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Ministry of Communications
and Information Technology

MCIT - DEPI Project

By: DEPI Project Team

October, 2024

Customer Data Management , Analysis, and Churn Prediction





Meeting Agenda For Today

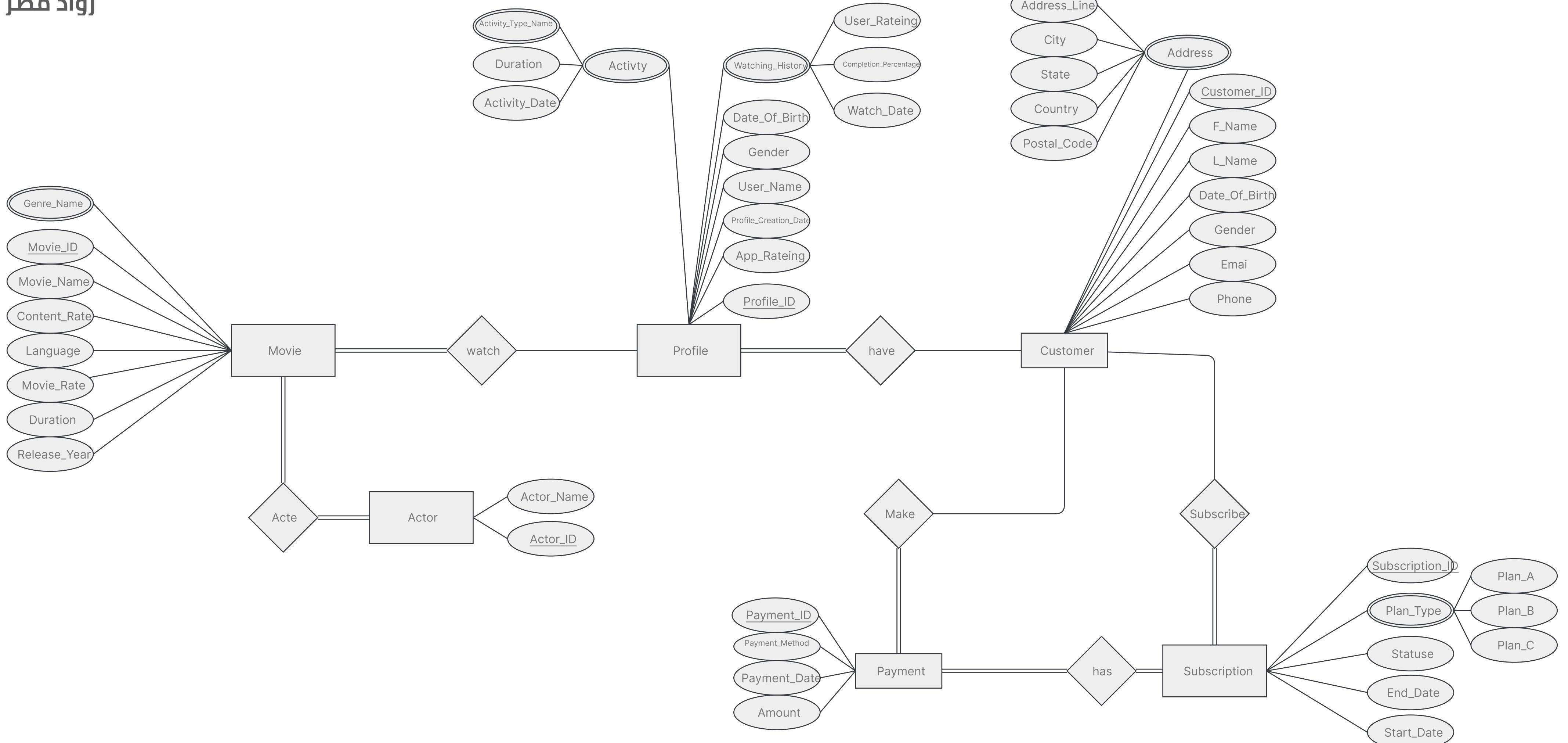


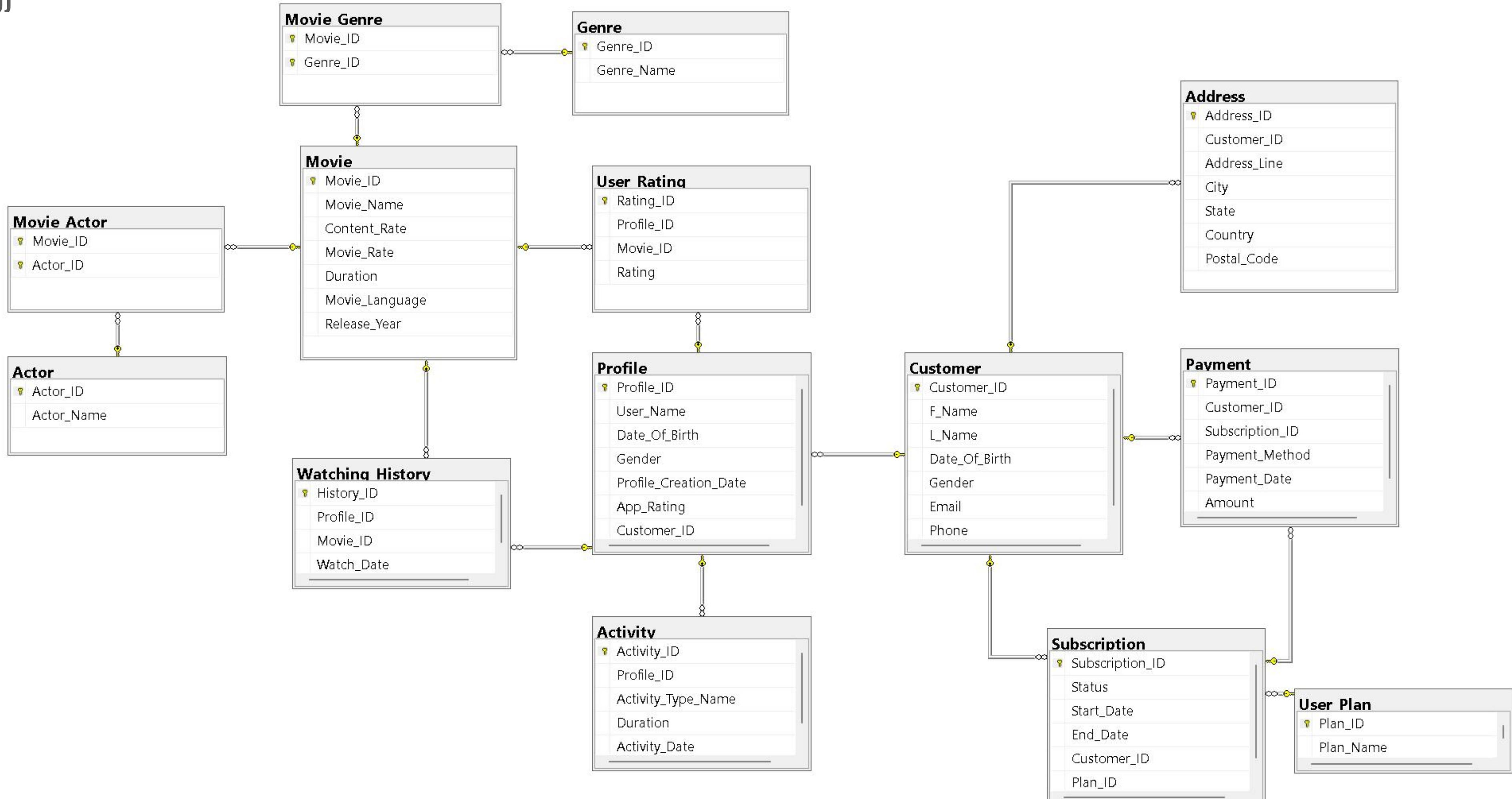


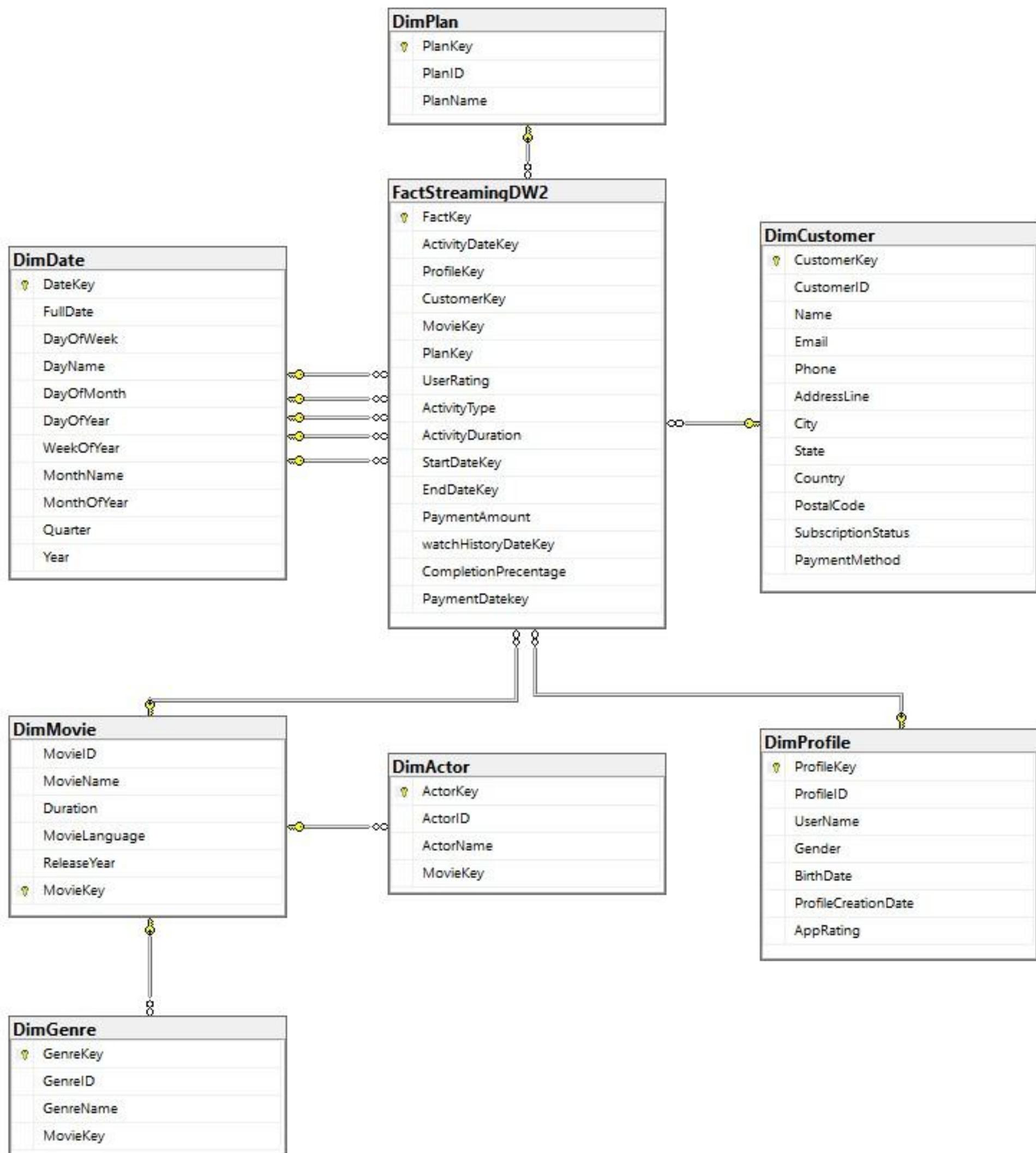
Problem Statement

In today's competitive business landscape, effectively managing and analyzing customer data is crucial for organizations to enhance customer experience, improve retention, and drive business growth. However, companies often face challenges in managing large volumes of customer data, performing predictive analysis, and seamlessly integrating modern tools like cloud services for machine learning and data analysis. To address these challenges, the Customer Data Management and Analysis Project aims to design and implement a comprehensive solution for managing customer data, building predictive models (e.g., churn prediction), and deploying machine learning models using advanced cloud services.



