DATA ANALYTICS

USING POWER BI

PROJECT REPORT

PIXAR FILMS ANALYSIS DASHBOARD

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1. INTRODUCTION

1.1 OVERVIEW

The **Pixar Films Dashboard** project represents a comprehensive **data analytics** initiative designed to explore and visualize the rich history and performance metrics of Pixar Animation Studios' filmography using **Power BI**, a leading business intelligence tool. Spanning from the groundbreaking release of *Toy Story* in *1995* to the recent success of *Inside Out 2* in *2024*, this project leverages a meticulously curated dataset maintained by software engineer *Eric Leung*. This dataset encompasses a wide array of details, including the creative contributors such as storywriters, screenwriters, directors, composers, and producers, alongside critical financial and critical reception data such as budgets, box-office earnings, return on investment (ROI), aggregate critic ratings, and Academy Award nominations and wins. By transforming raw data into an interactive and visually engaging dashboard, this project not only celebrates Pixar's legacy but also provides a robust analytical framework for understanding the factors contributing to its enduring popularity and commercial triumph in the animation industry.

1.2 OBJECTIVE

The objectives of the **Pixar Films Dashboard** project, utilizing **Power BI**, aim to analyze Pixar's film catalog by identifying the most successful films based on box-office earnings and cultural impact. Another key goal is to determine the highest return on investment (ROI) to assess financial efficiency. The project also seeks to analyze films with the most Academy Award nominations and wins, highlighting artistic excellence, and to associate directors and producers with top-performing films to recognize key creative contributors. These objectives collectively provide a concise yet insightful analytical overview of Pixar's achievements.

1.3 PROBLEM STATEMENT

- Determine which Pixar films are the most successful based on box-office revenue, audience reception, and cultural significance.
- Identify which Pixar film has generated the highest return on investment (ROI) to assess financial viability and efficiency.
- Ascertain which Pixar films have won or been nominated for the most Academy Awards to highlight artistic and technical achievements.
- Identify the directors and producers associated with Pixar's most successful films to recognize key creative contributors.

1.4 SOLUTION

To address the identified problem statement, an interactive dashboard has been developed using **Power BI**, providing a dynamic and comprehensive tool to analyze **Pixar Animation**

Studios' film performance. This dashboard resolves the challenge of determining the most successful Pixar films by integrating key metrics such as box-office revenue, audience reception, and cultural impact into visually engaging charts and KPI cards, allowing users to easily identify top-performing titles like *Inside Out 2* and *Toy Story*. This interactive dashboard empowers users with actionable insights through its responsive design and multi-dimensional data exploration features.

Our dashboard addresses key user questions such as:

1. Which Pixar films are the most successful commercially?

2. Which Pixar film has generated the highest return on investment (ROI)?

3. Which Pixar films have won or been nominated for the most Academy Awards?

4. Which directors and producers are associated with Pixar's most successful films?

2. DATA COLLECTION AND TRANSFORMATION

ETL (Extract, Transform, Load) PROCESS:-

2.1 DATA SOURCES: EXTRACT THE DATA

Our first step was to gather a comprehensive dataset that accurately reflects the **Disney Pixar Films dataset**. To do this we scraped data from multiple web sources, including open datasets from platforms like **Kaggle** and **Maven's Analytics**.

The data was gathered from a structured dataset maintained by software engineer *Eric Leung*, available as an **R package**. This dataset encompasses comprehensive information on all Pixar films, ranging from *Toy Story (1995)* to *Inside Out 2 (2024)*, and includes key details such as the creative contributors (*storywriters, screenwriters, directors, composers, and producers*), financial metrics (*budgets and box-office earnings*), return on investment (ROI), aggregate critic ratings (*IMDb, Metacritic, Rotten Tomatoes*), and Academy Award nominations and wins.

The dataset was imported into **Power BI** using the **Get Data** feature, ensuring all relevant tables were retrieved in their raw tabular format. This was done in **Power BI Desktop**. Now, in the **Home** tab, in the **Queries** section, we clicked on **Transform Data** option and then the **Power Query Editor** was opened, in which we performed transformation for the data.

2.2 DATASET DESCRIPTION

We gathered multiple interrelated datasets covering different attributes of Pixar films:

Dataset	Description
pixar_films	Core film info: title, release date, rating, description
box_office	Budget, revenue (US/International), ROI
public_response	IMDb, Metacritic, Rotten Tomatoes ratings
academy	Awards and nominations with results
genres	Genre classification per film
pixar_people	List of people (Directors, Writers, etc.)
people_link	Mapping between people and films

2.3 DATA TRANSFORMATION

After loading the datasets in **Power Query Editor**, we performed the following steps:-

Step1: We set the first rows as headers to standardize column names across tables, by **Use First Rows as Headers (in Home tab)** for each table.

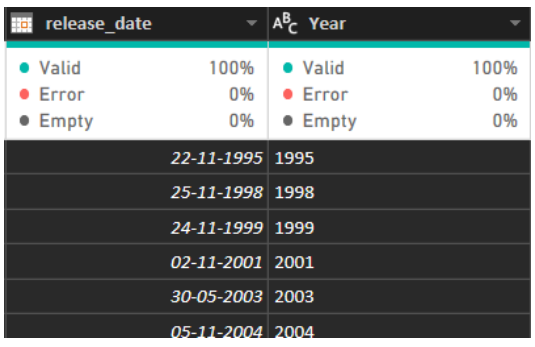
Step2: We removed blank rows to eliminate inconsistencies and improve data quality, by using **Remove Blank Rows** feature in **Remove Rows** dropdown list (in the **Home** tab).

Step3: Then we standardized data types (e.g., converted budgets and earnings to currency) and addressed missing values for completeness.

Step4: We extracted the *Year* column from the *release_date* column in the *pixar_films* table. To do this:

- Firstly, we selected the *release_date* column in the *pixar_films* table, then in the **Add Column** tab, in the **From Date & Time** section, we opened the **Date** dropdown list and selected **Year**.
- Then the **Year** column is added next to the last column of the table, and it is dragged and dropped right next to the **release_date** column from which it was extracted.

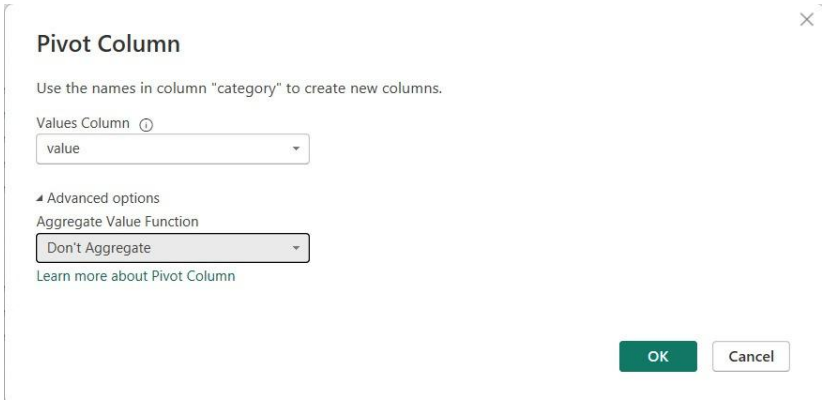
Result:



release_date		Year	
Valid	100%	Valid	100%
Error	0%	Error	0%
Empty	0%	Empty	0%
22-11-1995		1995	
25-11-1998		1998	
24-11-1999		1999	
02-11-2001		2001	
30-05-2003		2003	
05-11-2004		2004	

Step5: Then we pivoted data to reorganize categories and values for better structure and reduce the number of rows.

