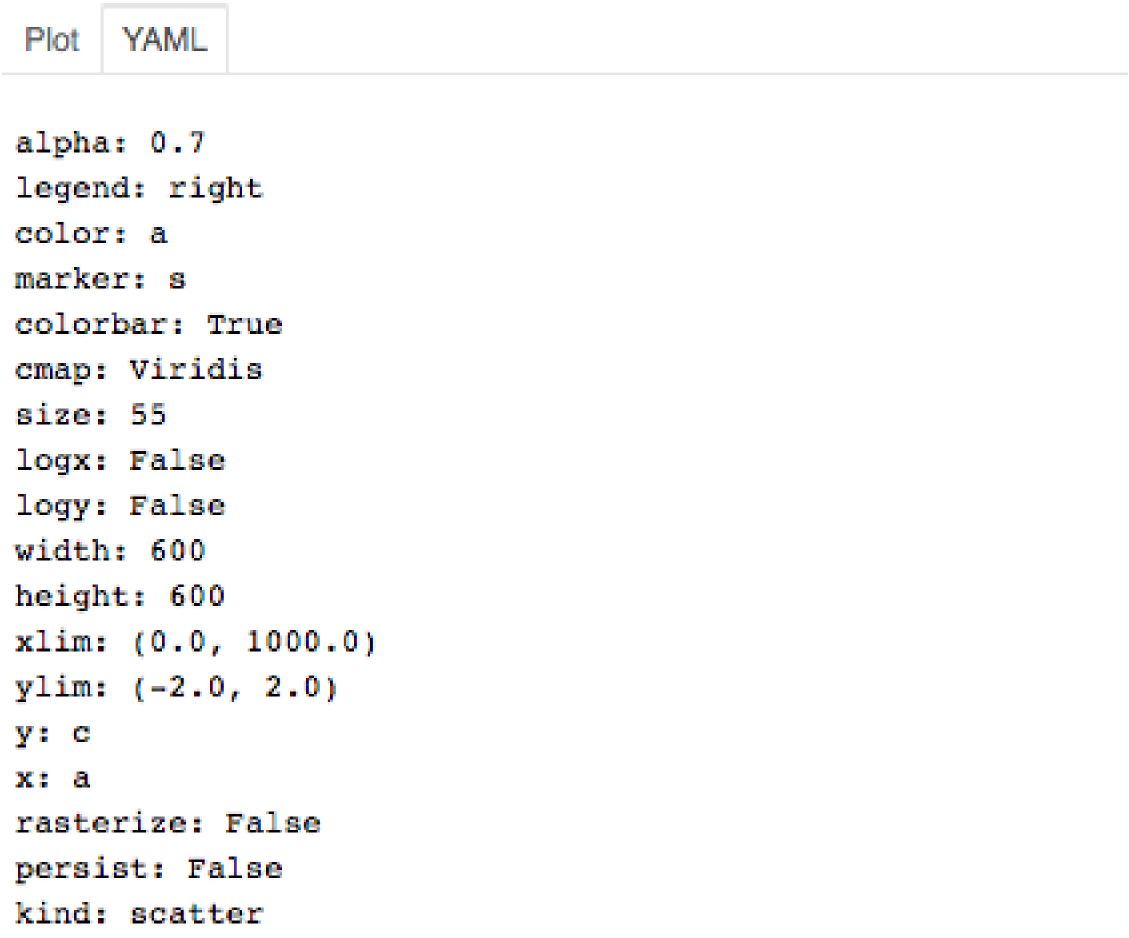
- above the grey area are the two main controls to select the type of plot, and to render the plot
- the central grey area, which dominates the space, is for user input. Here you can define the sampling of the data, the columns to use, and style attributes of the plot
- below, and currently blank, is hte output area, which will contain the plot and a text description of how to produce this plot from the data.

2.1.3 Clicking Plot

The "Plot" button causes a rendering of the data with the current selections. If you change parameters in the input area, the plot will not update until you press this button. Try it now. The two panes of the output area will contain the graph:



and the parameters that were used to produce it



```
alpha: 0.7
legend: right
color: a
marker: s
colorbar: True
cmap: Viridis
size: 55
logx: False
logy: False
width: 600
height: 600
xlim: (0.0, 1000.0)
ylim: (-2.0, 2.0)
y: c
x: a
rasterize: False
persist: False
kind: scatter
```

Note that the example sets the parameters to produce decent output.

