seaborn.heatmap

`seaborn.` **`heatmap`** (*data, vmin=None, vmax=None, cmap=None, center=None, robust=False, annot=None, fmt='.2g', annot_kws=None, linewidths=0, linecolor='white', cbar=True, cbar_kws=None, cbar_ax=None, square=False, ax=None, xticklabels=True, yticklabels=True, mask=None, **kwargs*)

Plot rectangular data as a color-encoded matrix.

This function tries to infer a good colormap to use from the data, but this is not guaranteed to work, so take care to make sure the kind of colormap (sequential or diverging) and its limits are appropriate.

This is an Axes-level function and will draw the heatmap into the currently-active Axes if none is provided to the `ax` argument. Part of this Axes space will be taken and used to plot a colormap, unless `cbar` is False or a separate Axes is provided to `cbar_ax`.

Parameters:

data : rectangular dataset

> 2D dataset that can be coerced into an ndarray. If a Pandas DataFrame is provided, the index/column information will be used to label the columns and rows.

vmin, vmax : floats, optional

> Values to anchor the colormap, otherwise they are inferred from the data and other keyword arguments. When a diverging dataset is inferred, one of these values may be ignored.

cmap : matplotlib colormap name or object, optional

> The mapping from data values to color space. If not provided, this will be either a cubehelix map (if the function infers a sequential dataset) or `RdBu_r` (if the function infers a diverging dataset).

center : float, optional

> The value at which to center the colormap. Passing this value implies use of a diverging colormap.

robust : bool, optional

If True and `vmin` or `vmax` are absent, the colormap range is computed with robust quantiles instead of the extreme values.

annot : bool or rectangular dataset, optional

If True, write the data value in each cell. If an array-like with the same shape as `data`, then use this to annotate the heatmap instead of the raw data.

fmt : string, optional

String formatting code to use when adding annotations.

annot_kws : dict of key, value mappings, optional

Keyword arguments for `ax.text` when `annot` is True.

linewidths : float, optional

Width of the lines that will divide each cell.

linecolor : color, optional

Color of the lines that will divide each cell.

cbar : boolean, optional

Whether to draw a colorbar.

cbar_kws : dict of key, value mappings, optional

Keyword arguments for *fig.colorbar*.

cbar_ax : matplotlib Axes, optional

Axes in which to draw the colorbar, otherwise take space from the main Axes.

square : boolean, optional

If True, set the Axes aspect to “equal” so each cell will be square-shaped.

ax : matplotlib Axes, optional

Axes in which to draw the plot, otherwise use the currently-active Axes.

xticklabels : list-like, int, or bool, optional

If True, plot the column names of the dataframe. If False, don't plot the column names. If list-like, plot these alternate labels as the xticklabels. If an integer, use the column names but plot only every n label.

yticklabels : list-like, int, or bool, optional

If True, plot the row names of the dataframe. If False, don't plot the row names. If list-like, plot these alternate labels as the yticklabels. If an integer, use the index names but plot only every n label.

mask : boolean array or DataFrame, optional

If passed, data will not be shown in cells where `mask` is True. Cells with missing values are automatically masked.

kwargs : other keyword arguments

All other keyword arguments are passed to `ax.pcolormesh`.

Returns:

