matplotlib-helpers Documentation

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Contents

CHAPTER 1

Grid plot

The *matplotlib_helpers.chart.encode()* function is inspired by the altair project.

With *matplotlib_helpers.chart.encode()* **(quoted from the** altair **documentation)**:

- The **data source** is a `DataFrame` that consists of columns of different data types (quantitative, ordinal, nominal and date/time).
- The `DataFrame` is in a tidy format where the rows correspond to samples and the columns correspond the observed variables.
- The data is mapped to the **visual properties** (position, color, size, shape, faceting, etc.) using the group-by operation of Pandas.

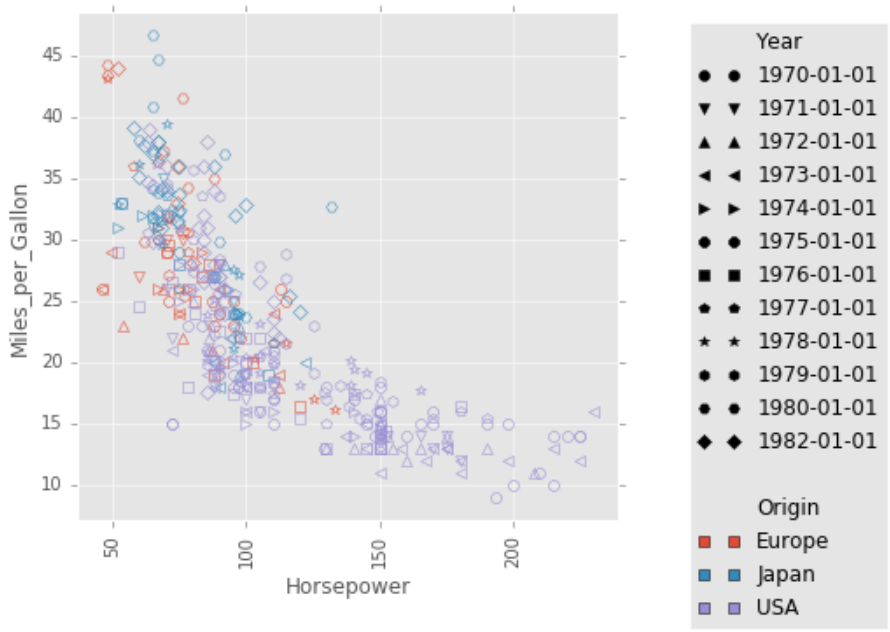
CHAPTER 2

Usage

The examples below plot vehicle fuel economy (in miles per gallon) versus horsepower for a dataset from the altair project.

Set marker color by the `Year` column and set the shape of the each marker according to the `Origin` column:

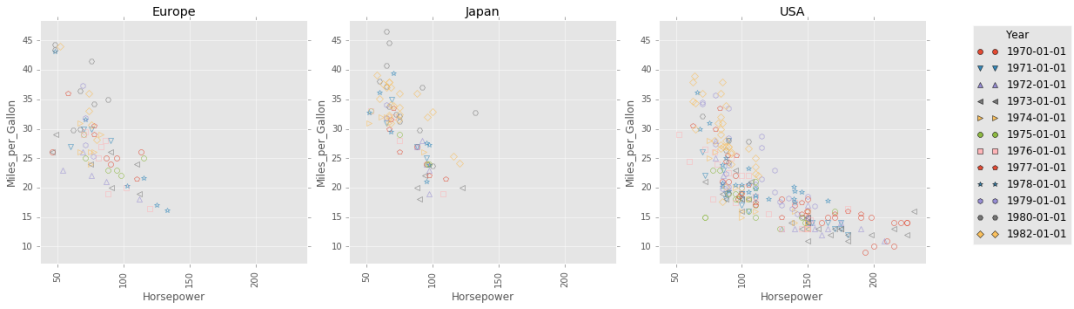
```
from altair import load_dataset
import matplotlib as mpl
import matplotlib.style
import matplotlib_helpers as mplh
import matplotlib_helpers.chart

# load data as a pandas DataFrame
cars = load_dataset('cars')

with mpl.style.context(['ggplot']):
    mplh.chart.encode(cars,
                      x='Horsepower',
                      y='Miles_per_Gallon',
                      shape='Year',
                      color='Origin',
                      cell_size=5, fill=False)
```



Split plot into multiple subplots, with the subplot in each column corresponding to a distinct value in the `Origin` column.