- In the **genres** table, we removed blank rows, then we selected **Category** column and used **Pivot Column (in the Transform tab)**.
- In the **Pivot Column** window, we selected **Value** field in the **Values Column's** dropdown list. Then we clicked on **Advanced Options** and selected **Don't Aggregate** in **Aggregate Value Function's** dropdown list.



- Then in the **Advanced Query Editor** (in the **Home** tab) write the formula:-

```
= Table.Pivot(#"Removed Blank Rows", List.Distinct(#"Removed Blank Rows"[Category]), "Category", "Value", each Text.Combine(_, ", "))
```

List.Distinct(#"Removed Blank Rows"[Category]) extracts unique *Category* values (*Genre*, *Subgenre*) to become new column headers. *Category* is the key column, and *Value* provides the data for these new columns. **each Text.Combine(_, " ")** merges multiple values into a single text string with spaces. This restructures the Pixar films dataset for easier analysis, supporting the dashboard's visuals.

Genres table before transformation:-

	Film	Category	Value
	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%
1	Toy Story	Genre	Adventure
2	Toy Story	Genre	Animation
3	Toy Story	Genre	Comedy
4	Toy Story	Subgenre	Buddy Comedy
5	Toy Story	Subgenre	Computer Animation

Genres table after transformation:-

	Film	Genre	Subgenre
	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%
1	A Bug'S Life	Comedy, Adventure, Animation	Quest, Computer Animation, Animal Adventure
2	Brave	Animation, Adventure, Action	Computer Animation, Coming-Of-Age, Sword & Sorcery, Teen Adventu...
3	Cars	Comedy, Adventure, Animation	Sport, Motorsport, Computer Animation
4	Cars 2	Animation, Comedy, Adventure	Spy, Car Action, Computer Animation, Crime, Motorsport, Sport
5	Cars 3	Adventure, Animation, Comedy	Car Action, Computer Animation, Motorsport, Sport
6	Coco	Drama, Animation, Adventure	Fantasy, Computer Animation, Supernatural Fantasy, Mystery, Music

2.4 LOADING THE DATA

In the **Power Query Editor**, we clicked **Close & Apply** to load the transformed data into the **Power BI Desktop**. We ensured that all transformations (e.g., pivoting, data type changes) were saved.

3. DATA MODELING

3.1 Access Model View

In the **Power BI Desktop** we navigated to the **Model View** from the left-hand pane, which provides a graphical interface to define and manage relationships between tables after the **ETL** process. We ensured all transformed tables (e.g., *pixar_films, academy, box_office, genres, people_link, pixar_people, public_response*) were loaded and visible in the model workspace.

3.2 Identify Fact and Dimension Tables

We designated the *pixar_films* table as the **fact** table, as it contains the core transactional data such as film details, budgets, and earnings, serving as the central hub for metrics and measures. Then we classified the remaining tables (*academy, box_office, genres, people_link, pixar_people, public_response*) as **dimension** tables, which provide descriptive attributes (e.g., awards, financial breakdowns, ratings, personnel) to enrich the analysis.

3.3 Establish Relationships

We created relationships between the **fact** table (*pixar_films*) and **dimension** tables using common keys.

S.No.	Relationship	Description	Cardinality	Cross Filter Direction
1	*pixar_films[film] → Box_office[film]*	Connects each film to its financial performance data (budget, box office).	1:1	Both
2	*pixar_films[film] → academy[Film]*	Links each film to its award nominations and statuses.	*1: * (One-to-Many)*	Single
3	*pixar_films[film] → genres[Film]*	Associates films with their genre and subgenre.	*1: * (One-to-Many)*	Single
4	*pixar_films[film] → public_response[Film]*	Maps each film to its IMDb, Metacritic, and Rotten Tomatoes scores.	1:1	Both

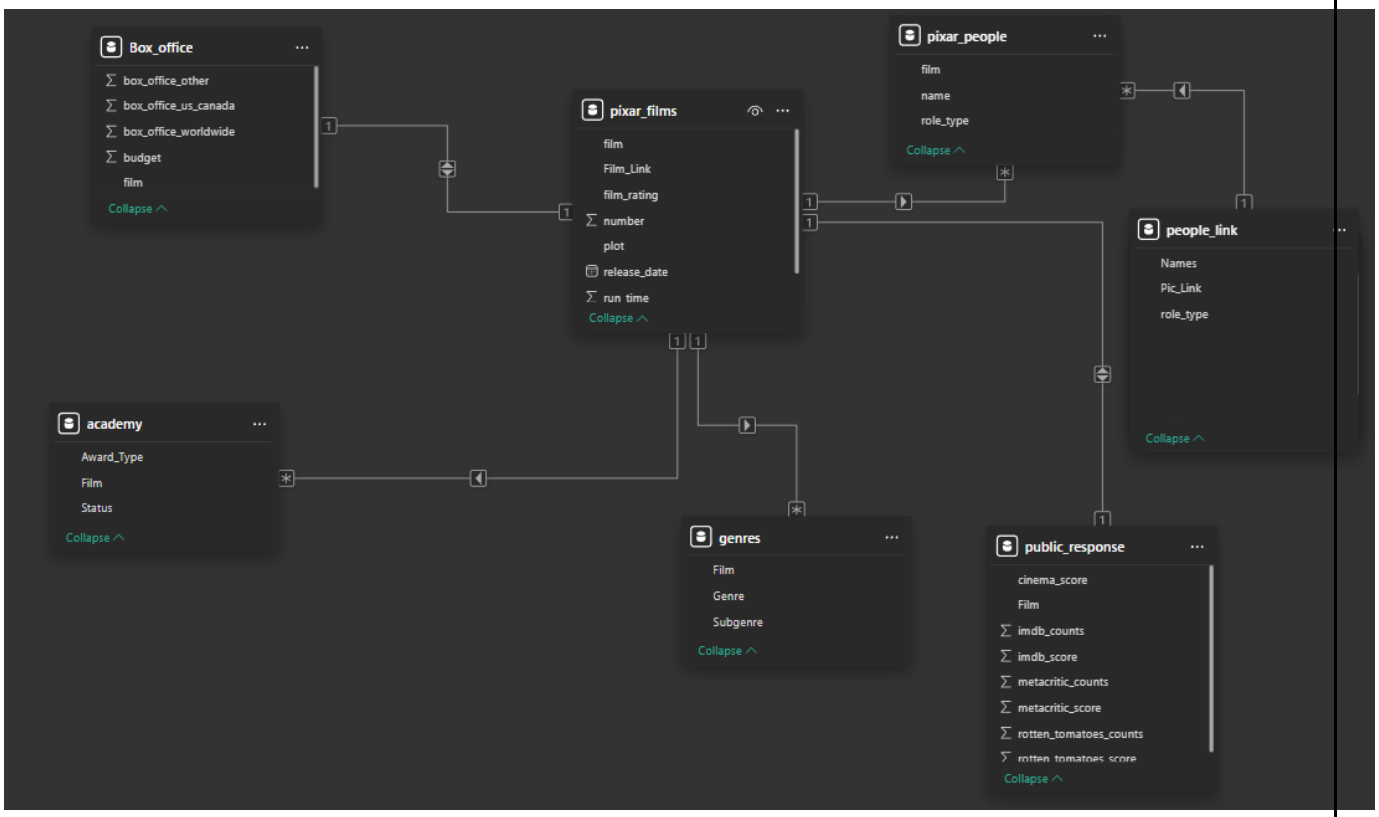
5	*pixar_films[film] → pixar_people[film]*	Associates people like writers/directors with the films they worked on.	*1: *(One-to-Many)*	Single
6	*pixar_people[name] → people_link[Names]*	Connects people to their profile details (images, roles).	1: *(One-to-Many)	Single

3.4 Configure a Snowflake Schema

We structured the data model as a **Snowflake Schema** by normalizing **dimension** tables (e.g., splitting *people_link* and *pixar_people* to reduce redundancy) rather than a **star schema**, allowing for more detailed and hierarchical data organization. We then verified that the schema supported complex queries by testing relationships and ensuring no circular dependencies or ambiguities existed.