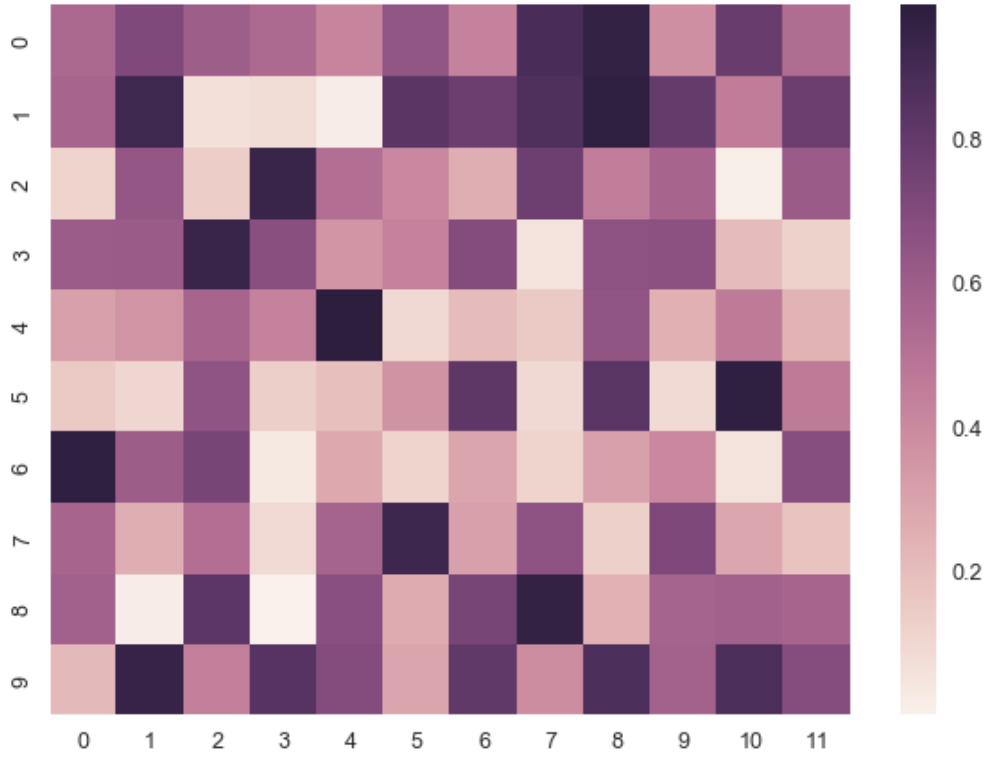
ax : matplotlib Axes

Axes object with the heatmap.

Examples

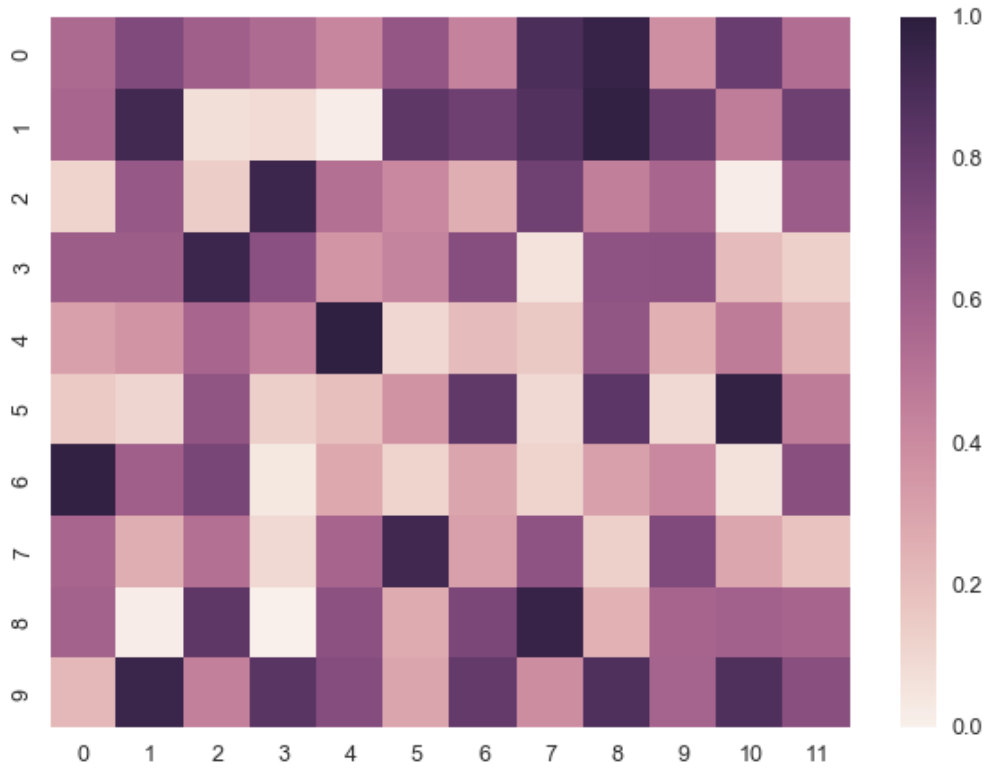
Plot a heatmap for a numpy array:

```
>>> import numpy as np; np.random.seed(0)
>>> import seaborn as sns; sns.set()
>>> uniform_data = np.random.rand(10, 12)
>>> ax = sns.heatmap(uniform_data)
```



