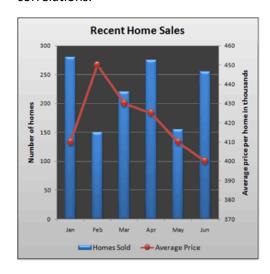# UNDERSTANDING DUAL-AXIS CHARTS

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GENERAL TOPIC
Data charts such as line charts, bar charts, and others can be enriched with dual y-axes. For example, one axes (one the left in the image below) can show the number of homes sold as a bar chart while the right y-axes uses a line chart to show the average price of the homes per month in a given year. While it is very space efficient to encode information overlayed such as in the example below it is unclear what the lie-factor of such a chart is – that is, to which extent people are able to correctly read the information from such charts and draw the right correlations.

INTERNSHIP TOPICS
While there are some recommendations of how to use dual-axis charts (e.g. https://datahero.com/blog/2015/04/23/the-dos-and-donts-of-dual-axis-charts/, https://www.perceptualedge.com/articles/visual_business_intelligence/dual-scaled_axes.pdf) they have not been empirically verified. The goal of this internship is to come up with some verified recommendations for dual-axis charts by running one or more user studies. This internship, if completed successfully, can lead to scientific publication.

REQUIREMENTS AND EXPECTATIONS
The student should have followed an HCI, Information Visualization, or Visual Analytics Course. Some knowledge on how to design experiments is a plus. Basic implementation skills for building the study software are also needed to complete this internship successfully.