3.5 Data Model Design

Power BI Model View showing relationships between core *film* data and supporting datasets such as *box office, public response, genres, awards, and people*.



4. DAX & ITS IMPLEMENTATION

4.1 Importance of DAX in Power BI

One of the key components that elevated the effectiveness and interactivity of our **Power BI dashboard** was the application of **Data Analysis Expressions (DAX)**. DAX is a powerful formula language used within Power BI to perform custom calculations and aggregations directly on data models. It enables the transformation of raw, static datasets into **dynamic, calculated insights** by supporting **calculated columns**, **measures**, and **calculated tables**. DAX played a critical role in helping us move beyond static visuals to build a responsive, insight-rich experience.

4.2 Purpose of Using DAX

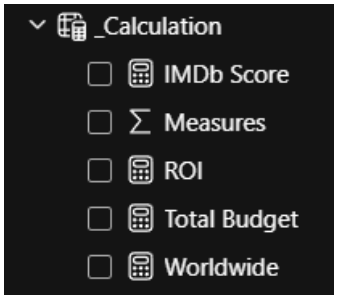
The primary goal of this project was to transform a diverse dataset of **Pixar films**—including financials, ratings, genres, awards, and crew data—into a fully interactive and analytical dashboard. The use of **DAX** became essential for:

- **Aggregating and summarizing key performance indicators**, such as total gross revenue, average IMDb ratings, total budget, net profit, and return on investment (ROI) per film.
- **Creating derived metrics** that were not directly available in the source data, such as award win counts, nominations, and genre-wise film totals.
- **Generating dynamic visualizations** that update based on user-selected filters like film title, genre, rating, or year.
- **Handling data reliability** by applying robust functions such as `DIVIDE()` to prevent divide-by-zero errors and `CALCULATE()` for context-specific filtering and time-based comparisons.
- **Supporting film-level drill-through analysis**, enabling detailed breakdowns of each film's performance, crew involvement, and public reception metrics.

4.3 DAX Measures and Calculations

For ease of use, a separate table named **_Calculation** has been created in the **Data** pane in **Report View** to centralize and manage all **DAX measures**, enhancing maintainability for the **Pixar Films Dashboard**. To create this table in **Power BI Desktop**, we selected **New Table** under the **Modeling** tab, then renamed it as **_Calculation**. This table stores the calculated metrics that power the **KPI cards**, reflecting metrics (e.g., *IMDb Score, ROI, Total Budget, Worldwide*). To create a **New Measure** in this table, we right-clicked the table and selected **New Measure,** and then input the **DAX** formula, ensuring it references the correct tables and columns (e.g., *box_office, pixar_films*) based on relationships.

Below are the DAX measures and calculations, inferred or confirmed from the context, along with their purpose in the KPI cards.



4.3.1 ***Box Office Worldwide Earnings*:-**

- **DAX Calculation**: *Worldwide = SUM(Box_office[box_office_worldwide])*
- **Explanation**: Aggregates total worldwide earnings from the *box_office* table, where Earnings reflects revenue per film linked via *film* field.
- **Why Used in KPI Card**: The value showcases Pixar's global success, offering a top-level financial performance metric.

4.3.2 ***Return on Investment (ROI)*:-**

- **DAX Calculation**: *ROI = AVERAGEX(Box_office, DIVIDE(Box_office[box_office_worldwide] - Box_office[budget], Box_office[budget]))*
- **Explanation**: Calculates the average ROI by iterating over the *Box_office* table, computing each film's ROI as (*worldwide* earnings minus *budget*) divided by budget, and averaging the results for a dynamic profitability metric in the KPI card.
- **Why Used in KPI Card**: The value highlights financial efficiency, offering stakeholders an immediate profitability insight.

4.3.3 ***Average IMDb Score*:-**

- **DAX Calculation**: *IMDb Score = AVERAGE(public_response[imdb_score])*
- **Explanation**: Calculates the average IMDb rating from the *public_response* table, where *IMDb* contains individual film scores.
- **Why Used in KPI Card**: The value provides a quick overview of Pixar's critical and audience reception, aligning with the dashboard's goal of showcasing quality.

4.3.4 ***Pixar's Total Budget*:-**

- **DAX Calculation**: *Total Budget = SUM(Box_office[budget])*
- **Explanation**: Sums the total production budgets from the *Box_office* table, where *budget* is the cost per film.
- **Why Used in KPI Card**: The figure provides context for earnings and ROI, aiding financial analysis.

5. DASHBOARD CREATION & VISUALISATION

5.1 DESIGN AND LAYOUT

The canvas was set up in **Power BI Desktop's Report View** by renaming the page titled **Overview**. In the **Visualisations** pane, we switched to the **Format page** and in **Canvas Settings**, the layout was structured in a 16:9 aspect ratio (995x1600 pixels), a standard widescreen format suitable for presentations and desktop viewing, ensuring compatibility across devices. In the **Wallpaper** section, the color was set to #C499CA. The page was divided into distinct zones: a top row for KPI cards, a central image panel, a top-right section for pie and donut charts, a middle-right area for a bar chart, a right-side panel for a tile slicer,

and a bottom-right section for a table. This arrangement maximizes screen real estate while guiding users through a logical flow from summary metrics to detailed insights.

The **Film Details** page of the **Pixar Films Dashboard** was established in **Power BI Desktop's Report View**, by duplicating the existing **Overview** page and renaming it **Film Details**. The main content area was adapted to focus on a specific film, featuring a central image of the film's poster with a brief synopsis, a *Pixar People* table listing key contributors with profile pictures, a 100% stacked column chart for showing award status, and a bottom navigation bar with film selection buttons, all mirroring the Overview page's design.

5.2 OVERVIEW PAGE

5.2.1 *KPI Cards*

Overall Design:-

All **four KPI cards** share a uniform design to ensure a cohesive look: a 10-pixel border radius softens edges, and a 2-pixel dark gray (#333333) outline adds definition. The gradient purple background (#800080 to #DDA0DD) ties them to the #C499CA wallpaper, reinforcing Pixar's brand. The layout is horizontally aligned with 10-pixel gaps, totalling approximately 1240 pixels wide across the 1280-pixel canvas, leaving 20 pixels for margins. We also uploaded some icons for the respective cards. This design enhances usability by providing a quick, scannable summary while supporting the dashboard's interactive nature through slicer-driven updates.