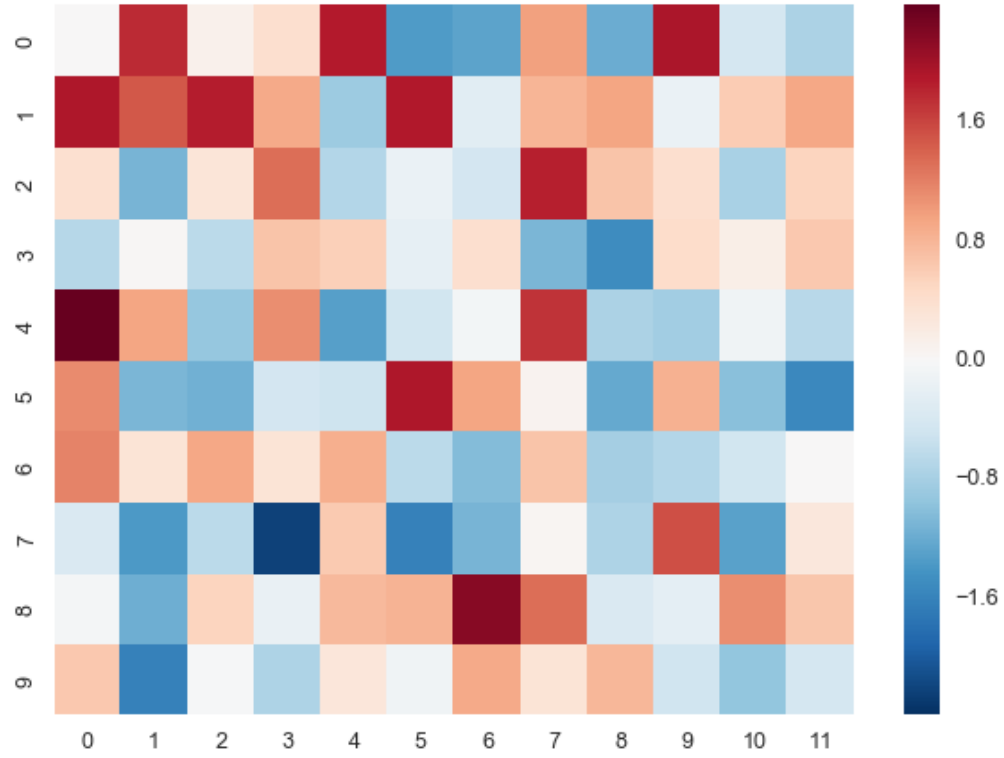
Change the limits of the colormap:

```
>>> ax = sns.heatmap(uniform_data, vmin=0, vmax=1)
```



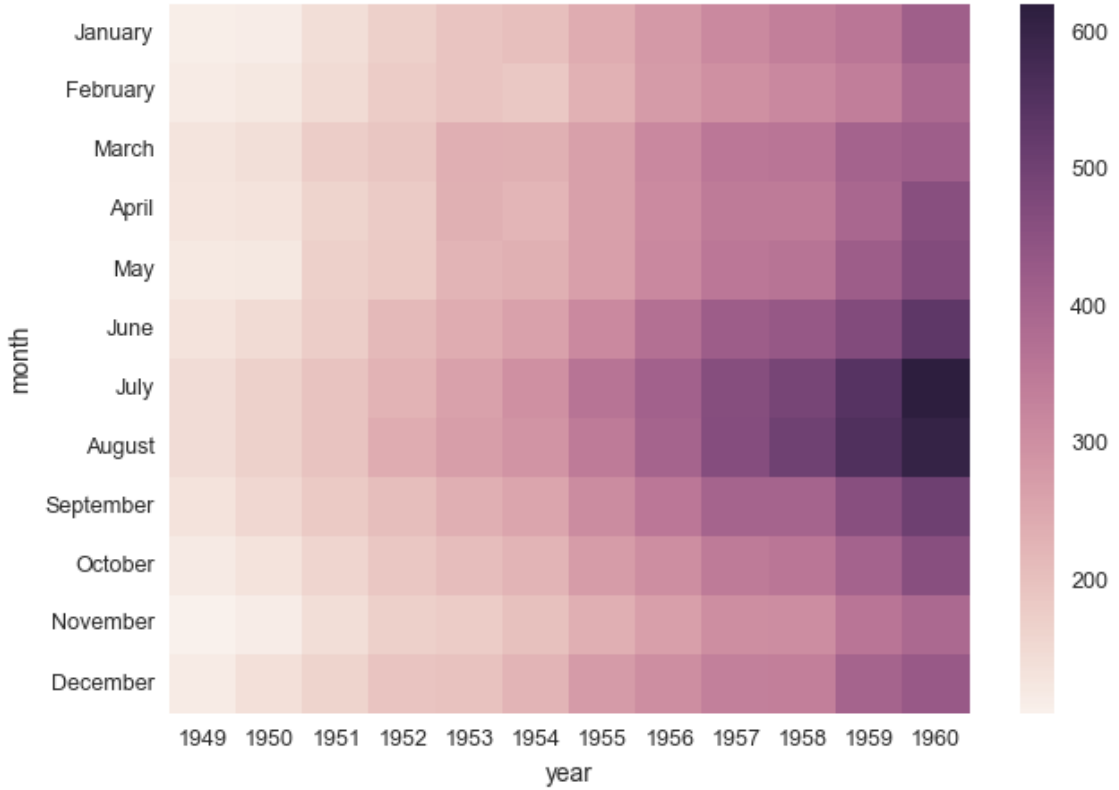
Plot a heatmap for data centered on 0:

```
>>> normal_data = np.random.randn(10, 12)
>>> ax = sns.heatmap(normal_data)
```



