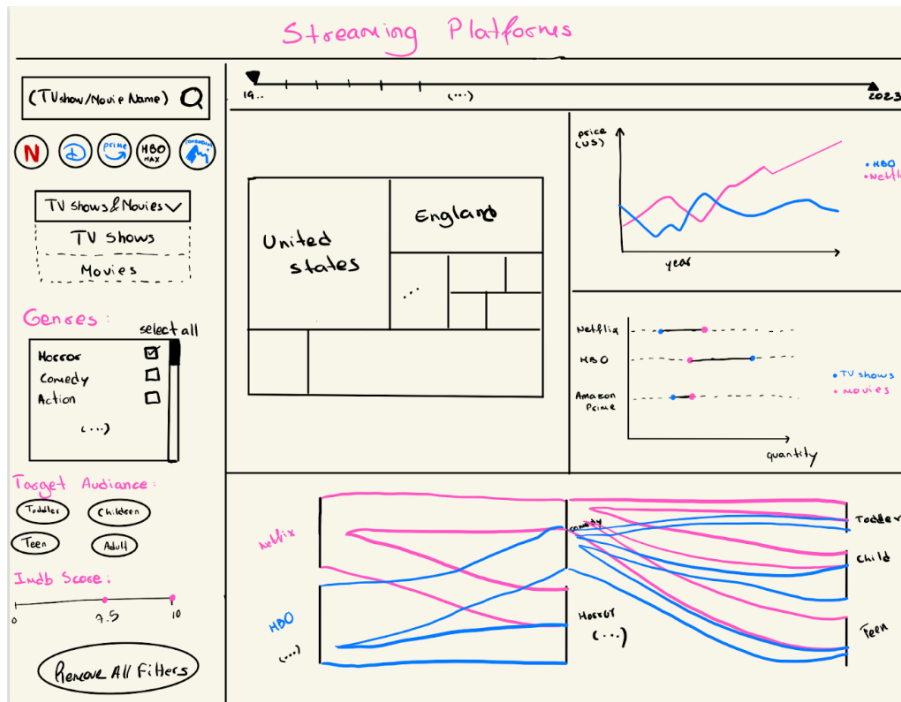


## Checkpoint II: Visualization Sketch

Group: G20

Date: 2025/09/25

### Dashboard Overview



The dashboard is designed to allow users to explore and compare streaming platforms (e.g., Netflix, Disney+, Prime Video, HBO Max, Apple TV+) across multiple dimensions: genres, target audiences, IMDb ratings, production countries, and subscription price trends. Users can filter by platform, year, genre, audience, and IMDb score to obtain tailored insights.

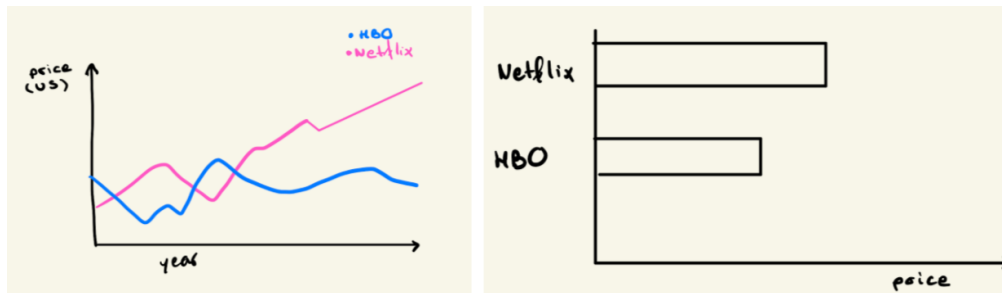
The layout is divided into:

- **Filters panel (left and timeline):** Platforms, genres, show type (movies vs. series), target audience, IMDb score slider.
- **Main visualization area (right):** Treemap for content origin, time-series charts for subscription prices and content volume, alluvial diagrams for genre vs. audience distribution, and comparative scatter/line plots for platforms.

Selecting different options in the filter panel causes the visualizations to update according to the chosen criteria. Values above the timeline also adjust to reflect the filtered data, such as the total amount of content. Interacting with the visualizations further refines the displayed information. For example, clicking on a specific country filters the analysis to include only TV shows or movies produced in that country, dynamically updating all relevant charts and metrics.

# Charts

## Chart #1



### Subscription Price Over Time

#### Marks and Channels

The idiom uses a line chart, with time (x-axis) and price (y-axis) as positional channels for the lines. Different platforms are encoded using the hue channel.