1. ***Total Worldwide Earnings :-***

This KPI card displays the aggregate *box-office earnings* of all *Pixar films* worldwide, offering a high-level indicator of the studio's global financial success. The displayed value is **$17 billion**, reflecting the cumulative revenue across films from *Toy Story (1995)* to *Inside Out 2 (2024).*

2. ***ROI (Return on Investment) :-***

This KPI card highlights the *average return on investment* across *Pixar films*, providing insight into financial efficiency and profitability. The displayed value is **318%**, indicating a strong average return.

3. ***Average IMDb Score:-***

This KPI card presents the *average IMDb rating*, serving as a measure of *Pixar films*' critical and audience reception quality. The displayed value is **7.54**, representing the mean rating across all films.

4. ***Total Budget :-***

This KPI card shows the *cumulative production budget* for all *Pixar films*, providing context for earnings and ROI calculations. The displayed value is **$4.6 billion**, reflecting the total investment.

5.2.2 *Centre Image Panel - Card*

The **Centre Image Panel** on the **Overview** page is a key visual element, centrally located on the canvas, designed to enhance engagement by displaying a dynamic **film poster** (*e.g., A Bug's Life).* Sized at 429x711 pixels with a 20-pixel margin, it uses the **Image** visual to fit posters (2:3 aspect ratio) without distortion, updating via the tile slicer's *pixar_films[Film_Link]* column and *Film* relationships. It bridges data and narrative, fulfilling the goal of showcasing Pixar's creative output alongside metrics.

Steps to Add Image to the Card:-

To enhance the KPI card with film imagery, the following steps were implemented to integrate images into a new card visual:

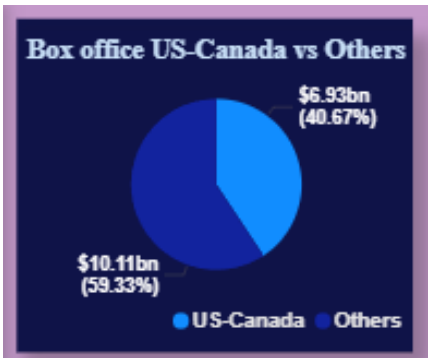
- **Create New Card**: Added a new **Card** visual from the **Visualizations** pane onto the canvas.
- **Data Pane Configuration**: In the **Data** pane, selected the *pixar_films* table and dragged the *Film* field into the **Data** field well of the card visual.
- **Enable Images**: Switched to the **Format** pane, toggled **Images** to **On**, and set **Image URL** to a dynamic expression by clicking **fx** (fx button), entering the *first film's link* (*e.g., a URL from Film_Link*) as a default.
- **Table View Adjustment**: In the **Table view**, we clicked on *pixar_films* table, went to **Column Tools**, and set the **Data Category** to **Image URL** for the *Film_Link* column to recognize it as an image source.
- **Callout Settings**: In the **Format** pane under **Callout Values**, turned **Value** and **Label** to **Off** to focus solely on the image.
- **Card Limit**: Set **Max Cards** to **1** to display a single image per card, aligning with the film selection.

- **Card Formatting**: Under **Format** > **Cards**, selected **Shape** as **Rounded Rectangle** to match the dashboard's aesthetic, with a **5-pixel corner radius** for a softened look.

These steps integrate a film poster into the KPI card, enhancing visual appeal and context, while the **Centre Image Panel** remains the primary dynamic image source.

5.2.3 *Box-Office Earnings - Pie Chart*

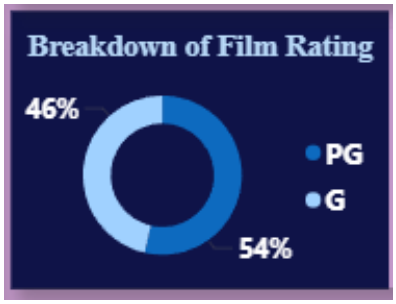
The **Pie Chart** on the **Overview** page, is a 202x250-pixel visual that breaks down **box-office earnings** into *US-Canada* and *Other* regions using data from the *box_office* table.



We selected the **Pie chart** visual from **Visualisations** pane. In the **Data** pane, selected the *box_office* table and dragged the *box_office_us_canada* and *box_office_other* field into the **Values** field well of the visual, updating dynamically to reflect global revenue trends.

5.2.4 *Breakdown of Film Rating - Donut Chart*

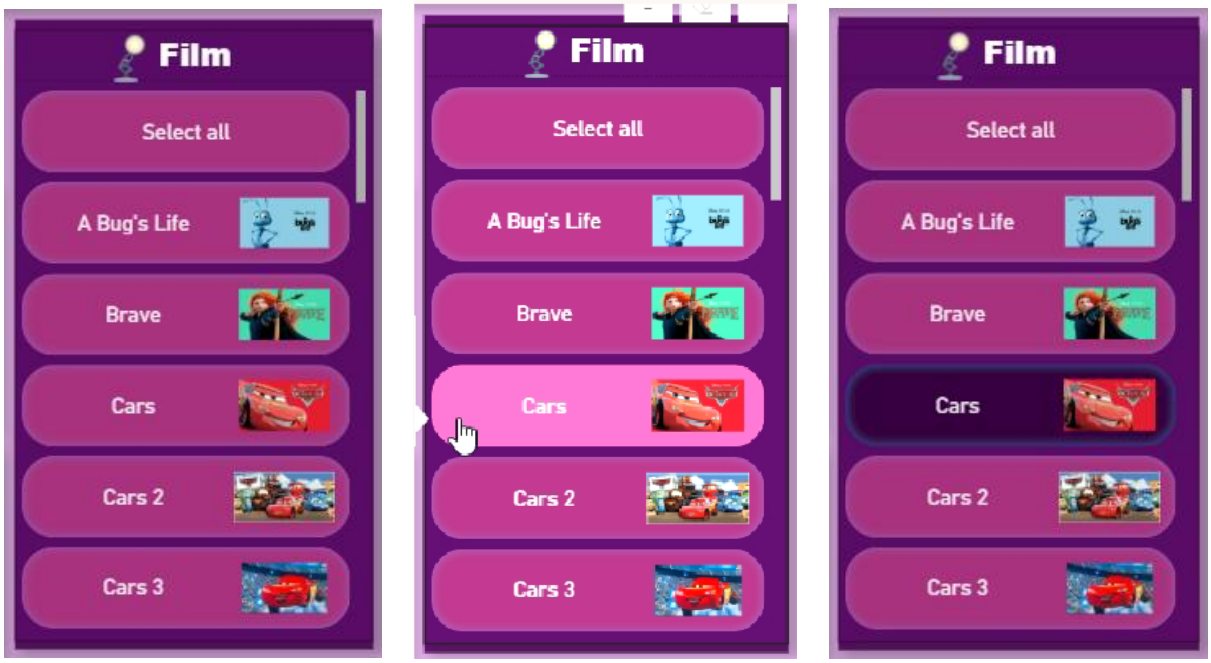
The **Donut Chart** on the **Overview** page, positioned below the Pie Chart, is a 171x252-pixel visual designed to display the distribution of **Pixar film ratings** (**G** and **PG**). This chart draws data from the *pixar_films* table, with *pixar_films* [*film_rating*] defining the segments (**G** and **PG**) and *Count of film_rating* in the **Values** well calculating the percentage of films in each category, reflecting a distribution such as **46% G** and **54% PG**.