Plot a dataframe with meaningful row and column labels:

```
>>> flights = sns.load_dataset("flights")
>>> flights = flights.pivot("month", "year", "passengers")
>>> ax = sns.heatmap(flights)
```

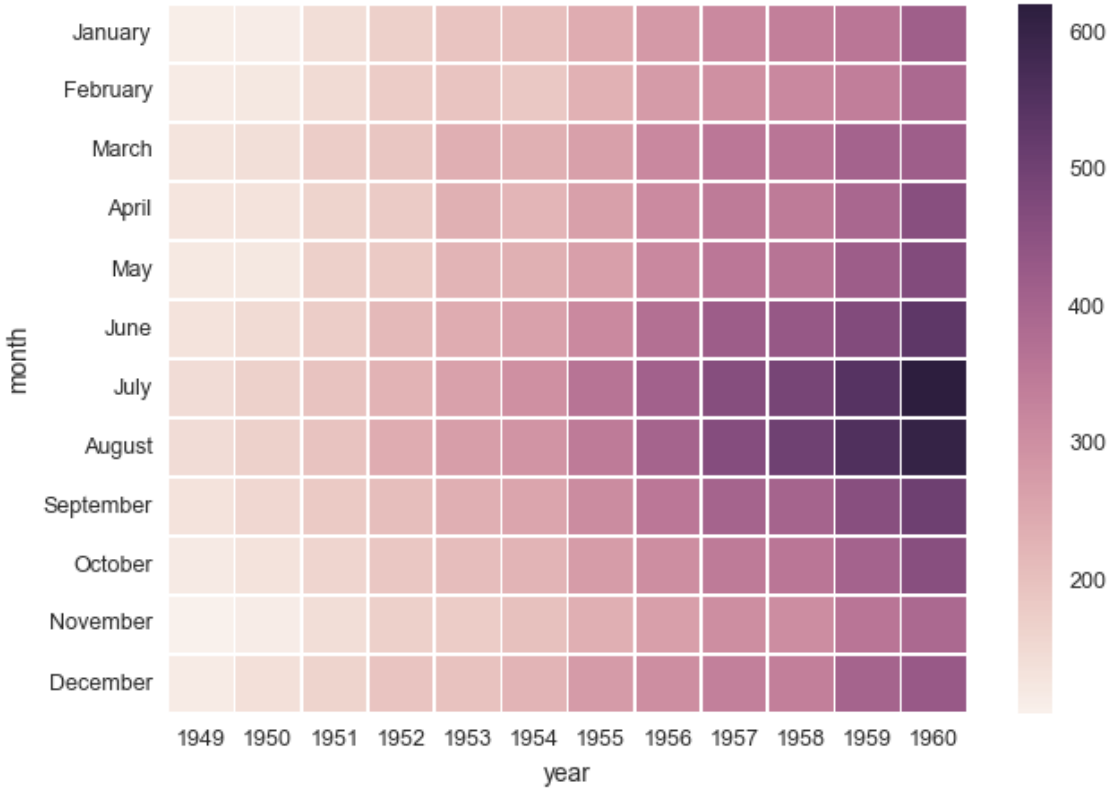


Annotate each cell with the numeric value using integer formatting:

```
>>> ax = sns.heatmap(flights, annot=True, fmt="d")
```