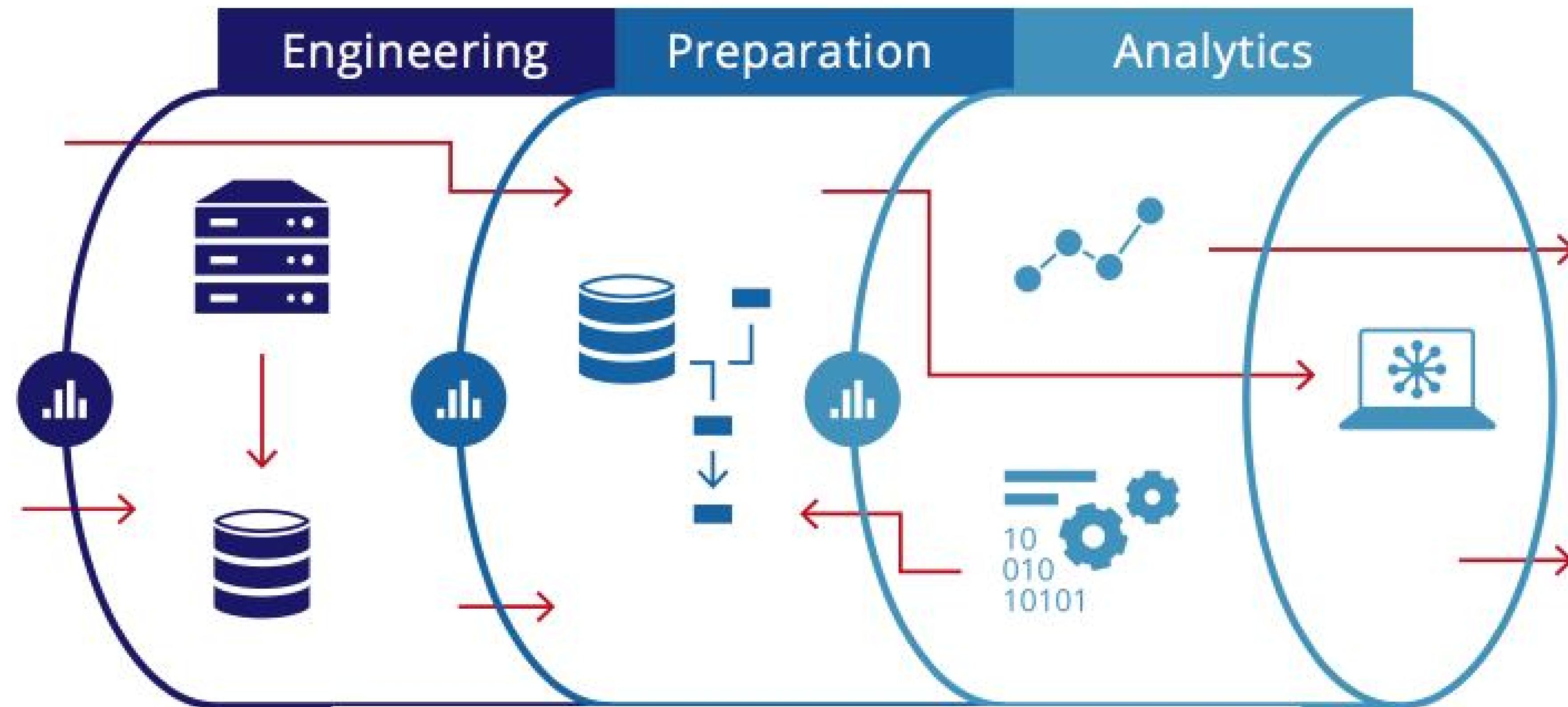






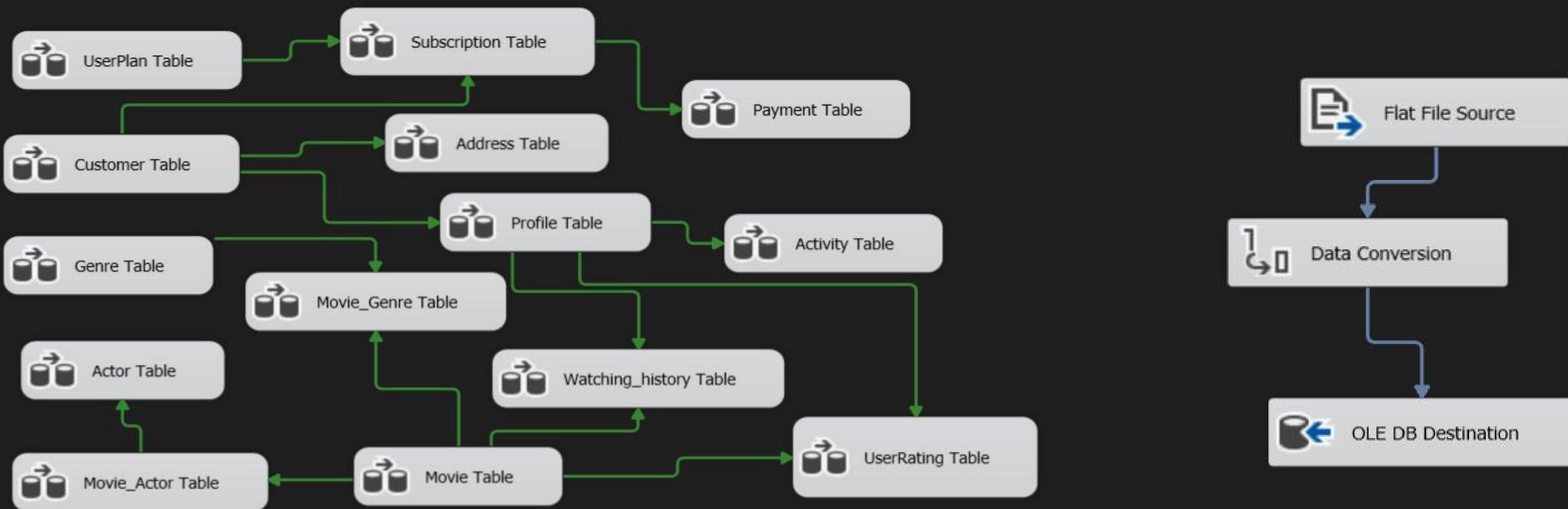
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Data Engineering



