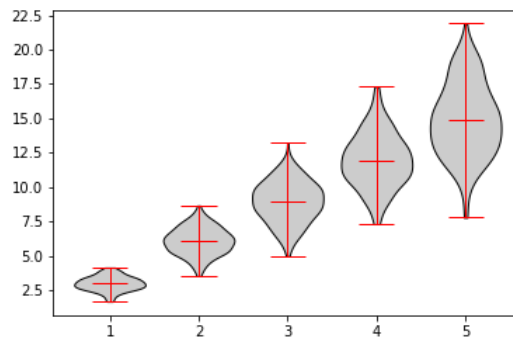


Figure 1: Violin plot



1 Violin plots

Violin plots are an alternative to box plots. They show the spread of data in the form of a distribution plot along the y axis. Some people love them. Others don't! See what you think.

```
import numpy as np
import matplotlib.pyplot as plt

%matplotlib inline

n_violins = 5
groups = np.arange(1,n_violins+1)

# Use Python list comprehension to build distributions
# Mean is i (group #), standard deviation is 0.5 * i
samples = [np.random.normal(3*i,0.5*i,250) for i in groups]

violins = plt.violinplot (samples,
                           groups,
                           points=300, # the more the smoother
                           widths=0.8,
                           showmeans=False,
                           showextrema=True,
                           showmedians=True)

# Change the bodies to grey

for v in violins['bodies']:
    v.set_facecolor('0.8')
    v.set_edgecolor('k')
    v.set_linewidth(1)
    v.set_alpha(1)

# Make all the violin statistics marks red:
for partname in ('cbars','cmins','cmaxes','cmedians'):
    vp = violins[partname]
    vp.set_edgecolor('r')
    vp.set_linewidth(1)

plt.show()
```