#### Rationale

A line chart is an effective idiom for showing trends over a continuous temporal dimension. The **position channel** is used for both year (x-axis) and price (y-axis), which are interval and ratio attributes, respectively. This allows for quick and accurate comparisons of price evolution. The **hue channel** is used to encode the platform, a **nominal attribute**, ensuring clear visual separation between the different services.

#### Interaction

Hovering on the bar or a point in the line shows the value corresponding to the price; Graph 1: Price trends for selected platforms and years; Graph 2: Snapshot for a specific year (bar chart view).

#### Alternatives Considered

A **grouped bar chart** was considered but was deemed less effective for this task. While useful for comparing discrete values, it is not as perceptually uniform as a line chart for visualizing long-term trends and showing the rate of change over time.

#### Chart Integration

Hovering on a point in the line chart highlights that point and displays the exact price for that year. The chart is linked with the filtering panel, and the user can select specific platforms to change the displayed lines. This also cross-highlights the selected platform in all other charts.

## Chart #2



### Content available per platform

#### Marks and Channels

This idiom uses a dot plot with lines connecting dots for the same platform. The y-position channel encodes the platform, a **nominal attribute**. The x-position channel encodes the number of titles, a **ratio attribute**. The **hue channel** is used to distinguish between movies and TV shows, which are **categorical attributes**.

#### Rationale

The **dot plot** is highly effective for this task because it leverages the **position channel** to encode a **quantitative value**, a highly perceptually uniform way for humans to make comparisons. This allows users to easily see and compare the total amount of content for each platform. The use of a distinct

hue for movies and TV shows ensures that the two sub-categories are clearly differentiated, supporting the user's task of comparing content types.

#### Interaction

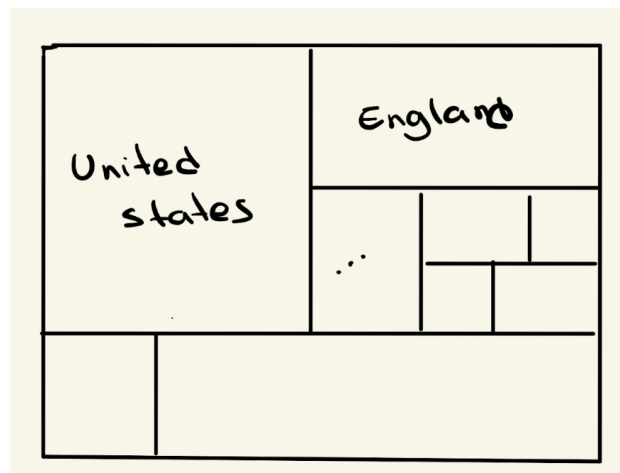
When hovering on a dot or line connecting dots of the same platform, the respective platform is highlighted, and the value for the amount of content is shown.

- Graph 1: Amount of content for selected platforms, IMDb score, and for both TV shows and movies
- Amount of content for selected platforms, IMDb score, only for TV shows (specified by the user)

#### Chart Integration

This chart is linked with the filtering panel and integrates with the other visualizations. For instance, selecting a specific platform in this chart would highlight it in the time-series chart and update the world map to show the production countries for that platform's content. It also pairs with the pricing chart to let a user explore a potential correlation between the total amount of content and a platform's price.

#### Chart #3



#### Geographic Distribution of Content

##### Marks and Channels

The idiom uses a **treemap**, where each rectangle represents a country. The **area size** encodes a quantitative attribute: the percentage of overall content that comes from each country.

##### Rationale

Shows which countries contribute more to the production of content for the different platforms.

##### Interaction

Hover for country-specific counts; linked with the filtering panel; click on the country to change data on other visuals to only reflect movies/TV shows produced in the selected country.

