GROUP 1

Movies Analysis Project

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Table of contents

01
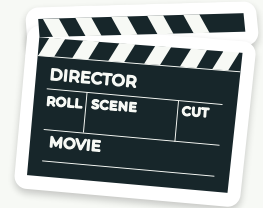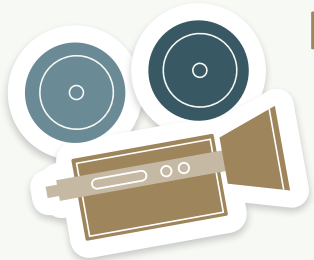Introduction

02
Business Understanding
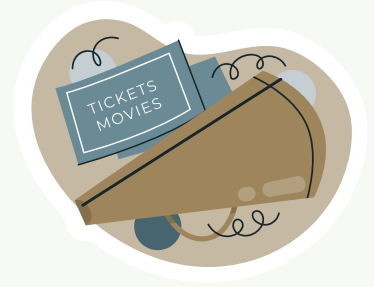
03
Data Understanding
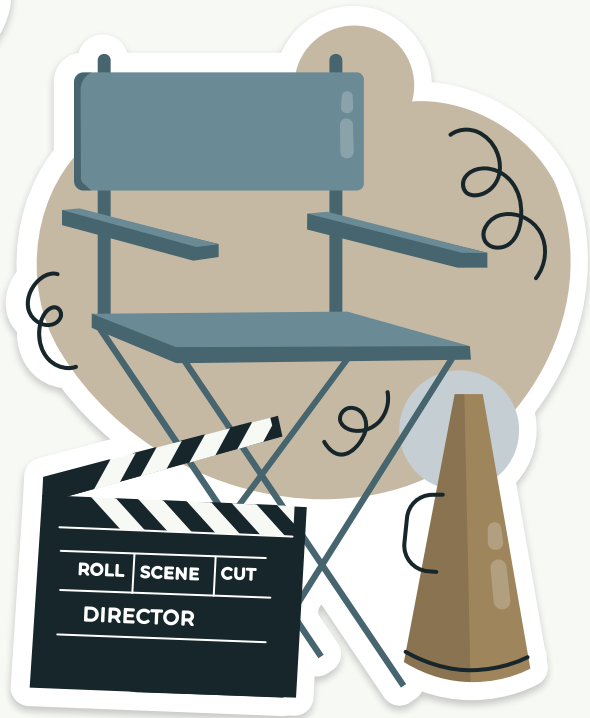
04
Data Analysis

05
Recommendation

06
Next Steps

01

Introduction

This project analyzes IMDB(Internet Movie Database) database and a Movie Budgets Dataset to identify what types of films perform best.

The goal is to provide data-driven insights on `movie genres`, `production budgets` and `release timing`that will guide the launch of a new movie studio for our company.