2.1.4 Setting Parameters

Each pane contains different controls which affect the plot you will see:

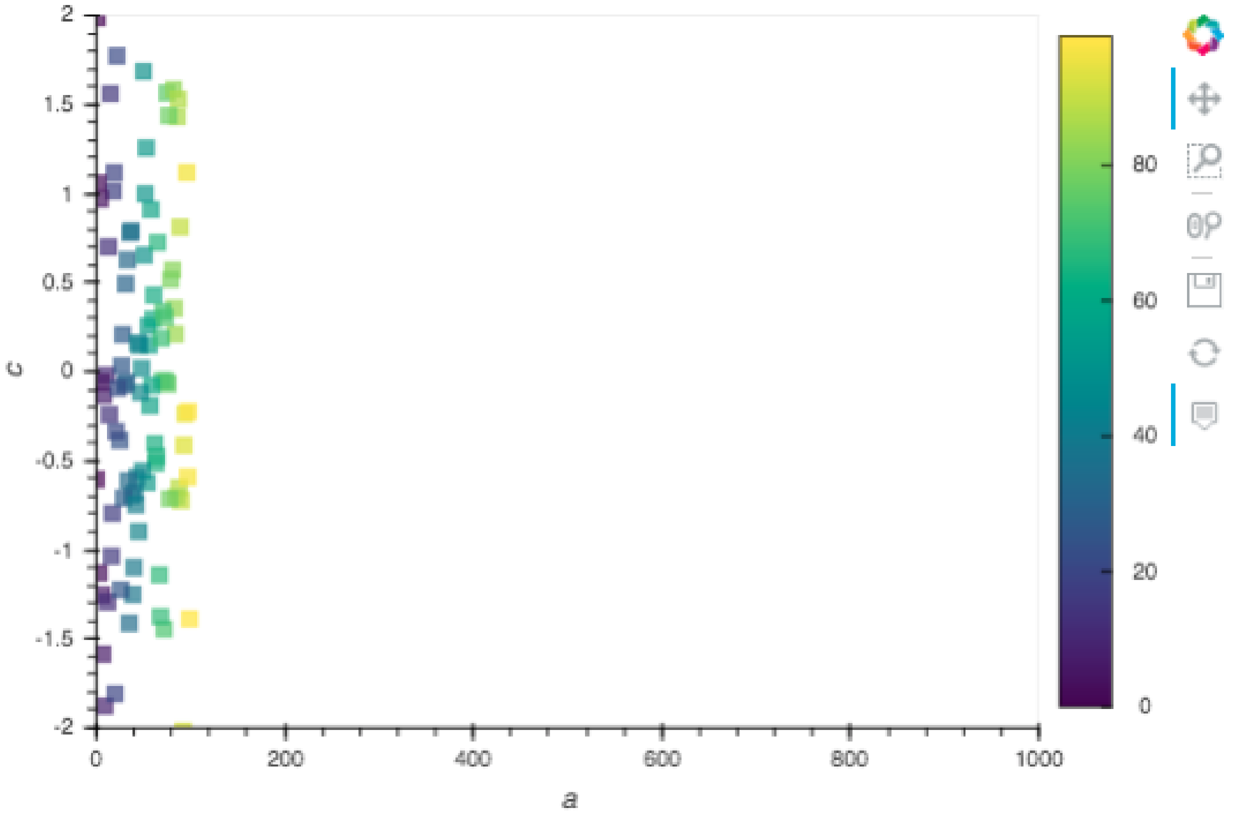
"Plot Type"

Several types of output are available, provided by hvPlot. Please follow the link to see the kinds of output you can expect, and the effect that setting parameters can have on them.

“Control”

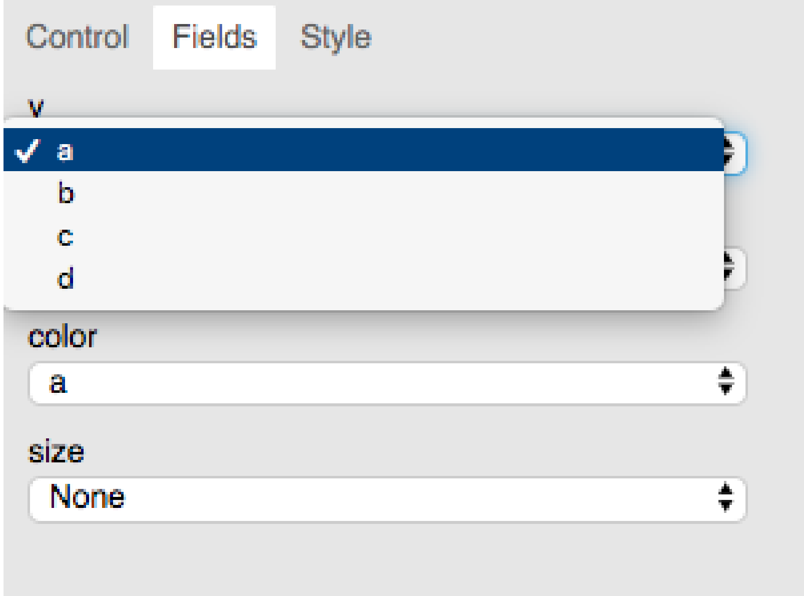
These are global parameters, particularly the sampling of the underlying data.