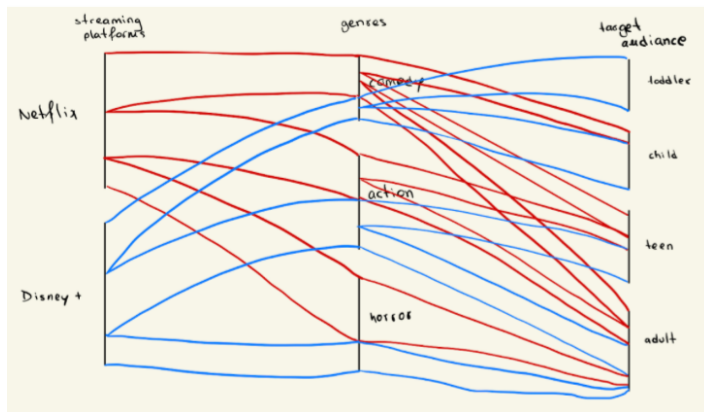
##### Alternatives Considered

A **bar chart** that ranks countries by their percentage of content was considered. However, while a bar chart would be excellent for precise comparisons of rank and quantity (leveraging the length channel), the **treemap** was chosen because it emphasizes relative proportions and provides an intuitive hierarchical breakdown within a compact layout.

#### Chart Integration

Linked with the filtering panel; Connects with other visuals to compare the content over the different regions.

Chart #4



### Genre vs. Audience Distribution per platform

#### Marks and Channels

Alluvial diagram with 3 attributes: streaming platform, genres, and target audience. Color distinguishes the platform, and the thickness of the bar determines the number of titles.

#### Rationale

The **Alluvial diagram** is the ideal choice here because it is specifically designed to show the flow and relationship between three or more categorical dimensions. It's a highly effective way to visualize how content volume is distributed from a platform, through different genres, and into a specific audience category. It leverages a powerful visual channel, thickness, to directly represent the quantitative value of titles, allowing for intuitive comparisons.

#### Interaction

The user can select specific platforms or audiences, changing the data shown on the other graphs, and hovering on the bars highlights flows for clearer comparisons.

#### Alternatives Considered

A **parallel coordinate plot** was an alternative, but it is better suited for continuous data and can become visually cluttered with too many categorical values. A series of **stacked bar charts** could also show this data, but it would not be as effective at visualizing the flow and connections between the three dimensions, making it harder to see how a platform's Comedy content, for example, is split between teen and adult audiences.

#### Chart Integration

Linked with the filtering panel; Connects with the other graphs to analyze how the content is distributed across the genres and target audiences.

## Answering the Questions

### Question 1: Between Netflix and Disney+, which one has more family-friendly titles?

To answer the question, the user needs to select both Netflix and Disney+ as the streaming platforms that they want to visualize, and then, looking at the alluvial diagram, they can see how much of the content from Netflix is for toddlers and children, and the same for Disney+, to find out which one has more.

### Question 2: What is the geographic distribution of production countries for content on Apple TV+ and Disney+?

To answer the question, the user would select both Disney+ and Apple TV+. With the help of the treemap, they would be able to see the proportion of content produced by each country for the two platforms. Larger rectangles represent countries with higher contributions, making it easy to identify the dominant production hubs (e.g., United States, England) while still showing smaller contributors in the same view.

### Question 3: Which platform has more Western movies and TV shows made between 1970 and 1990?

To answer the question, the user would select only Western for the genre, while also selecting the year interval to be between 1970 and 1990. Then, using graph 4, they can see which platform has the highest amount of content for the genre Western. If they want the specific amount, they can hover over the bar for each platform and see how many they have.

### Question 4: Between Amazon and Netflix, which one has more highly-rated shows (imdb\_score > 7.5)?

To answer this question, the user must choose Netflix and Amazon for the streaming platforms, then, on graph 3, they need to specify that they want the IMDb score to be between 7.5 and 10. With this, they can check the value associated with TV shows for both platforms and compare which one has more.

### Question 5: Is there a correlation between a platform's monthly subscription price and the number of high-rated (IMDb > 7.5) titles it offers?

To answer this question, the user needs to specify in graph 3 that they want to only visualize the amount for content that has an IMDb score between 7.5 and 10, and then they can compare the subscription price by looking at the line chart and seeing if the amount of content correlates to the price or not.

### Question 6: By how much has Netflix's subscription price changed since 2020?

To answer this question, the user needs to select Netflix in the streaming platforms and set the year range to be between 2020 and 2023 (the maximum), then they can use the line chart (graph 2) to see the evolution of the subscription price.

### Question 7: What was the streaming platform in 2023 where it was possible to watch Tarzan for the best price?

To answer the question, the user needs to filter by the name of the movie which in this case is Tarzan, which automatically will select only the streaming platforms containing that movie, then by selecting only the year 2023, they can use the price chart which because its a single year, will now be a bar chart, to check which one had the cheapest price.

## Storyboards

### How to answer question 5?