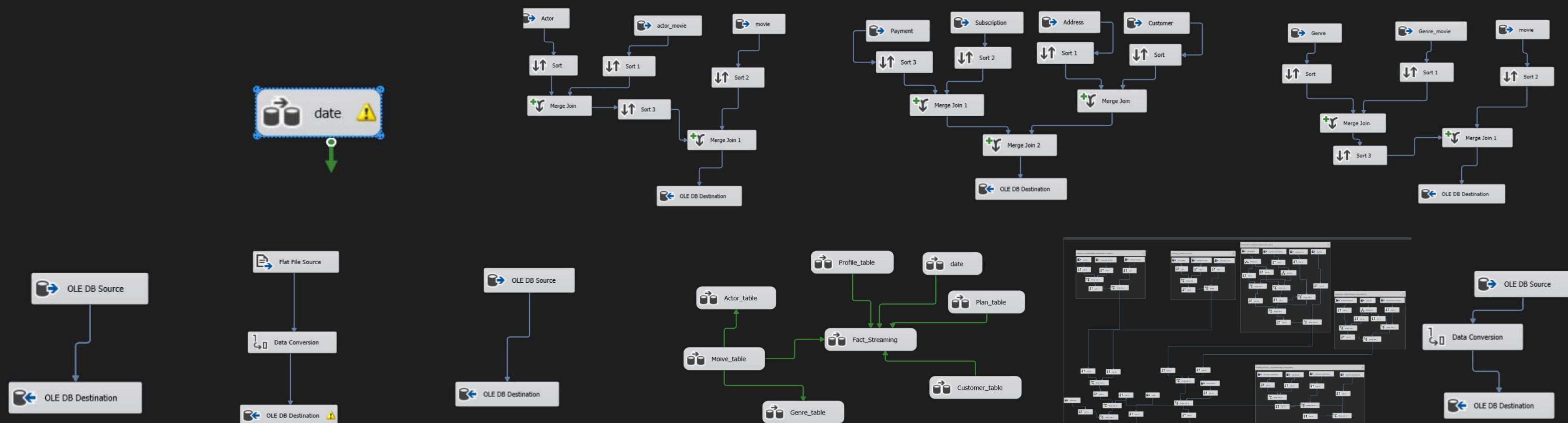


Database Insertion with the SSIS





ETL for The Data Warehouse



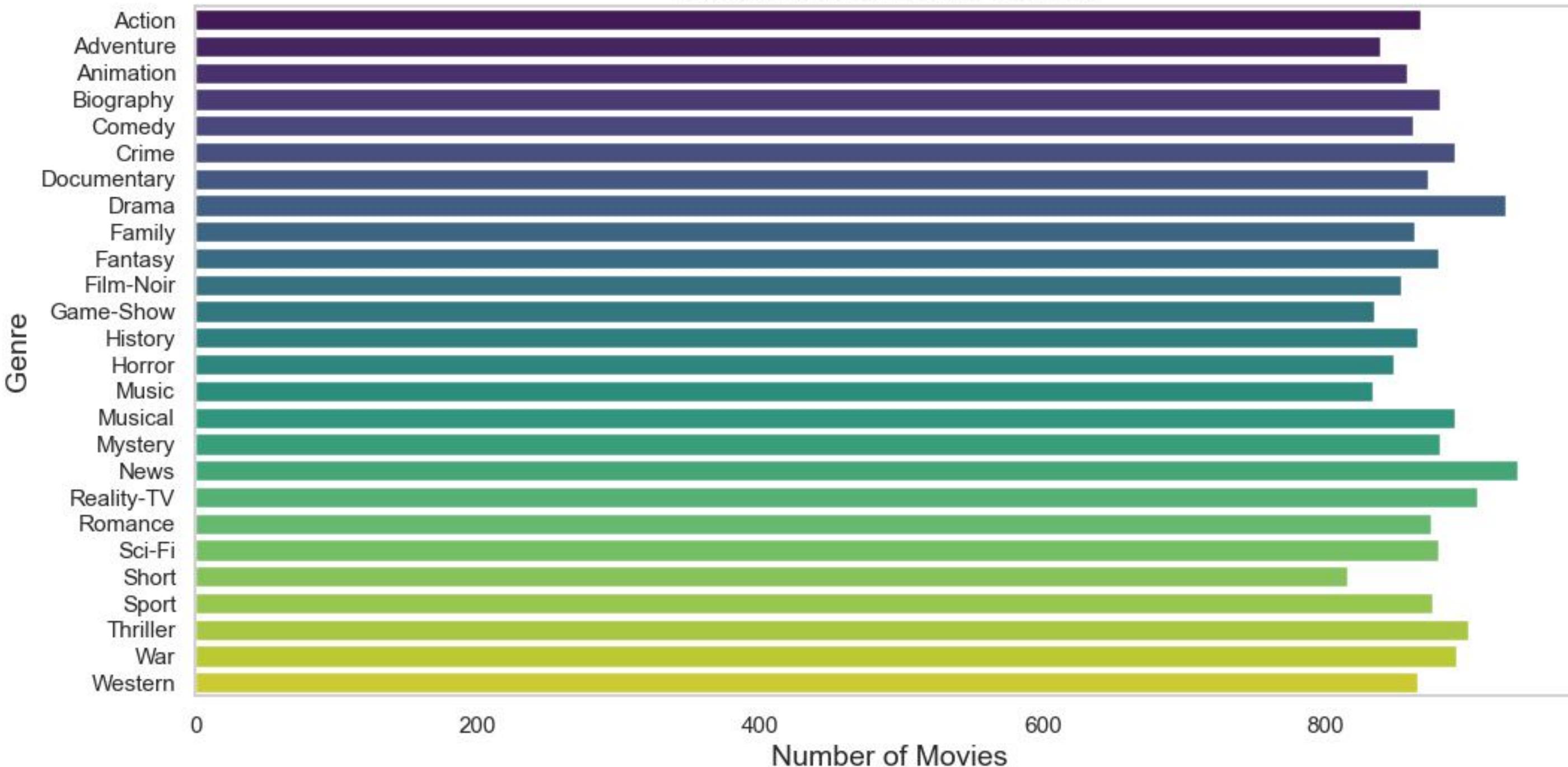
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Data Analysis