DIRECTOR CUT
ROLL SCENE
MOVIE

3

CINEMA
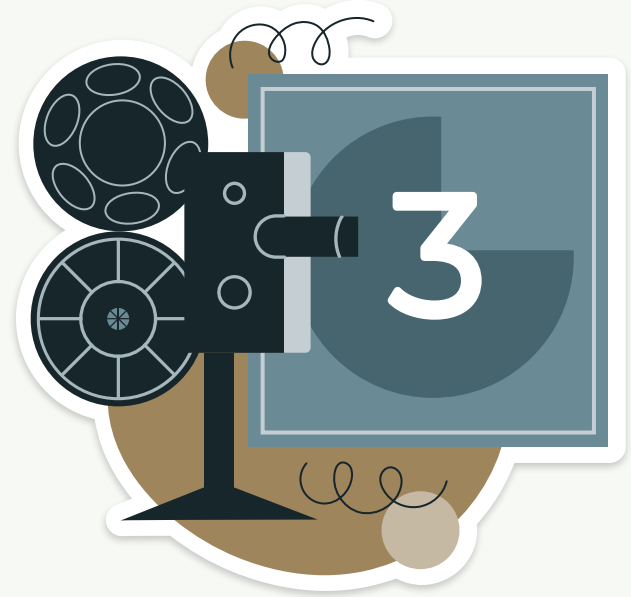
Business Problem

Your company now sees all the big companies creating original video content and they want to get in on the fun. They have decided to create a new movie studio, but they don't know anything about creating movies. You are charged with exploring what types of films are currently doing the best at the box office. You must then translate those findings into actionable insights that the head of your company's new movie studio can use to help decide what type of films to create
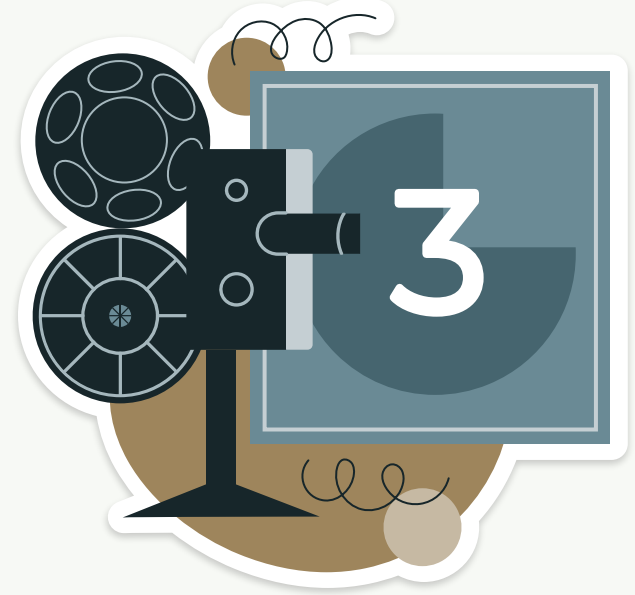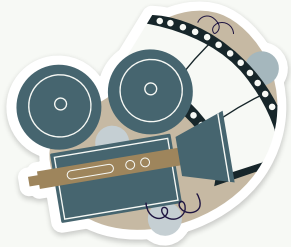
02

Business Understanding

The company's management wants to enter the movie production industry but lacks experience in identifying what types of films are most likely to succeed.

This analysis aims to support management by answering the following key business questions:

Key business Questions

1

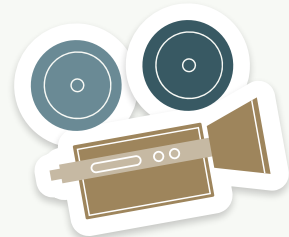1. Which movie genres are the most profitable and well-received by audiences?

2

2. Which genres perform well despite lower production budgets?

3

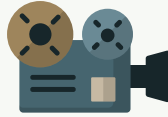3. Does the timing of a movie's release impact its box office performance?
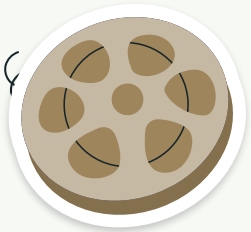
03

Data Understanding

The analysis uses 2 datasets (IMDB Database and Movie Budgets dataset) that provide complementary information about movies:

`The IMDB Database` :

- Movie Basics Table:
Contains movie titles,
genres, and release dates.

- Movie Ratings Table:
Includes average audience
ratings and number of
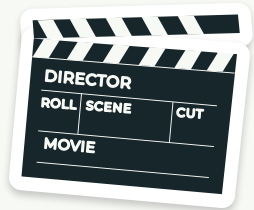votes for each movie.

`The Movie Budgets Dataset`:

- Provides production
budgets and the
revenue figures.

These datasets will be merged to create a unified view of each movie's genre, financial performance, audience reception, and release timing.

Data Analysis
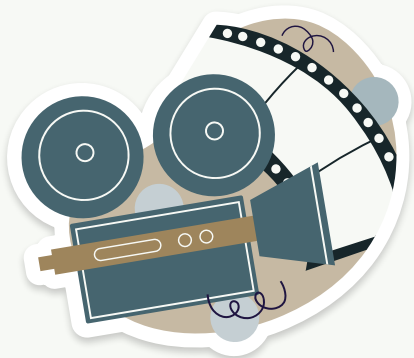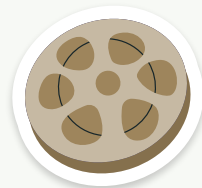
Process

Cleaning Movie Budget Dataset

Merging DataFrames

01 **02** **03** **04** **05**
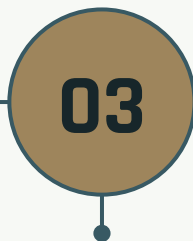
Loading the data into dataframes