The same type of handling can be applied using the `row` keyword.

```
with mpl.style.context(['ggplot']):
    mplh.chart.encode(cars,
                      x='Horsepower',
                      y='Miles_per_Gallon',
                      color='Year',
                      shape='Year',
                      column='Origin',
                      cell_size=5, fill=False)
```

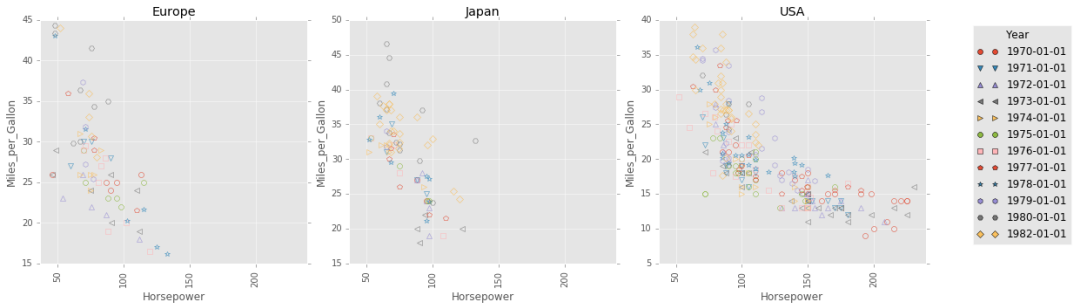


By default, all plots share the same `x` axis scale and `y` axis scale. This behaviour can be changed by setting the `sharexscale` keyword argument or the `shareyscale` keyword argument.

For example, note that the subplots below all have different `x` axis and `y` axis scales.

```
with mpl.style.context(['ggplot']):
    mplh.chart.encode(cars,
                      x='Horsepower',
                      y='Miles_per_Gallon',
                      color='Year',
                      shape='Year',
```

```
                    column='Origin',
                    sharexscale=False,
                    shareyscale=False,
                    cell_size=5, fill=False)
```



See the *matplotlib_helpers.chart.encode()* documentation for more details.

Contents:

Project Modules

matplotlib_helpers Package

matplotlib_helpers Package

chart Module

class matplotlib_helpers.chart.**Chart**(*df*)
Bases: object

Methods

encode(***kwargs*)

matplotlib_helpers.chart.**data_groups**(*df*, *group_key*, *data_key*)

matplotlib_helpers.chart.**encode**(*df_data*, ***kwargs*)

Parameters

- **x** (*str*) – Label of column containing x-dimension.
- **y** (*str*) – Label of column containing y-dimension.
- **row** (*str, optional*) – Label of column containing row categories. If None, all data is plotted in a single row of plots.
- **column** (*str, optional*) – Label of column containing column categories. If None, all data is plotted in a single column of plots.
- **color** (*str, optional*) – Label of column containing color categories. If None, all data is plotted in the same color.

- **shape** (*str, optional*) – Label of column containing shape categories. If None, all data is plotted using the same marker shape.
- **style** (*str, optional*) – Label of column containing style categories. If None, all data is plotted using the same line style.
- **sharexscale** (*bool or 'column', optional*) – If True (default) all subplots share the same scale on the x axis. If 'column' all subplots *in the same column* share the same x axis. If False, the x axis of each subplot is scaled independently.
- **shareyscale** (*bool or 'row', optional*) – If True (default) all subplots share the same scale on the y axis. If 'row' all subplots *in the same row* share the same y axis. If False, the y axis of each subplot is scaled independently.
- **fill** (*bool, optional*) – Fill markers
- **stroke** (*bool, optional*) – Draw marker outlines
- **linestyle** (*str, optional*) – Line style to use for plot.

  By default, if shape is set, linestyle is set to "none". If shape is not set, linestyle is set to "--" by default.

Returns The matplotlib figure (fig), a nested dictionary (axes) indexed by row key then by column key, a pandas.Series (keys) mapping each categorical argument name to the corresponding column label, a pandas.Series (values) mapping each categorical argument name to a corresponding list of unique category values.

Return type (fig, axes, keys, values)

matplotlib_helpers.chart.**groupif**(*df*, *key*)

matplotlib_helpers.chart.**time_safe**(*series*)

matplotlib_helpers.chart.**time_total_seconds**(*t*)

matplotlib_helpers.chart.**unique_by_column**(*df*)

Parameters **df** (*pandas.DataFrame*) – Data frame.

Returns Mapping from each column label to ordered list of unique values in corresponding column in data frame.

Return type pandas.Series

CHAPTER 3

Indices and tables

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