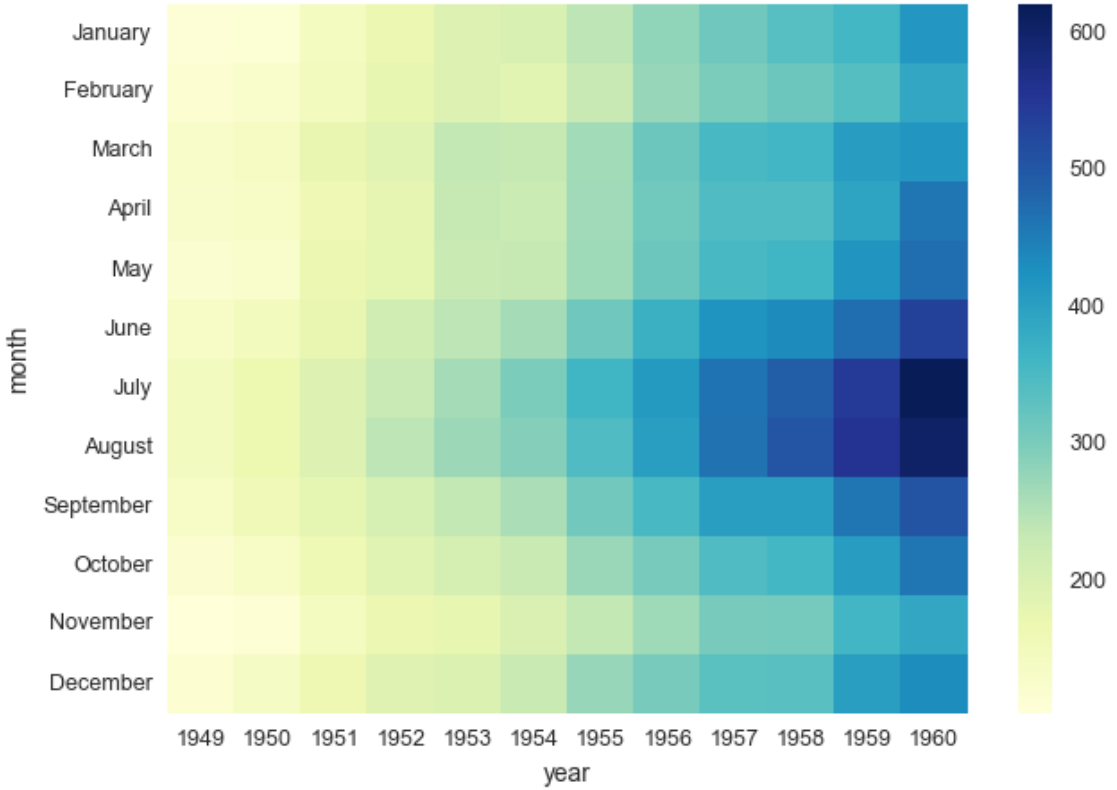
Add lines between each cell:

```
>>> ax = sns.heatmap(flights, linewidths=.5)
```



