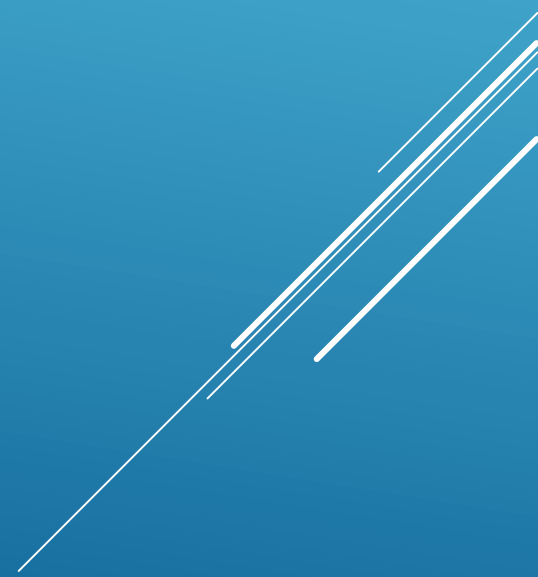



BOX OFFICE SUCCESS: A STATISTICAL APPROACH

- ▶ Presenter: Micka LOUIS
 - ▶ Cohort: Akademi— Data Science & AI, 2025
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PROJECT OVERVIEW

- ▶ Objective: Help a new film studio identify the most profitable types of films to produce.
 - ▶ Key Business Questions:
 - ▶ Which genres are most profitable?
 - ▶ Do high-budget movies have a strictly greater average profit?
 - ▶ Does runtime or popularity influence profitability?
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BUSINESS UNDERSTANDING

- ▶ The studio seeks data-driven insights to guide production strategies.
 - ▶ Business Goal: Maximize box office returns through targeted film production choices.
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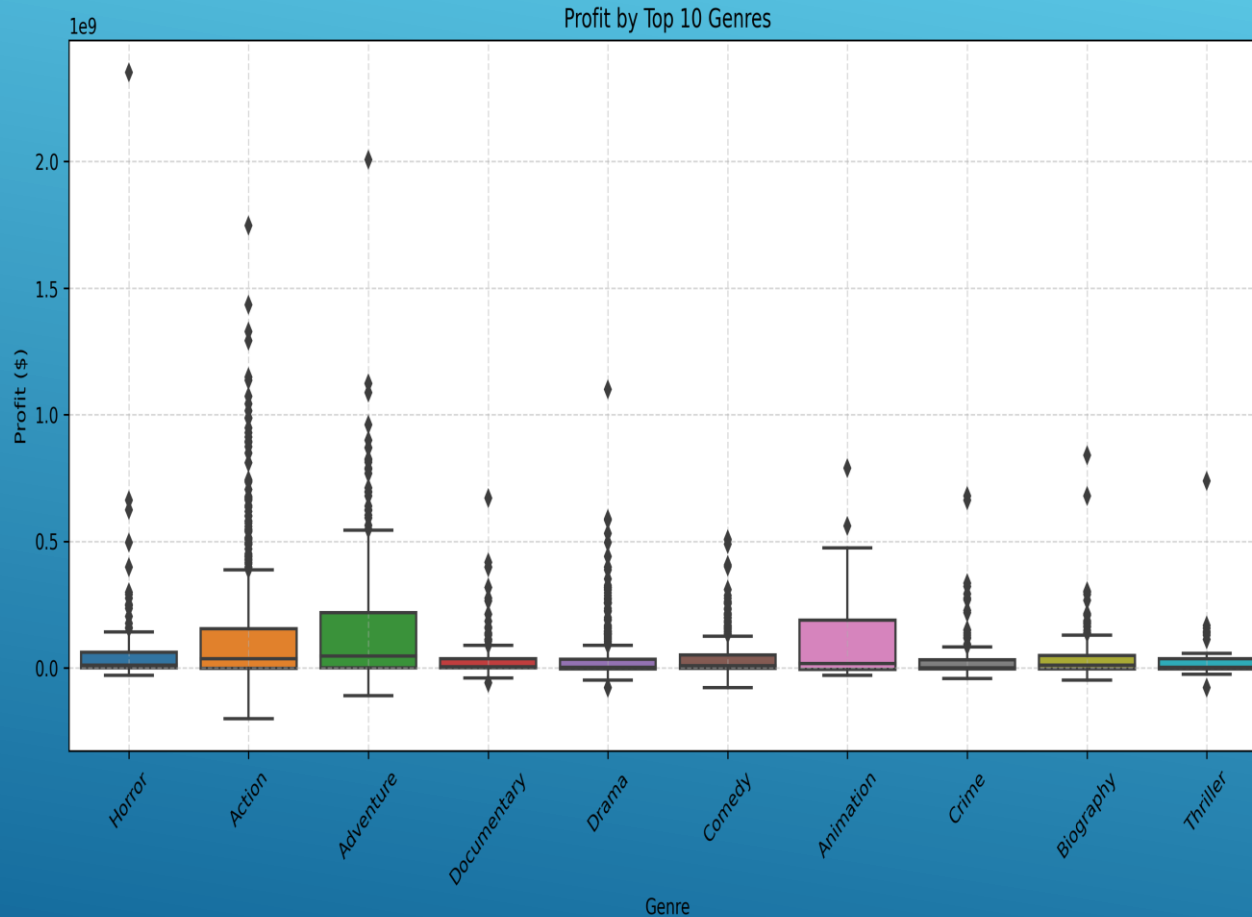
DATA UNDERSTANDING