For example, choosing to sample (checking the box next to “Sample”) and picking the “Head” method with 100 rows will select only the first 1/10th of the data and will produce output something like



“Fields”

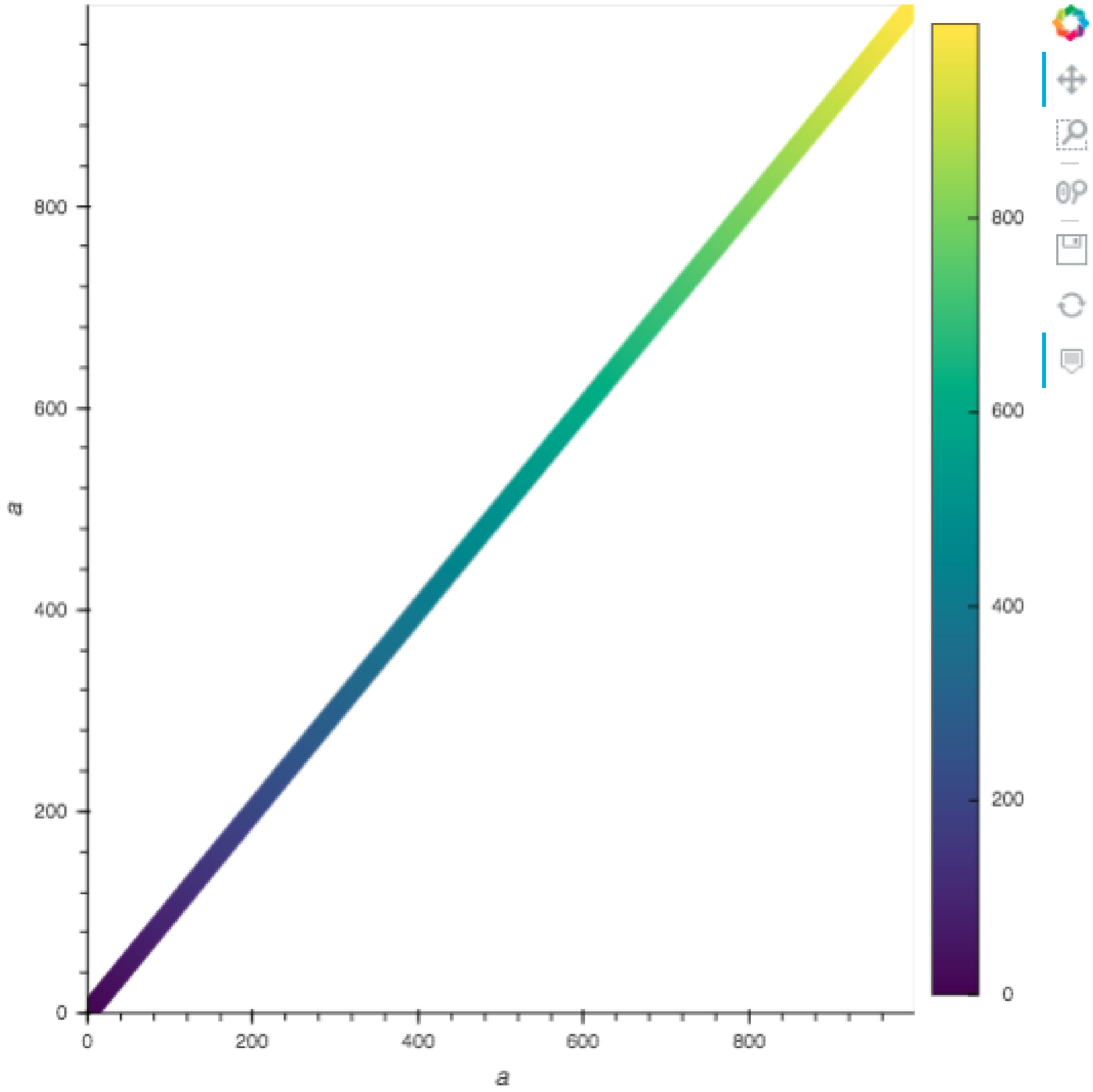
Here we can define which column of the input data is used for what function while plotting. The example data-frame contains columns “a”, “b”, “c” and “d”. So for example, if we select columns “a” (a monotonically increasing integer) for the `y` axis