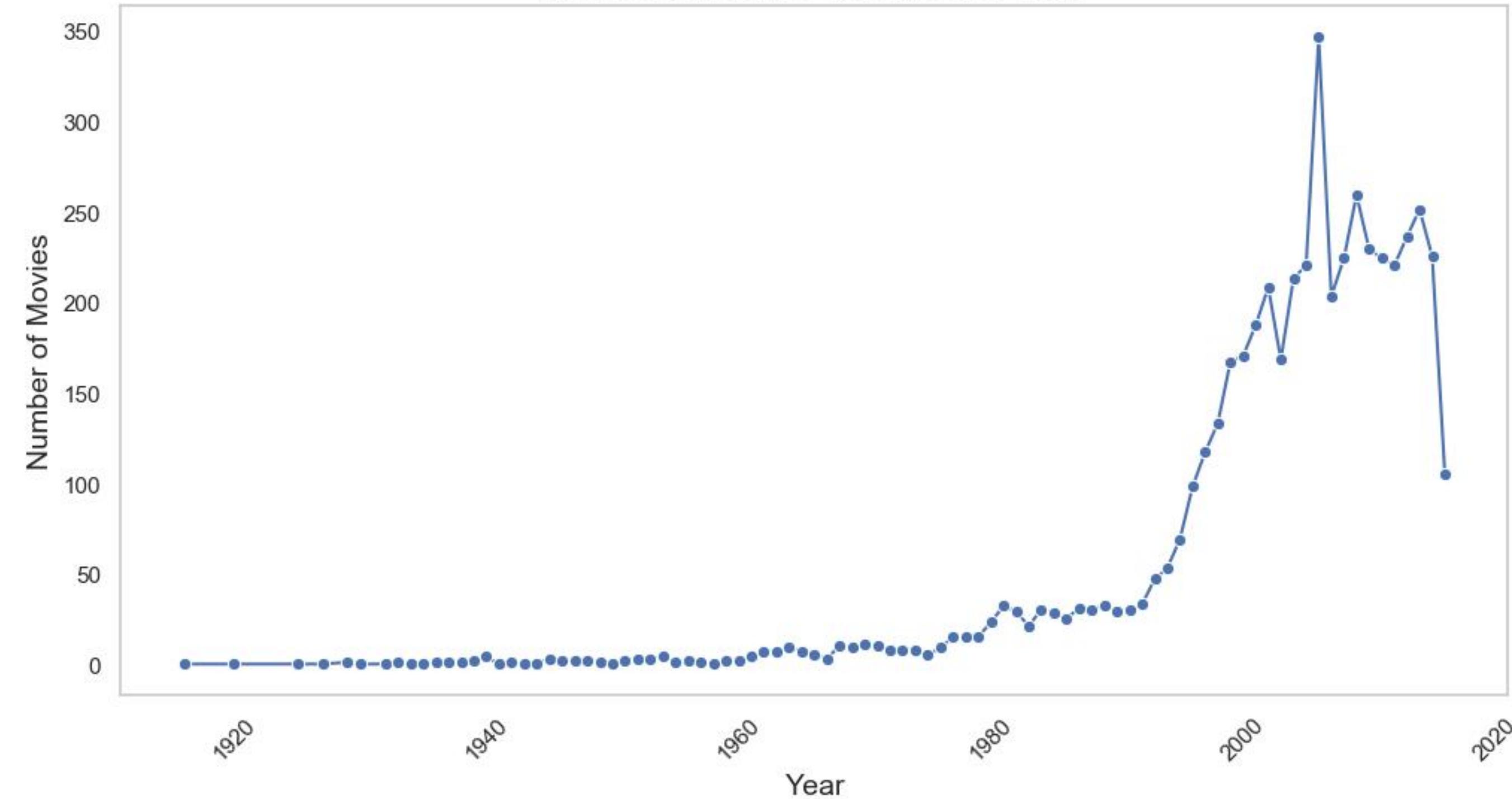


Distribution of Movie Genres



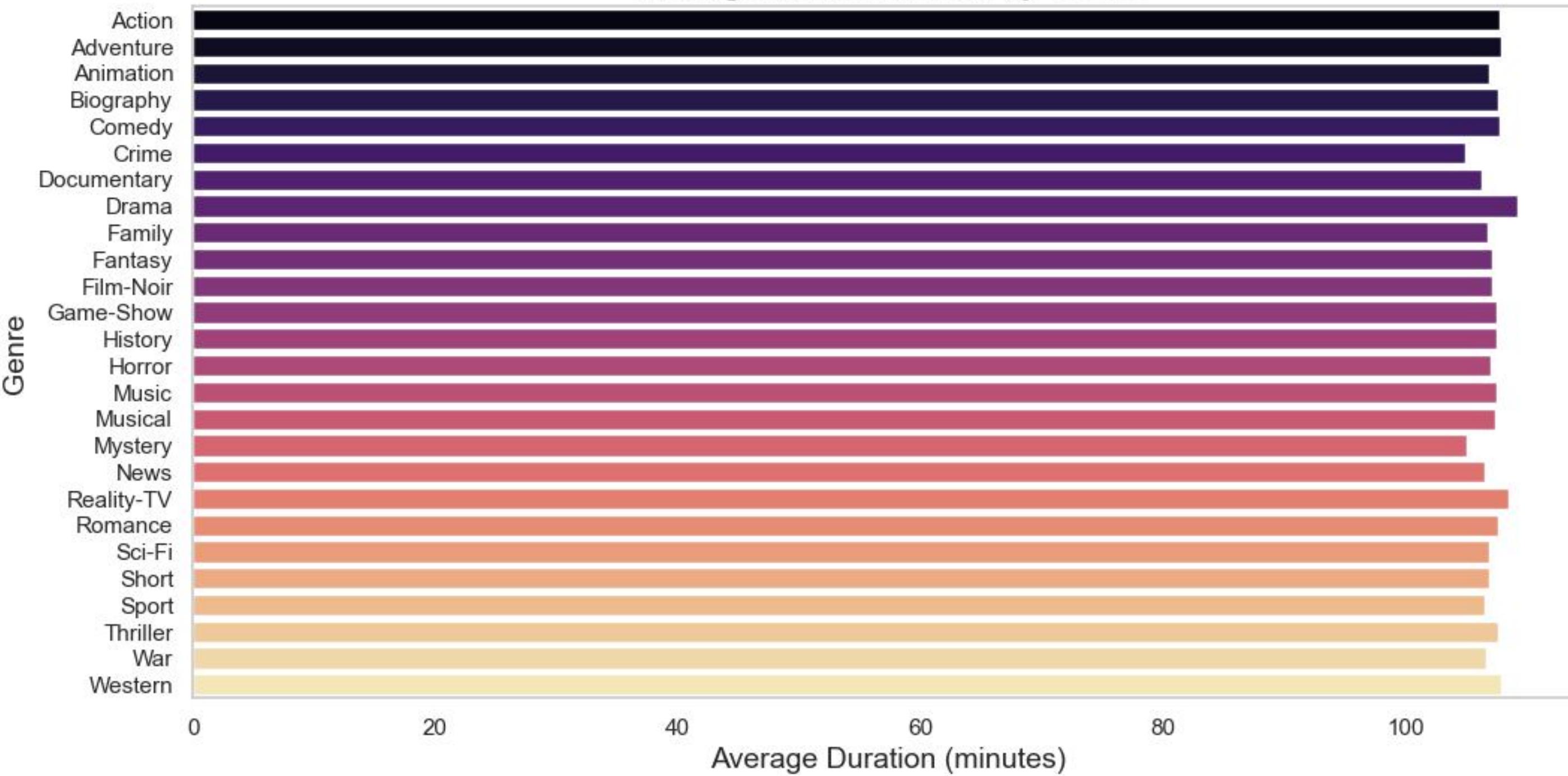