Cleaning Movie Database

Generate a new feature

CINEMA

Q1: Profit-Ratings analysis

Top 10 Most Profitable Movie Genres with Rating >=7
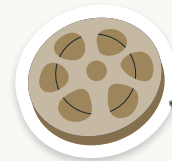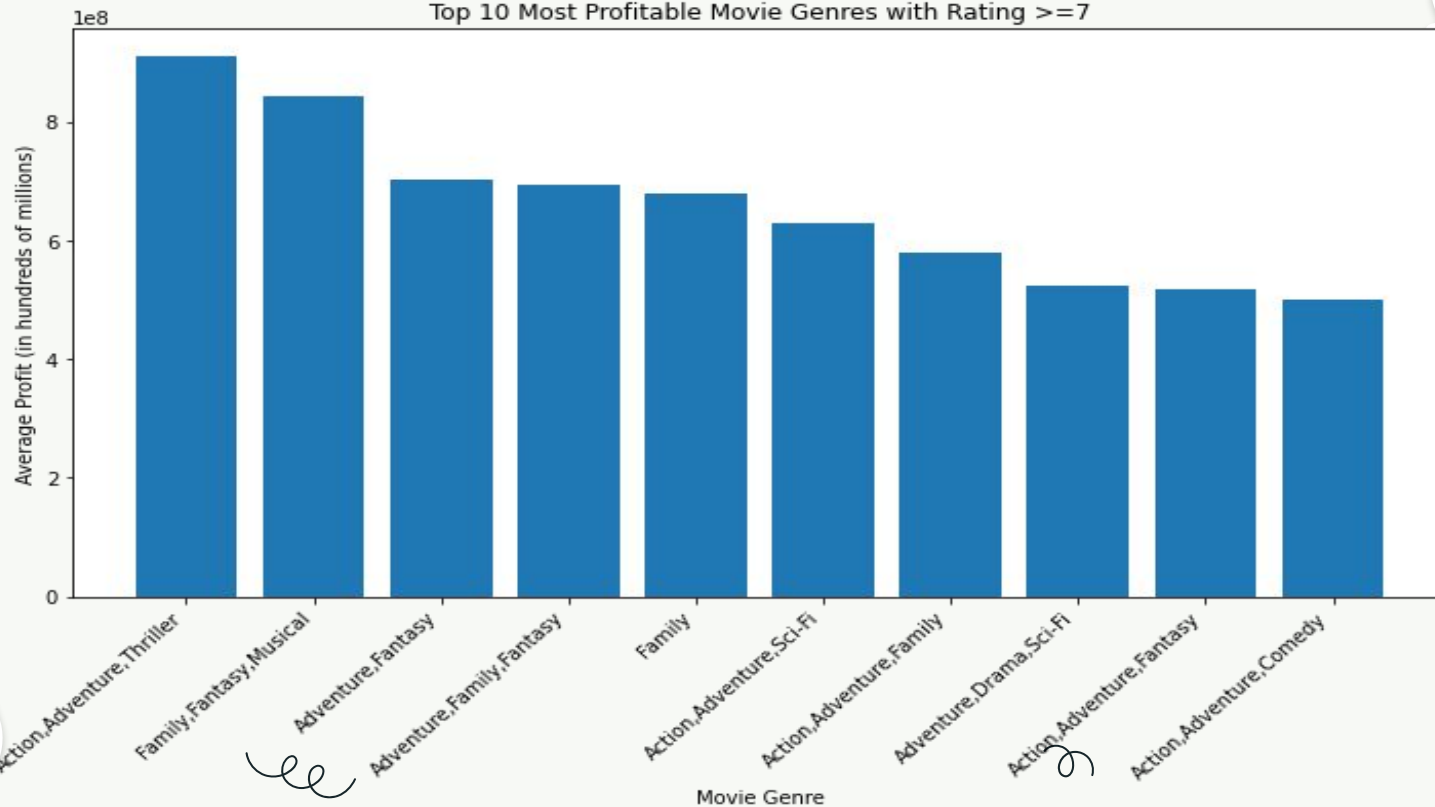
Key findings

1

Action-Adventure-Thriller leads profitability: This combination tops the list with $911M average profit among movies rated >=7, driven by broad appeal and potential.
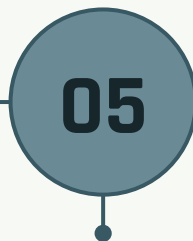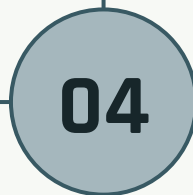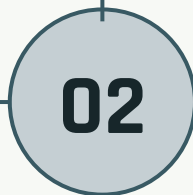
2

Family-Fantasy-Musical ranks second: Achieves $844M average profit, highlighting the strong commercial success of uplifting, family-friendly content with musical elements.

3

Adventure dominates top performers: Appears in 8 of the top 10 genre combinations, serving as a key driver of high profits through escapism and excitement.