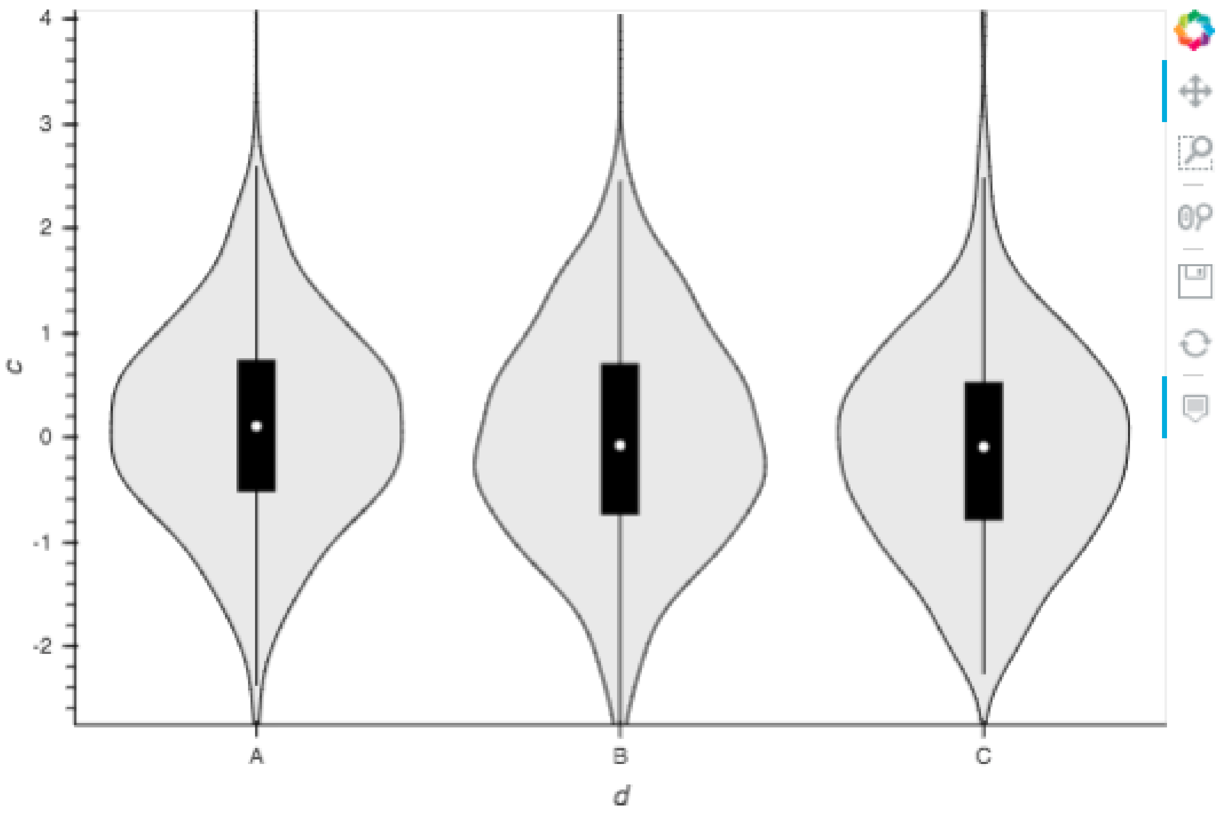
color
a

size
None

we get output



Which field functions can be selected here will depend on the plot type; for example, the *table* plot type only allows selection of which columns to show, but statistical plots like *violin* allow grouping in this case “by” categorical column “d”:



It is possible to pick combinations of fields which do not produce any reasonable output. Again, please refer to hvPlot.

"Style"

This pane offers optional parameters which affect the general look of the plot, such as colours, marker styles and axes extent. Some of these are also only shown for those plot types where they are appropriate; and some will not have any effect for all combinations of fields selections (a legend is not shown when only one column is selected, even if the a legend is requested).

CHAPTER THREE

INDICES AND TABLES

- genindex
- modindex
- search