

Checkpoint IV: Second Prototype

Group: G20

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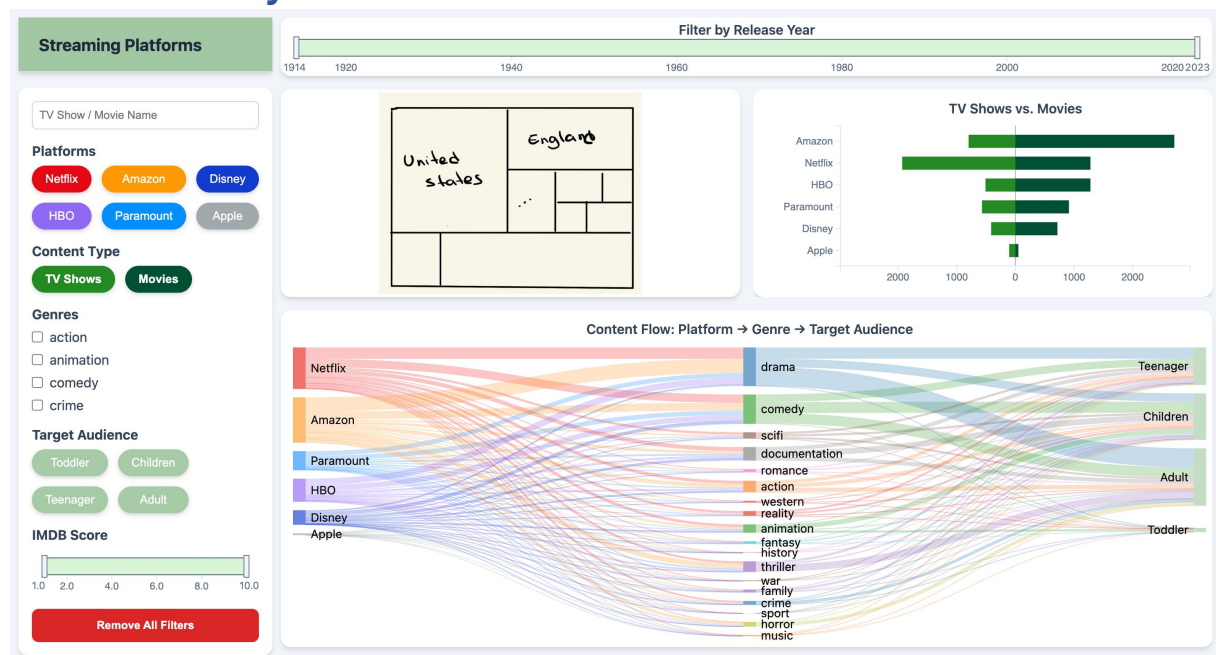
Prototype Architecture

For this checkpoint, we focused on refining the dashboard for better clarity and interactivity. Our core architecture remains the same, using a central *currentFilters* object and an *applyFilters* function to keep all visualizations in sync.

The main update was a significant change to our visualizations. We **removed** the 'Price Over Time' chart because we found its data was limited and not very informative, which also helped free up valuable space on the dashboard in addition we cleared some space at the top of the page and place the time filter there.

We **replaced** the old dot plot with a more effective and dynamic **butterfly chart**. This new chart is much clearer for comparing movie vs. TV show quantities.

Dashboard Layout



The Visualization Canvas (Right Column): This is the main area where the data is displayed. It is organized into a grid to organize the various charts:

- **Butterfly chart:** The primary visualization showing the changes in prices for the platforms over the years.

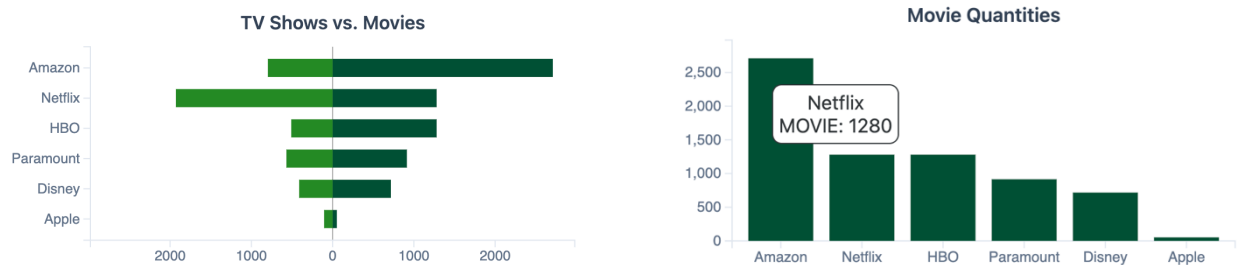
Data Processing

Our data processing occurs in two main stages: an initial cleaning and preparation step when the data is first loaded, and a dynamic, runtime aggregation step that reshapes the data for each specific visualization after filters are applied.

- **General Preprocessing for streaming prices:** Convert string fields, such as year and price, into numerical values and remove lines with years > 2023.
- **Butterfly Chart:** Bars are created for every platform selected, with the color corresponding to the content type, one for TV shows and one for movies, the corresponding axes are changed depending on the available data for the filters selected.

Chart Interaction

The Butterfly Chart:



Description: The Butterfly Plot shows the amount of content per platform, divided into TV Shows and Movies, each as a corresponding point.

The length of each bar corresponds to the total content in that platform, making it easy to spot the dominant platforms for the chosen filters.

- **Interactivity:** The chart supports interaction in two ways:
 1. **Global Filtering:** When a content type (e.g. Movies) is chosen the butterfly chart turns into a bar chart with a smooth animation, as for the rest of the filters are the same as explained on Checkpoint 3
 2. **Direct Inspection (Tooltips):** The diagram also supports direct interaction on its bars. When a user hovers their mouse over a line or point, a tooltip appears. This tooltip displays the exact quantity of content and the total content for that platform when hovering over a bar.

Chart Integration

All visualizations in the dashboard are linked using a **centralized, state-driven filtering model**. The mechanism works through the same three key components as described in Checkpoint 3.