4

Sci-Fi boosts profits: Combinations like Action-Adventure-Sci-Fi (approximately $630M) and Adventure-Drama-Sci-Fi (approximately $524M) show speculative elements enhance financial returns when paired with strong narratives.

MOVIE TONIGHT

CINEMA

Q2: Production Cost Analysis

Horizontal bar chart. Y-axis labeled "Genres" with categories from top to bottom: Comedy,Drama; Crime,Drama; Biography,Comedy,Drama; Drama; Drama,Romance; Drama,Thriller; Documentary; Action,Crime,Drama; Biography,Drama,Sport. X-axis labeled "Average Production Budget (Millions)" ranging from 0.0 to 2.5 (1e7).
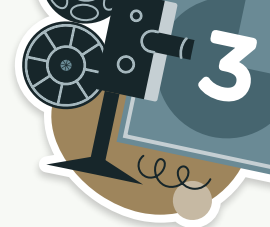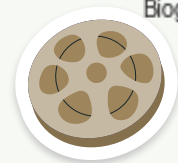
Q2: Production Cost Analysis
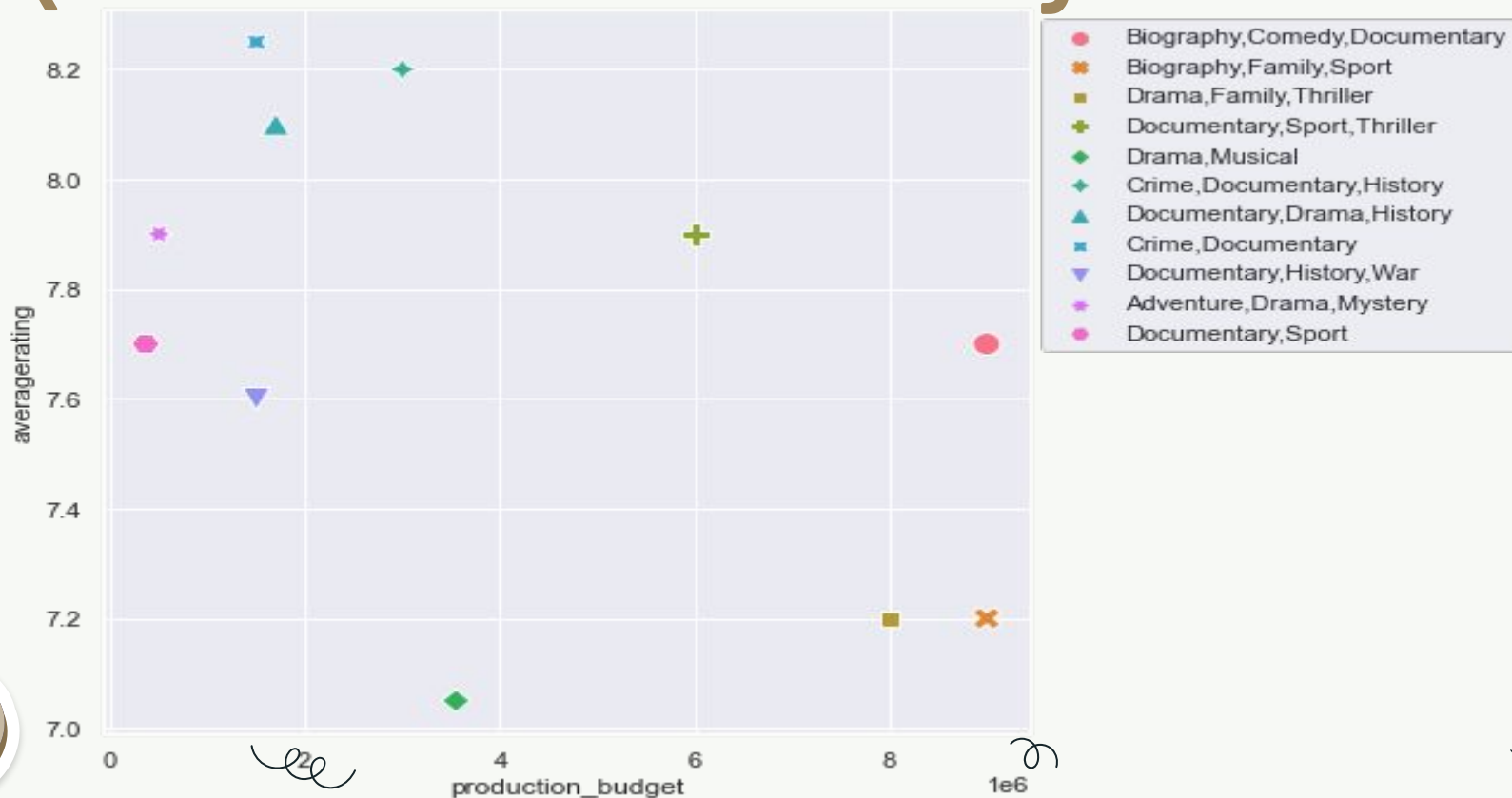
Key findings

1

From both visualizations, genres involving Documentary such as Documentary, Documentary–Sport, Crime–Documentary, and Documentary–History appear at the lowest end of the production budget axis while maintaining ratings well above 7.5.