- ▶ Data Sources:
 - ▶ Box Office Mojo: Gross revenue data.
 - ▶ The Numbers: Production budgets.
 - ▶ IMDb: Genres, runtime, ratings, popularity (votes).
 - ▶ Dataset Size: 3,000+ movies from various years and genres.
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METHODS & TOOLS

- ▶ Tools: Python (Pandas, Seaborn, Statsmodels), SQLite.
 - ▶ Techniques:
 - ▶ - Data cleaning and feature engineering.
 - ▶ - Exploratory Data Analysis (EDA) with visualizations.
 - ▶ - Hypothesis Testing (ANOVA, Tukey HSD, t-tests).
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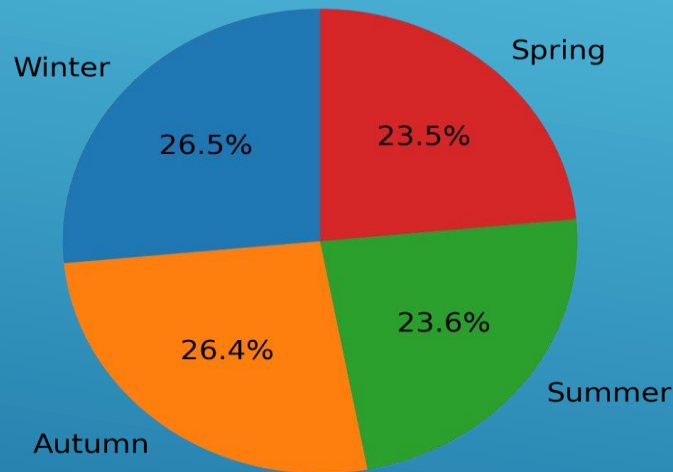
PROFIT VS GENRE



- ▶ Key Finding: Action, Adventure, and Family genres show significantly higher profits.
- ▶ Statistical Evidence: ANOVA & Tukey HSD post-hoc tests confirmed genre-based profit differences

FILM RELEASES BY SEASON

Distribution by Season



Film releases are **fairly evenly distributed** throughout the year.

Autumn (26.4%) and **Winter (26.5%)** have a slight edge in release frequency.

Spring (23.5%) and **Summer (23.6%)** are marginally less utilized.