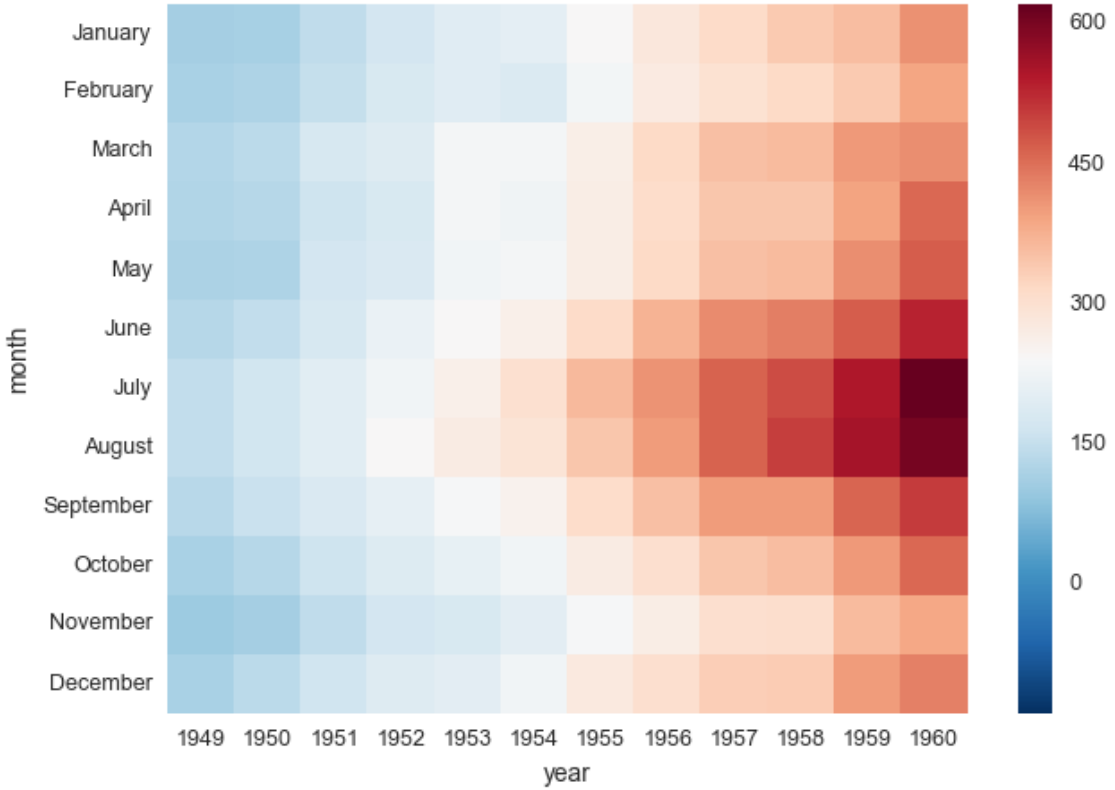
Use a different colormap:

```
>>> ax = sns.heatmap(flights, cmap="YlGnBu")
```



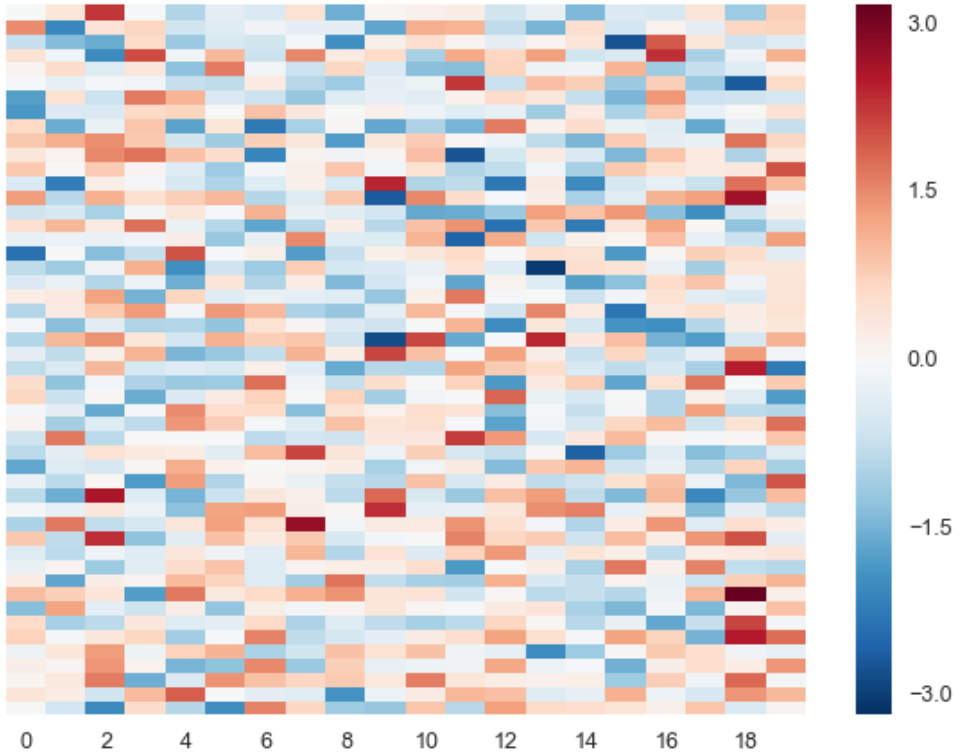
Center the colormap at a specific value:

```
>>> ax = sns.heatmap(flights, center=flights.loc["January", 1955])
```