Number of Movies Released by Year



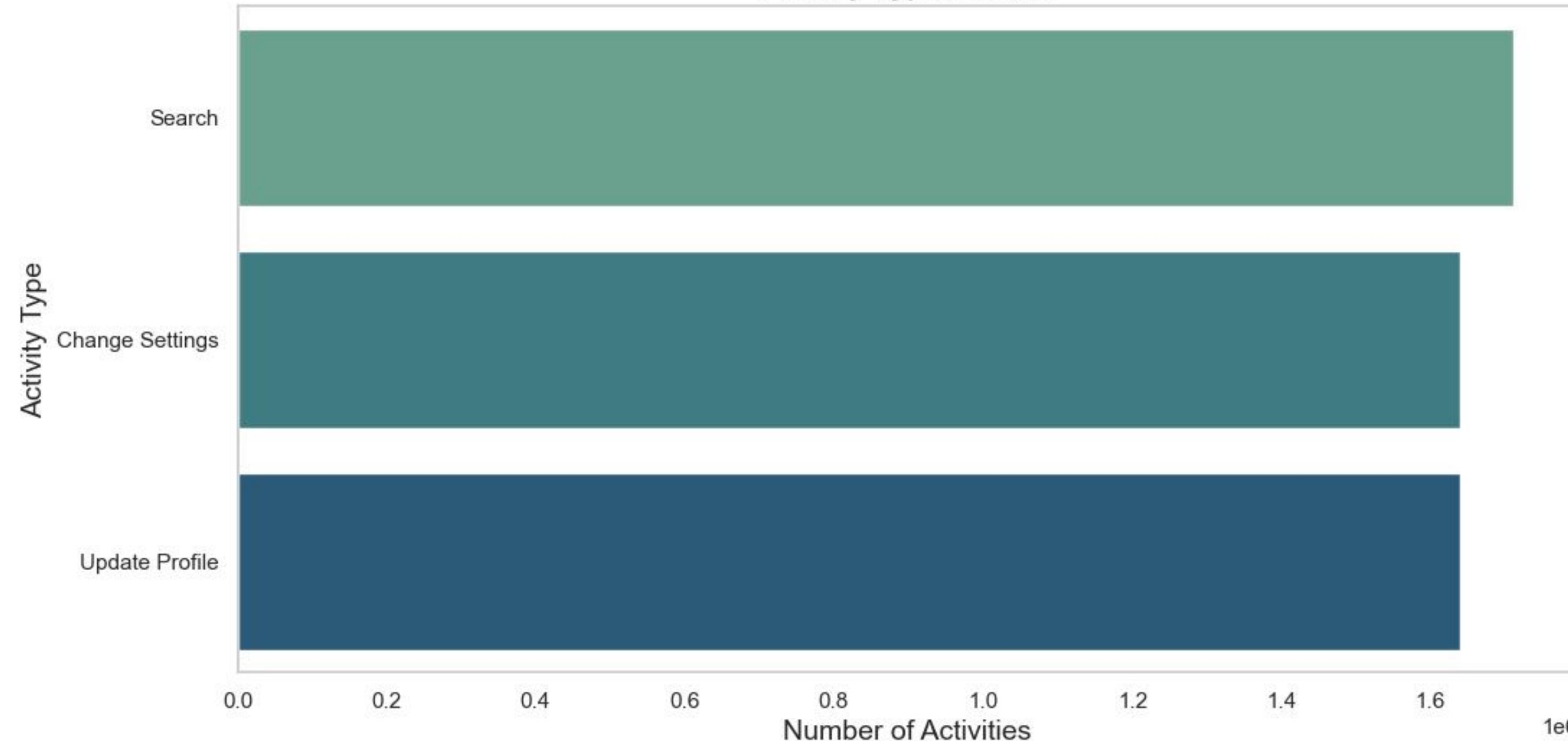