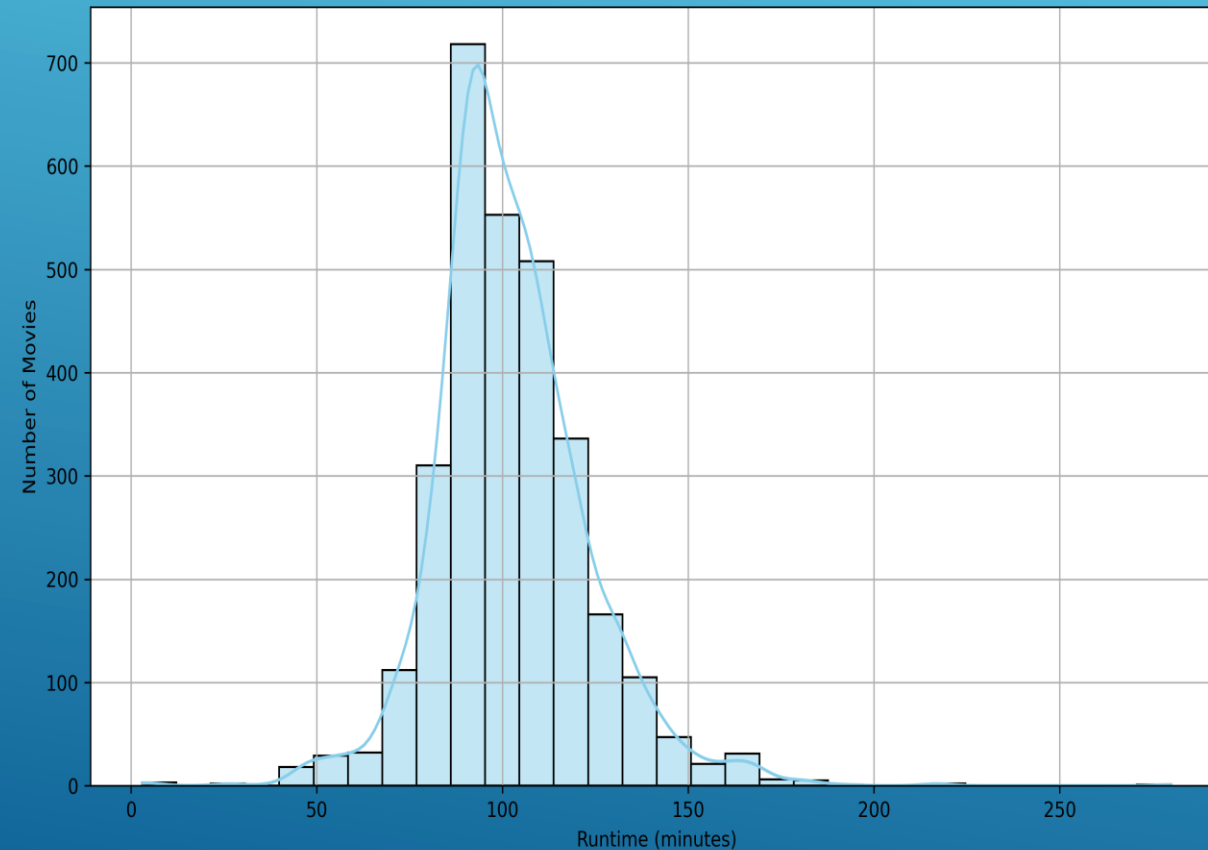
The slight preference for **end-of-year releases** aligns with periods favorable for blockbusters, awards season, and maximizing audience turnout.

Conclusion:

While a year-round release strategy is common, targeting **Autumn and Winter** for high-potential films could enhance visibility and box office performance.

MOVIE RUNTIME DISTRIBUTION

Distribution of Movie Runtimes (in Minutes)




Most films have a runtime between **85 and 115 minutes**, peaking at **95-100 minutes**.

Longer films (over **140 minutes**) are rare.

This indicates that a **standard movie length of 1.5 to 2 hours** is the industry norm, serving as a key benchmark for future productions.

BUSINESS RECOMMENDATION 1

Prioritize High-Profit Genres

- ▶ Hypothesis tests revealed that **Action, Adventure, and Family films** consistently outperform other genres in terms of profitability.
 - ▶ These genres offer broad audience appeal and strong international marketability, making them strategic priorities for a new studio seeking to **maximize box office returns**.
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BUSINESS RECOMMENDATION 2

Invest Strategically in Production Budgets

Statistical analyses confirmed a positive correlation between production budgets and profits.


While it's crucial to manage costs, allocating sufficient budgets to essential aspects like **visual effects**, casting, and marketing is key to enhancing a film's commercial success.

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BUSINESS RECOMMENDATION 3

Balance Film Length with Audience Engagement

Although longer films (120 minutes or more) tend to generate higher profits, they are often linked with slightly lower audience ratings. It is therefore crucial to strike a balance between runtime and engaging storytelling to maintain viewer satisfaction while maximizing profitability.

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NEXT STEPS

- Develop a predictive profitability model (Regression or Machine Learning).
 - Analyze feature importance to identify key profit drivers.
 - Integrate marketing spend and distribution data (screens, digital releases).
 - Expand analysis to international revenue breakdowns.
 - Implement real-time data updates via scraping or APIs.
 - Conduct A/B testing on release strategies and promotional campaigns.
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For Questions & Discussion:

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- ▶ **LinkedIn: Micka LOUIS**
- ▶ **EMAIL: mickalouis25@gmail.com**

THANK YOU

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