

Dynamic Small Multiples

CS 448B: Data Visualization
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Integrating **interactive high-detail visualizations** with **dynamically generated small multiples**

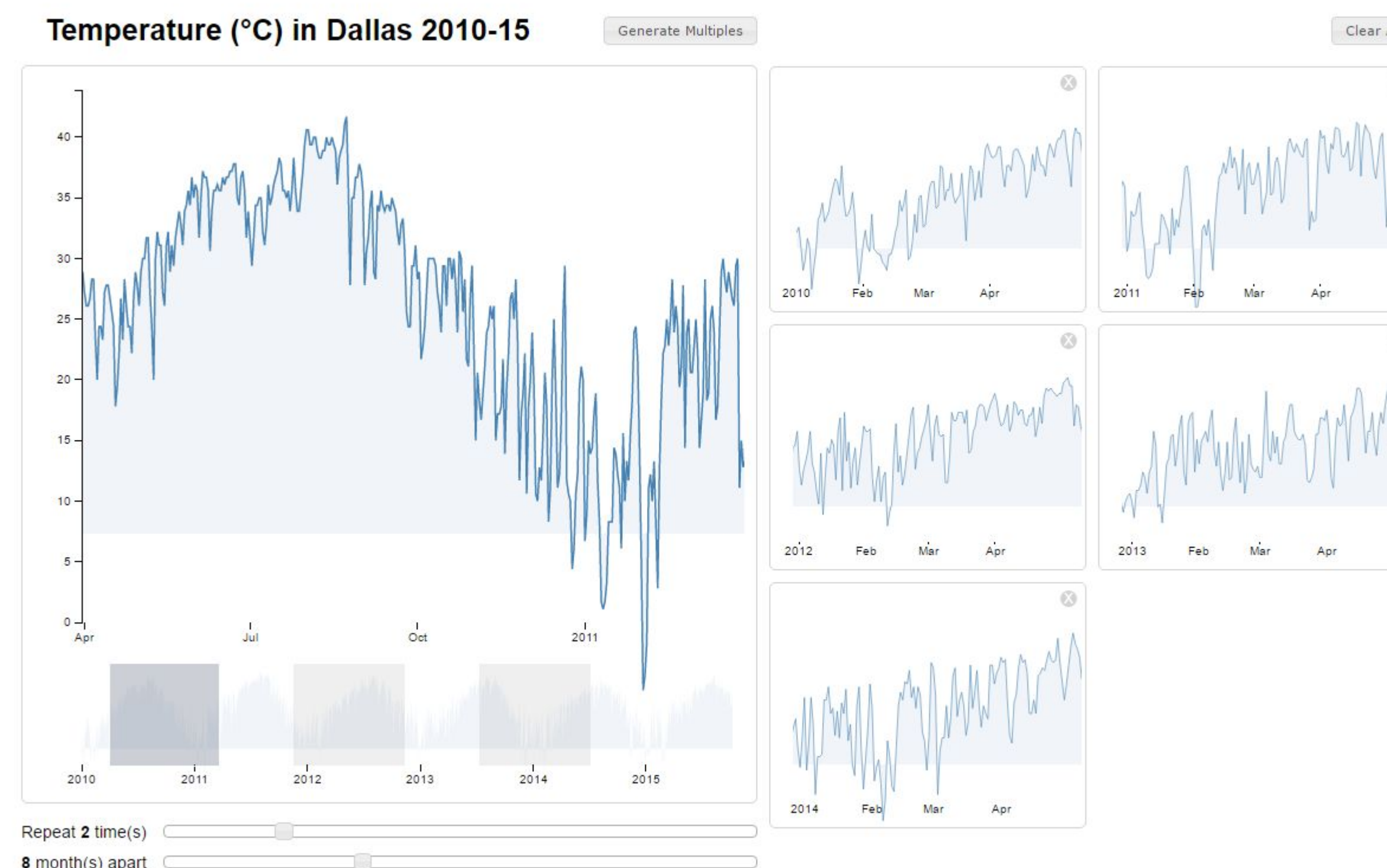
Problem

Small multiple time series sacrifice low-level detail in favor of overarching trends, while full-dataset visualizations lack the ability to compare distant points within a dataset.

Motivation

When analyzing a time sequence, users often want to compare intervals within the series, via small multiple data visualizations. At the same time, it's useful to be able to explore the dataset as a whole with a high level of detail.

The goal of this project was to design a system that seamlessly integrates small multiple visualizations with a large, interactive visualization of the entire dataset.



Future Work

- Integrating automatic sorting of small multiples along various dimensions, to better find trends.
- Adding the ability to visualize and compare multiple time series.
- Adding the ability to define multiples along different dimensions in order to analyze the dataset along various axes.

Approach

This dynamic small multiples system is composed of two portions, a *large visualization* of the entire dataset, and a *panel of small multiples*.

The large visualization is navigated by a direct manipulation interface, and hovering over the chart provides detail about specific points.

Users can generate small multiples *on the fly* by taking a "snapshot" of the current view and saving it in a small multiple. Small multiples may also be *automatically generated* by a specified by domain (the x-axis of the multiple) and interval (the space between multiples). These small multiples can then be deleted or rearranged as desired.