The design enhances user understanding of audience suitability by associating each segment with a dynamic film poster from *the pixar_films[Film_Link]* column, linked through the tile slicer via *Film* relationships, adding a visual layer to the rating breakdown.

5.2.5 *Film Selector - Slicer*

The **Slicer** on the **Overview** page, positioned in the right-side panel, is a 515x302-pixel interactive visual designed to serve as the primary navigation tool for users to explore individual **Pixar films**. This slicer, configured in **Tiles** mode, leverages the *pixar_films* table, with the *pixar_films[Film]* field assigned to the **Field** well, enabling users to select from a list of films such as *A Bug's Life, Inside Out 2*, and *Brave*. Each tile, sized at 100x150 pixels with a 5-pixel gap, displays a dynamic film poster sourced from the *pixar_films[Film_Link]* column, enhancing visual recognition and linking to the *Film* relationships within the Snowflake Schema. This setup allows the slicer to trigger cross-filtering across all dashboard visuals, including KPI cards, charts, and the Center Image Panel, ensuring a cohesive and responsive user experience.



Rest State ***Hover State*** ***Selected State***

The tiles are arranged vertically with a scroll bar enabled for the full list of 30+ films, and a subtle hover effect (e.g., a lighter shade #E0E0F0) highlights the selected tile. This interactive element supports the project's objectives by facilitating easy access to film-specific data.

Steps for Slicer Configuration:-

To further customize the **Slicer** using the **Visualization** pane with a **Button Slicer** approach, the following steps were applied:

- **Switch to Button Slicer:** In the **Visualizations** pane, selected the **Button Slicer** option to transform the slicer into a button-based interface.
- **Layout Settings:** Adjusted the layout under the **Format** pane, setting **Max Rows** to **6** to display up to six buttons vertically, and **Columns** to **1** for a single-column arrangement.
- **Arrangement and Style:** Configured the **Arrangement** to **Single Column** and set the **Style** to **Cards** to maintain a card-like appearance for each button.
- **Images Configuration:** In the **Data** pane, added the *pixar_films* table and dragged the *Film* field to the **Items** well. Enabled **Images** under the **Format** pane, set **Image**

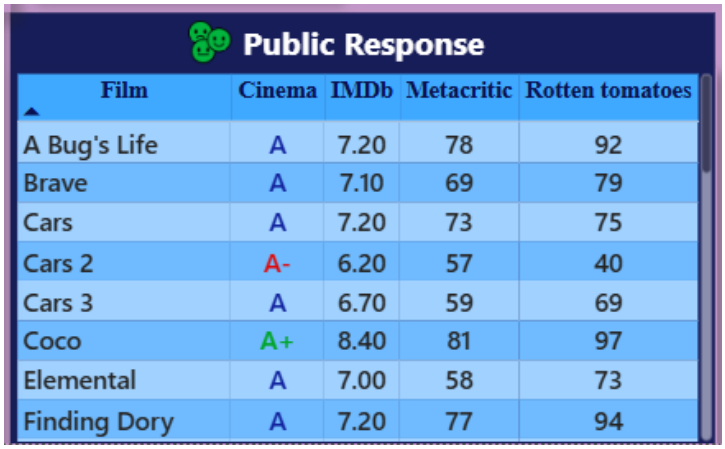
Fit to **Normal** to preserve poster proportions, and positioned images to **Right** with an **Image Area Size** of **30%** to balance text and imagery.

- **Border and Transparency:** Turned **Border** to **Off** for a seamless look and applied transparency settings under **Apply Settings To > State > Selected**, adjusting the transparency slider to **20%** for a subtle effect on the selected button.
- **Color Customization: Buttons > State**, configured **Hover** to set a color (e.g., #DDA0DD), **Selected** to a darker shade (e.g., #800080), and **Rest** to light purple (#E6E6FA) to provide visual feedback during interaction.

These enhancements refine the Slicer's functionality and aesthetics, ensuring an intuitive and visually appealing navigation experience.

5.2.6 *Public Response - Table*

The **Table** Visual on the **Overview** page, located in the bottom-right section, is a 316x592-pixel component designed to present detailed **public response metrics** for **Pixar films**. This visual draws data from the *public_response* table, displaying key columns to provide a comprehensive view of audience and critic feedback.



Film	Cinema	IMDb	Metacritic	Rotten tomatoes
A Bug's Life	A	7.20	78	92
Brave	A	7.10	69	79
Cars	A	7.20	73	75
Cars 2	A-	6.20	57	40
Cars 3	A	6.70	59	69
Coco	A+	8.40	81	97
Elemental	A	7.00	58	73
Finding Dory	A	7.20	77	94

Aesthetically, the table enhances the dashboard's interactivity by updating dynamically with the tile slicer's film selection, reflecting real-time data such as *IMDb*, *Metacritic*, *and Rotten Tomatoes* scores. The design supports the project's objective of analyzing film quality by offering a detailed, scannable format, complementing the summary provided by KPI cards and charts.

Steps to Configure the Table Visual:-

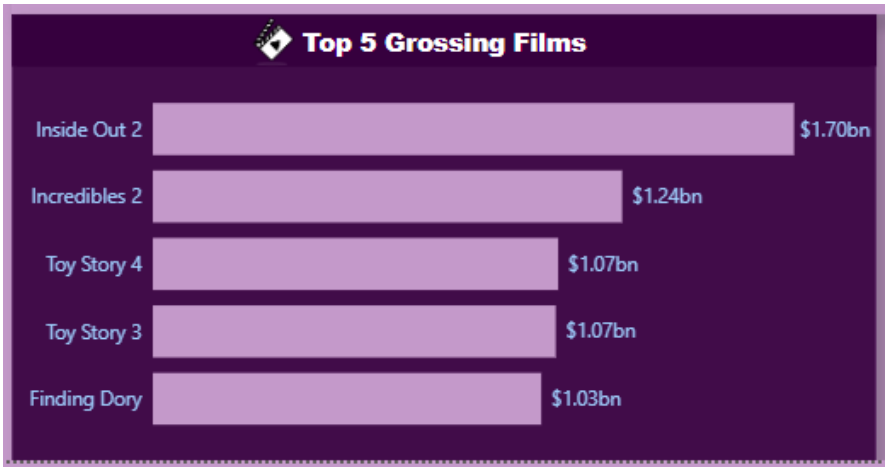
- **Add Table Visual**: Dragged a **Table** visual from the **Visualizations** pane onto the canvas and positioned it at the bottom-right.
- **Column Configuration**: In the **Data** pane, added the following fields to the **Columns** well: *Film, Cinema, IMDb, Metacritic, Rotten Tomatoes*, sourced from the *public_response* table, to display film-specific rating data.
- **Disable Totals**: Under the **Format** pane, navigated to **Values** and turned **Totals** to **Off** to avoid unnecessary summary rows.
- **Column Header Alignment**: Set **Column Headers** alignment to **Center** under the **Format > Column Headers** section for a balanced look.

- **Add Heading Text Box:** Inserted a text box from the **Insert** menu above the table, sized at 300x20 pixels, and entered the heading **Public Response** in 12pt bold dark purple (#800080) Segoe UI font, centered and with a 5-pixel margin from the table.

This configuration creates a functional and visually appealing table that enhances the dashboard's ability to deliver detailed insights into Pixar film ratings, supporting stakeholder analysis.