2

Drama-focused films resonate well with audiences without requiring large financial investments. Emotional depth and narrative strength appear to be key drivers of success.

3

Higher production budgets do not guarantee higher ratings The scatter plot shows no strong positive relationship between budget and rating.

4

Multi-genre films tend to outperform single-genre films in cost efficiency Many of the high-performing data points represent genre combinations such as Comedy–Drama–Romance and Documentary–History–War.

Q3: Release Date Impact

Average Revenue by Release Month (in millions)

Average ROI by Release Month (%)

Q3: Release Date Impact

Average Revenue by Season

Season	Average Revenue ($M)
Summer	$86M
Spring	$81M
Fall	$58M
Winter	$56M

Number of Movies Released by Season

Season	Number of Movies
Winter	718
Spring	649
Summer	658
Fall	727

Q3: Release Date Impact

Quarterly Performance Comparison

Legend:
- Revenue ($M)
- ROI (%)
- Rating

X-axis: Q1 (Jan-Mar), Q2 (Apr-Jun), Q3 (Jul-Sep), Q4 (Oct-Dec)
Y-axis: Values

Success Rate by Month (% of movies with positive revenue)

Y-axis: Success Rate (%)
X-axis: Month (Jan–Dec)

Data labels:
- Jan: 63.4%
- Feb: 59.3%
- Mar: 58.3%
- Apr: 65.0%
- May: 64.8%
- Jun: 60.7%
- Jul: 62.8%
- Aug: 63.4%
- Sep: 56.8%
- Oct: 60.1%
- Nov: 70.1%
- Dec: 55.6%

Key findings

1

June leads with $123.3M average revenue per film.

2

The best season to release is during early Summer with average revenue at $86.2M

3

Highest success rate: Nov (70.2% of movies profitable)

4

September tails at $29.4M average revenue with 151% ROI

5

The worst season is during Winter with an average revenue at $56.1M
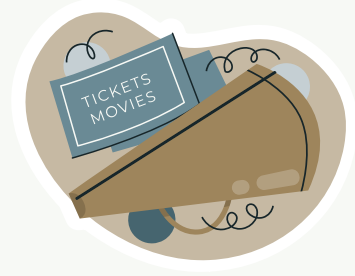
6

Lowest success rate: Dec (55.6% of movies profitable)

Recommendations

1

The company should allocate resources to developing and producing movies in the "Action, Adventure, Thriller" space, focusing on high-quality scripts to ensure ratings exceed 7.
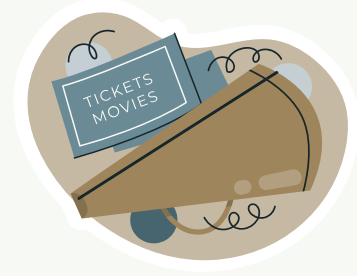
2

The company is advised to invest in family-centric musicals with fantasy elements, such as remakes of classic tales or original animated features.

3

The company should consider to diversify portfolios, by building films around Adventure cores, experimenting with additions like Family, Sci-Fi, or Fantasy to appeal to broader demographics.

Recommendations

4

On November which captures the 'Family Thanksgiving' and 'Award Season' crowds. The company should launch mid-budget dramas in November and low-budget Horror in October., this maximizes profit with significantly less financial risk.

5

During the summer peak when school is out and 'vacation spending' is at its annual peak, the company needs to invest heavily because success here requires a massive marketing to beat competitors.

6

The company should increase investment in documentary and documentary-hybrid genres

Next Steps

1

conducting market research on audience preferences for escapist stories and incorporating diverse casts to boost inclusivity, potentially increasing both ratings and profits

2

The company should partner with established directors known for blockbusters, aiming for global releases (as per the findings) to capitalize on the genre's proven profitability

3

The company should allocate more resources toward documentary-based projects, as the genres consistently receive high ratings while operating on very low budgets

Thanks!

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