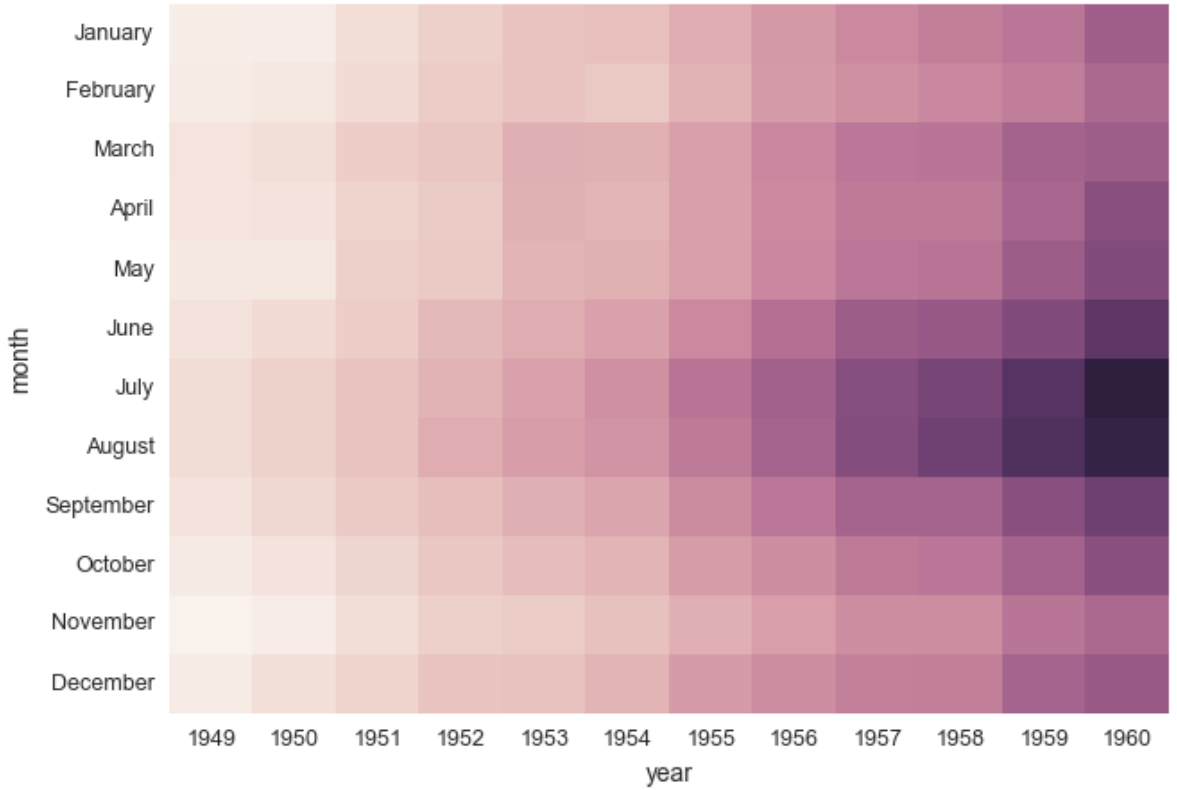
Plot every other column label and don't plot row labels:

```
>>> data = np.random.randn(50, 20)
>>> ax = sns.heatmap(data, xticklabels=2, yticklabels=False)
```



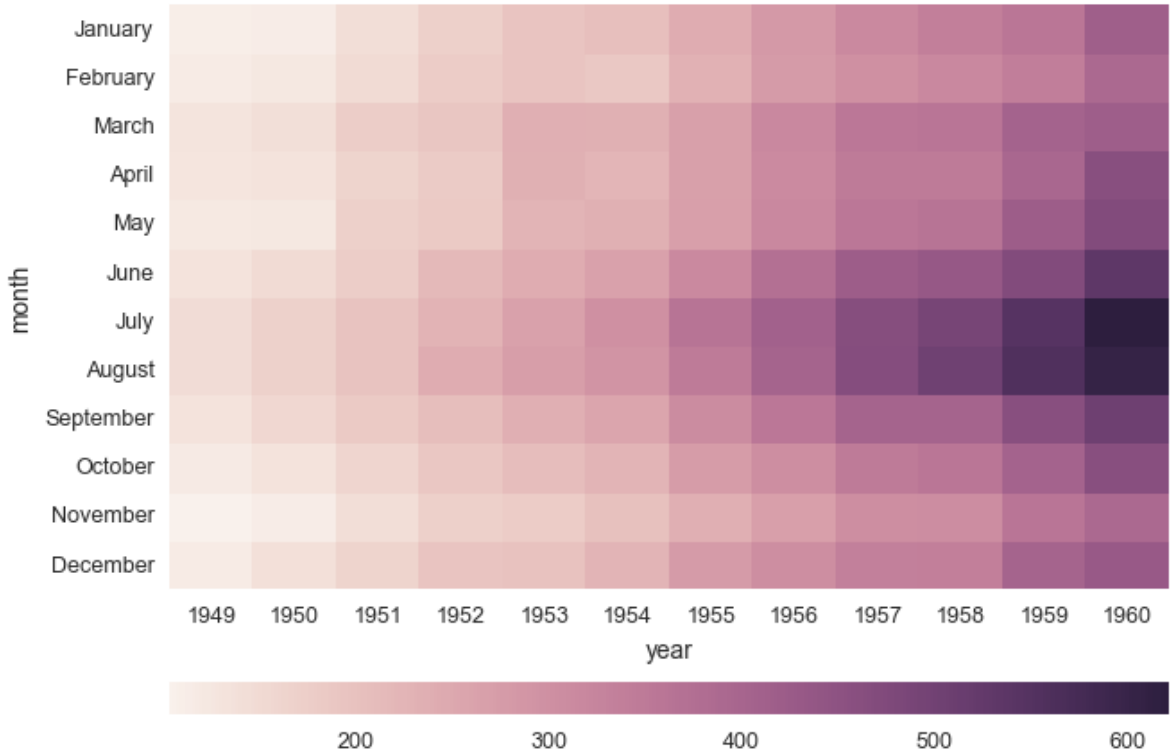
Don’t draw a colorbar:

```
>>> ax = sns.heatmap(flights, cbar=False)
```