5.2.7 *Top 5 Grossing Films - Clustered Bar Chart*

The **Clustered Bar Chart** on the **Overview** page, positioned in the bottom-left section, is a 360x698-pixel visual designed to showcase the **top 5 grossing Pixar films** based on **worldwide box-office earnings**. This chart draws data from the *box_office* and *pixar_films* tables, with the *box_office[box_office_worldwide]* field assigned to the **X-axis** to represent earnings, and the *pixar_films[Film]* field on the **Y-axis** to list films such as **Inside Out 2, Incredibles 2**, and others. The chart's horizontal bars provide a clear comparison of financial performance, with bar lengths proportional to the **sum of worldwide earnings**. A **tooltip** feature displays the *Calculation[ROI]* value for each film, offering additional insight into profitability, enhancing user understanding when hovering over bars.



The chart's interactivity is enhanced by a filter applied via the **Filters** pane, set to **Apply Filter** with a **Top 5** condition, ranked by the ***Sum*** *of box_office_worldwide* to highlight the highest earners. Also to disable filtering from the slicer to make this chart static, in the **Format** pane in the ribbon tab, we clicked on **Edit Interactions** (this will show interaction icons on every visual on the page), clicked the **Filter icon (the None icon)** on the **Clustered Column Chart**. This visual supports the project's objective of identifying top-performing films, providing stakeholders with a concise yet impactful view of Pixar's box-office achievements.

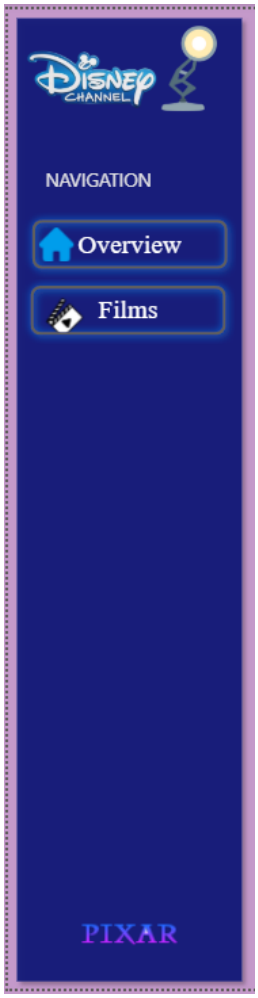
5.3 NAVIGATION PANEL

The **Navigation Panel** on the **Pixar Films Dashboard**, located on the left of the canvas (e.g., 996x246 pixels), is an interactive feature for navigating between **Overview** and **Films** pages. Designed to enhance usability, it aligns with the #C499CA wallpaper and Pixar's purple theme. It includes icons (e.g., home, film reel), a 150x50-pixel *Disney/Pixar logo* at the top,

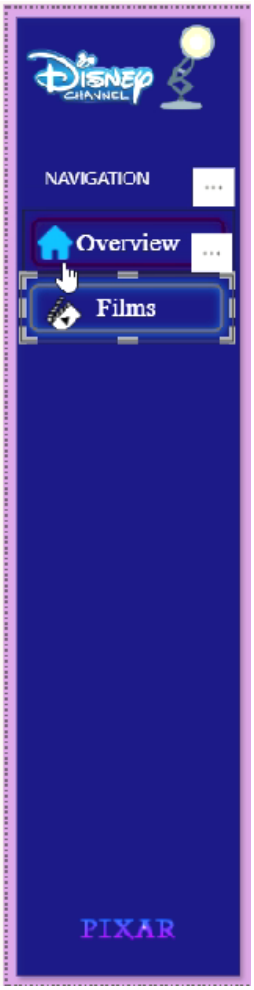
and **buttons** for **Overview** and **Films** with hover (#DDA0DD) and selected (#800080) states. This panel supports real-time navigation.

Steps to Create the Navigation Panel:-

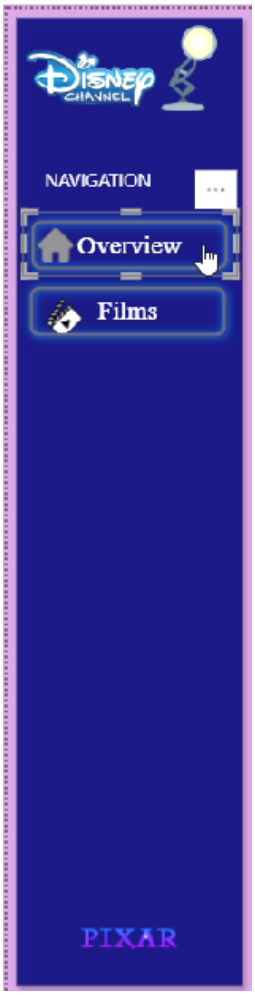
- **Insert Navigation Icons:** Went to **Insert → Image**, uploaded icons (*e.g., home, film reel*), and resized to 40x40 pixels with a 5-pixel gap.
- **Add Labels (Text Boxes):** Added text boxes via Insert → Text Box, entered *Overview* and *Films* in 12pt dark gray (#333333) font, sized at 100x20 pixels.
- **Add a Logo:** Used **Insert → Image** to upload the *Disney/Pixar logo* (150x50 pixels), placed at the top with 5-pixel margin.
- **Add Navigation Buttons:** Selected **Insert → Button → Blank**, added icons, renamed to *Overview* and *Films* (40x40 pixels), and set **Format** pane states: **Hover** to #DDA0DD, **Selected** to #800080, **Default** to #E6E6FA.
- **Enable Page Navigation (Overview Button):** Selected **Overview** button, went to **Format → Action**, turned **ON**, set **Type** to **Page Navigation**, and chose **Overview** as **Destination**.
- **Enable Page Navigation (Films Button):** Repeated for *Films* button, setting **destination** to *Films* page.



Rest State



Hover State

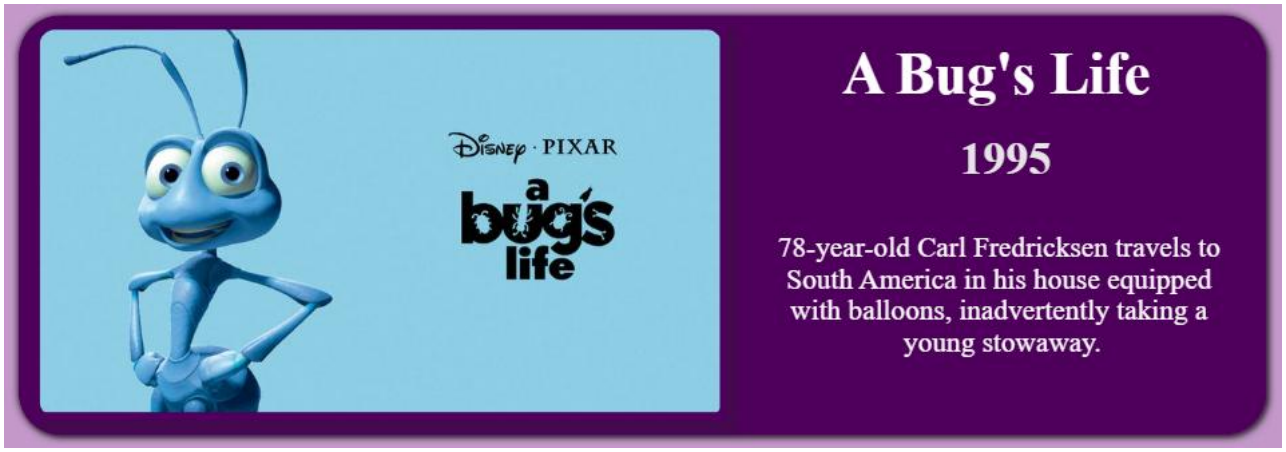


Pressed State

5.4 FILM DETAILS PAGE

5.4.1 *Film Poster with Description Cards*

The **Film Poster** was duplicated from the **Centre Image Panel** of the **Overview** Page. Sized at 408x712 pixels with a 20-pixel margin, it uses the **Image** visual to fit posters (2:3 aspect ratio) without distortion, updating via the tile slicer's *pixar_films[Film_Link]* column and *Film* relationships. Further, the Description Cards are set just adjacent to the film poster.



Steps to Create Film Description Cards:-

- **Add a New Card for Film Title**: Dragged a new **Card** visual from the **Visualizations** pane onto the canvas, positioning it near the Film Poster. In the **Data** pane, added the *pixar_films[Film]* field to the **Data field** well to display the film title. Under the **Format** pane, turned **Category Label** to **Off** to hide the field name, focusing on the value.
- **Add a New Card for Year**: Added another **Card** visual, placed below the **Film Title** Card. In the **Data** pane, added the *pixar_films[Year]* field, transformed to text format by going to **Transform Data**, selecting the *Year* column, and changing its data type to **Text** to ensure proper display. Under the **Format** pane, turned **Category Label** to **Off** to show only the year value *(e.g., "1995")*.
- **Add a New Card for Plot:** Added a third **Card** visual, positioned below the Year card. In the **Data** pane, added the *pixar_films[Plot]* field to the **Data field** well to display the film synopsis. Under the **Format** pane, ensured **Category Label** was **Off** to focus on the plot text.

5.4.2 *Pixar People - Table*

The **Pixar People** Table on the **Film Details page** of the **Pixar Films Dashboard** is a specialized visual component designed to provide detailed insights into the individuals contributing to Pixar films, enhancing the page's focus on film-specific data. Positioned below the Film Poster with dimensions of 211x596 pixels, this table leverages data from the *pixar_people* and *people_link* tables. The table displays contributor images, names, roles, and associated films, offering stakeholders a comprehensive view of key personnel such as directors, writers, and actors (*e.g., Donald McEnery for A Bug's Life*).

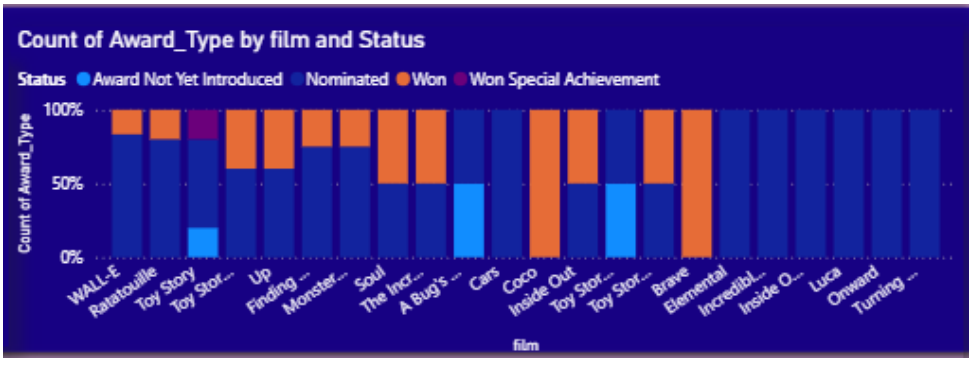
Steps to Create Pixar People Table:-

- **Add a Table Visual:** Dragged a new **Table** visual from the **Visualizations** pane onto the canvas, positioning it with a size of 211x596 pixels to fit below the Film Poster. Turned **Totals** to **Off** to focus on individual contributor details.
- **Add Fields:** In the **Data** pane, added the following fields to the **Columns** well: *people_link[pic_link]* for contributor images, *people_link[Names]* for names, *pixar_people[role_type]* for roles, and *pixar_people[film]* for associated films, drawing from the *people_link* and *pixar_people* tables via established relationships.
- **Set Data Category:** In the **Table** view, selected the *people_link* table, clicked on the *pic_link* column under **Column Tools**, and set the **Data Category** to **Image URL** to enable the display of contributor photos.
- **Apply Filter:** In the **Filters** pane, added a filter on *people_link[Names]*, deselected the **blank** option to exclude empty entries, ensuring only valid contributor names are included.

This setup creates an interactive and informative Pixar People Table, dynamically updating with the Slicer to reflect personnel data for the selected film, enhancing the Film Details page's depth and utility.

5.4.3 *Award Type by Film – 100% Stacked Column Chart*

The **100% Stacked Column Chart** on the **Film Details page** a specialized visual designed to illustrate the proportional distribution of **award types** received by Pixar films, emphasizing their recognition in the industry. Positioned adjacent to the Pixar People Table with dimensions of 244x691 pixels, this chart draws data from the *academy* table, linked to *pixar_films* via *Film* within the Snowflake Schema.



Steps to Create 100% Stacked Column Chart:-

Add a 100% Stacked Column Chart: Dragged a **100% Stacked Column Chart** visual from the **Visualizations** pane onto the canvas, positioning it with a size of 244x691 pixels.

Configure X-Axis: In the **Data** pane, added *pixar_films[Film]* to the **Axis** well to display individual films along the X-axis.

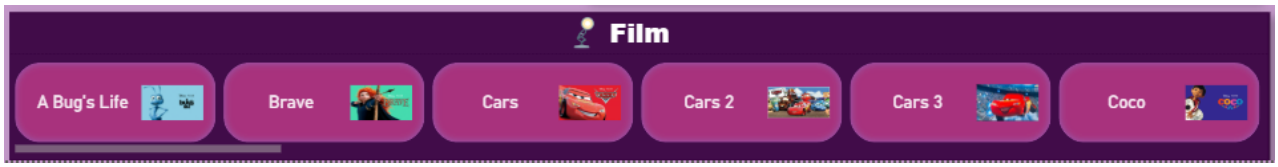
Configure Y-Axis: Added *academy[award_type]* to the **Values** well, set the aggregation to **Count** to calculate the number of each award type per film, and ensured the chart stacks these counts as percentages.

Apply Filter: In the **Filters** pane, added a filter on *academy[status]*, deselected **ineligible** to exclude non-qualifying awards, focusing on recognized achievements.

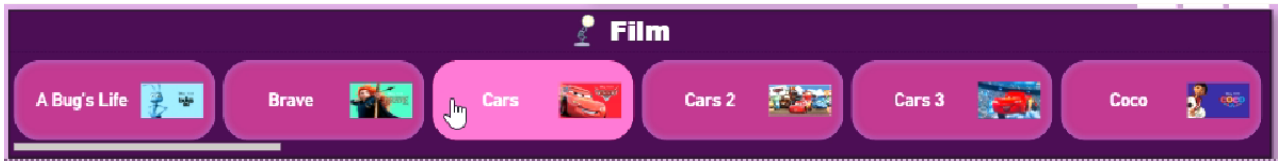
This configuration creates an interactive 100% Stacked Column Chart, updating with the Slicer to reflect award distributions for the selected film, enriching the Film Details page with award-related insights.