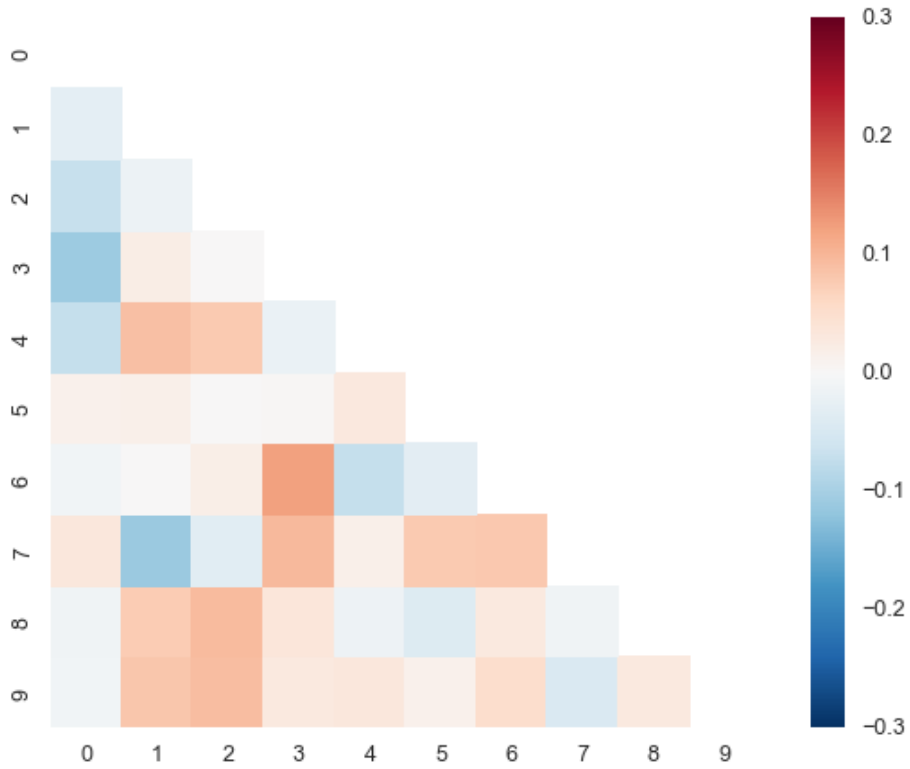
Use different axes for the colorbar:

```
>>> grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
>>> f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws)
>>> ax = sns.heatmap(flights, ax=ax,
...                  cbar_ax=cbar_ax,
...                  cbar_kws={"orientation": "horizontal"})
```



Use a mask to plot only part of a matrix

```
>>> corr = np.corrcoef(np.random.randn(10, 200))
>>> mask = np.zeros_like(corr)
>>> mask[np.triu_indices_from(mask)] = True
>>> with sns.axes_style("white"):
...     ax = sns.heatmap(corr, mask=mask, vmax=.3, square=True)
```



Source (../_sources/generated/seaborn.heatmap.txt)

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