5.4.4 *Film Selector – Slicer*

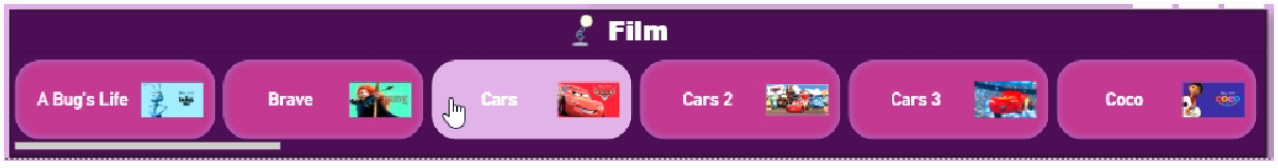
The **duplicated slicer** is now **repositioned at Bottom**. Dragged the slicer to the **bottom** of the canvas and resized to 152x1302 pixels to span the width with a single row. Under the **Format** pane, adjusted **Max Rows** to **1** to display all buttons in a single horizontal row, and set **Columns** to **automatically adjust** based on canvas width. This configuration repositions the Film Slicer as a bottom-row Button Slicer, enhancing the Film Details page's layout for efficient film selection and interaction.



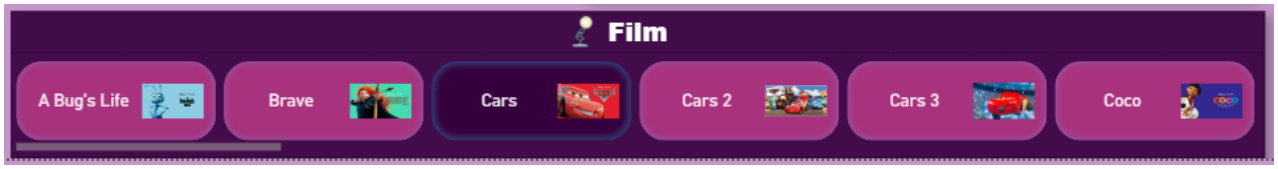
Rest State



Hover State



Pressed State

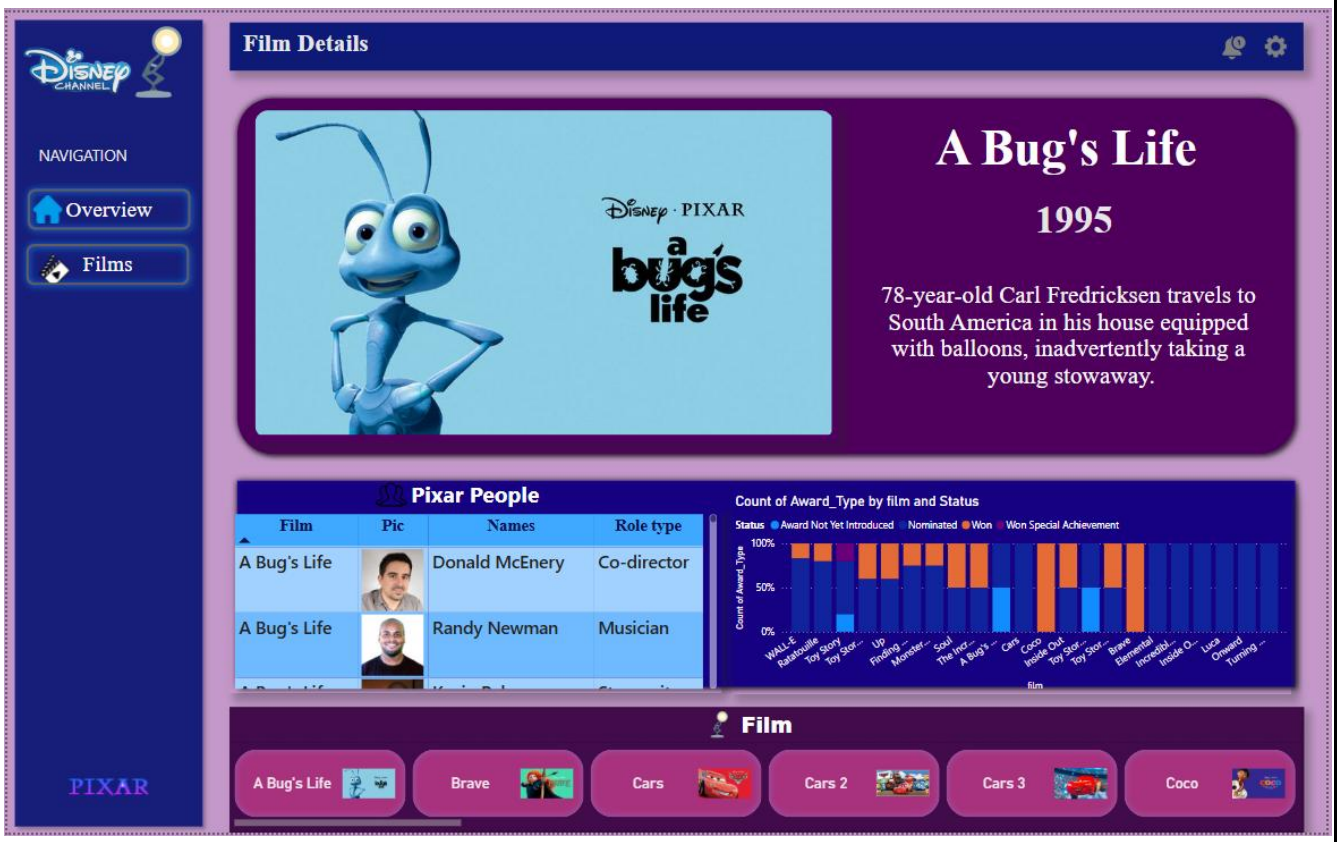


Selected State

6. CONCLUSION

The development of the **Pixar Films Dashboard** in **Power BI** represents a successful culmination of efforts to create an interactive, visually appealing, and data-driven tool that fulfills the project's objectives of identifying successful films, assessing financial efficiency, analyzing award trends, and recognizing key contributors. By transforming and modeling data from **Eric Leung's R package**, the dashboard delivers comprehensive insights through pages like the **Overview** and **Film Details**, featuring dynamic visuals such as **KPI cards, charts, slicers, and tables**.

The streamlined **Film Details page**, with its focused layout of the Center Image Panel, Table Visual, Film Description Cards, Pixar People Table, 100% Stacked Column Chart, and repositioned Film Slicer, provides an in-depth exploration of individual films, supported by real-time interactivity. This project not only showcases Pixar's impressive metrics—$17 billion in worldwide earnings, a 318% ROI, and a 7.54 average IMDb score—but also establishes a robust framework for stakeholders to make informed decisions, blending creativity with analytical precision.


Film Details
NAVIGATION
Overview
Films
PIXAR
A Bug's Life
1995
78-year-old Carl Fredricksen travels to South America in his house equipped with balloons, inadvertently taking a young stowaway.
Pixar People
Film
Pic
Names
Role type
A Bug's Life
Donald McEnery
Co-director
A Bug's Life
Randy Newman
Musician
Count of Award_Type by film and Status
Status
Award Not Yet Introduced
Nominated
Won
Won Special Achievement
Count of Award_Type
100%
50%
0%
film
Film
A Bug's Life
Brave
Cars
Cars 2
Cars 3
Coco