Average Movie Duration by Genre



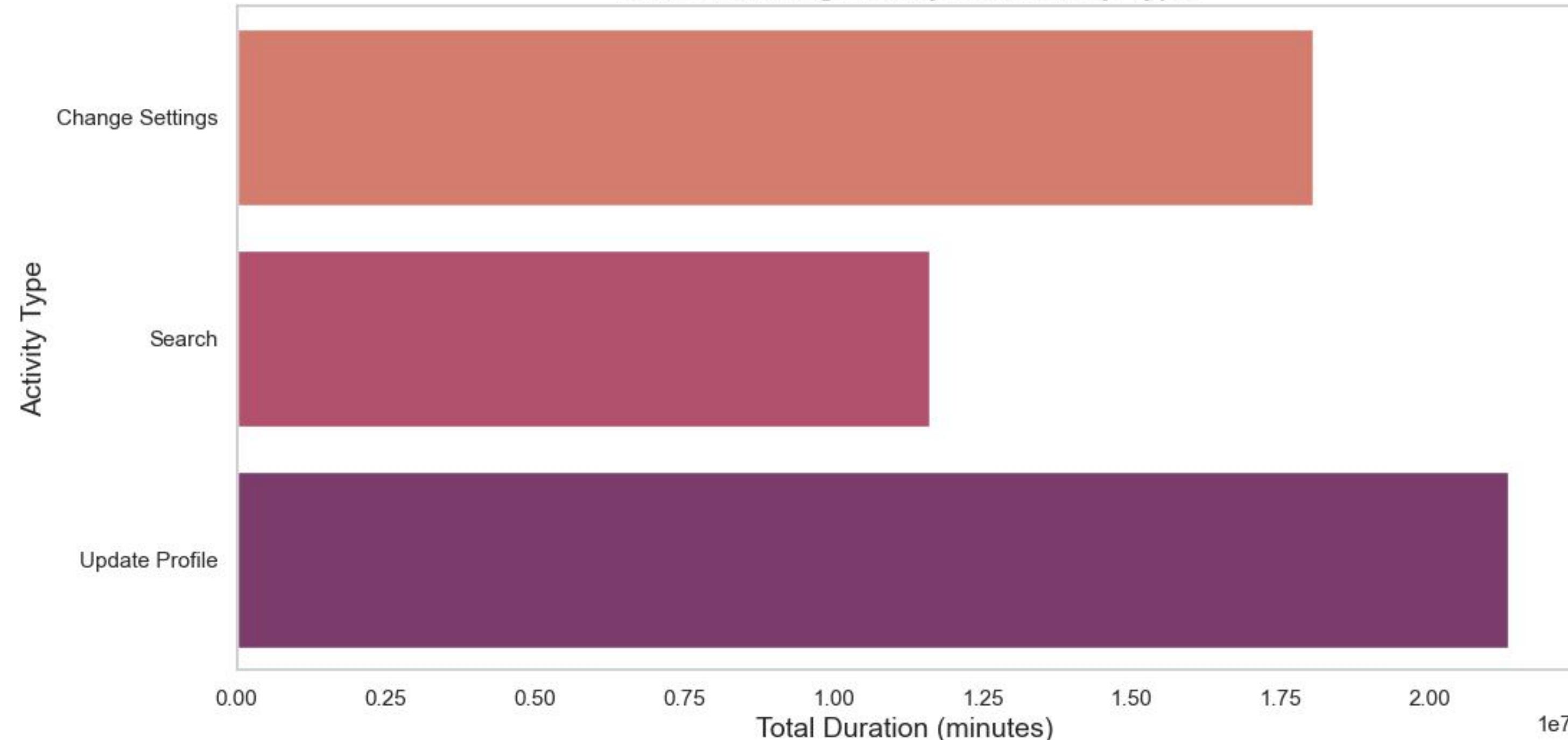


Activity Types Count



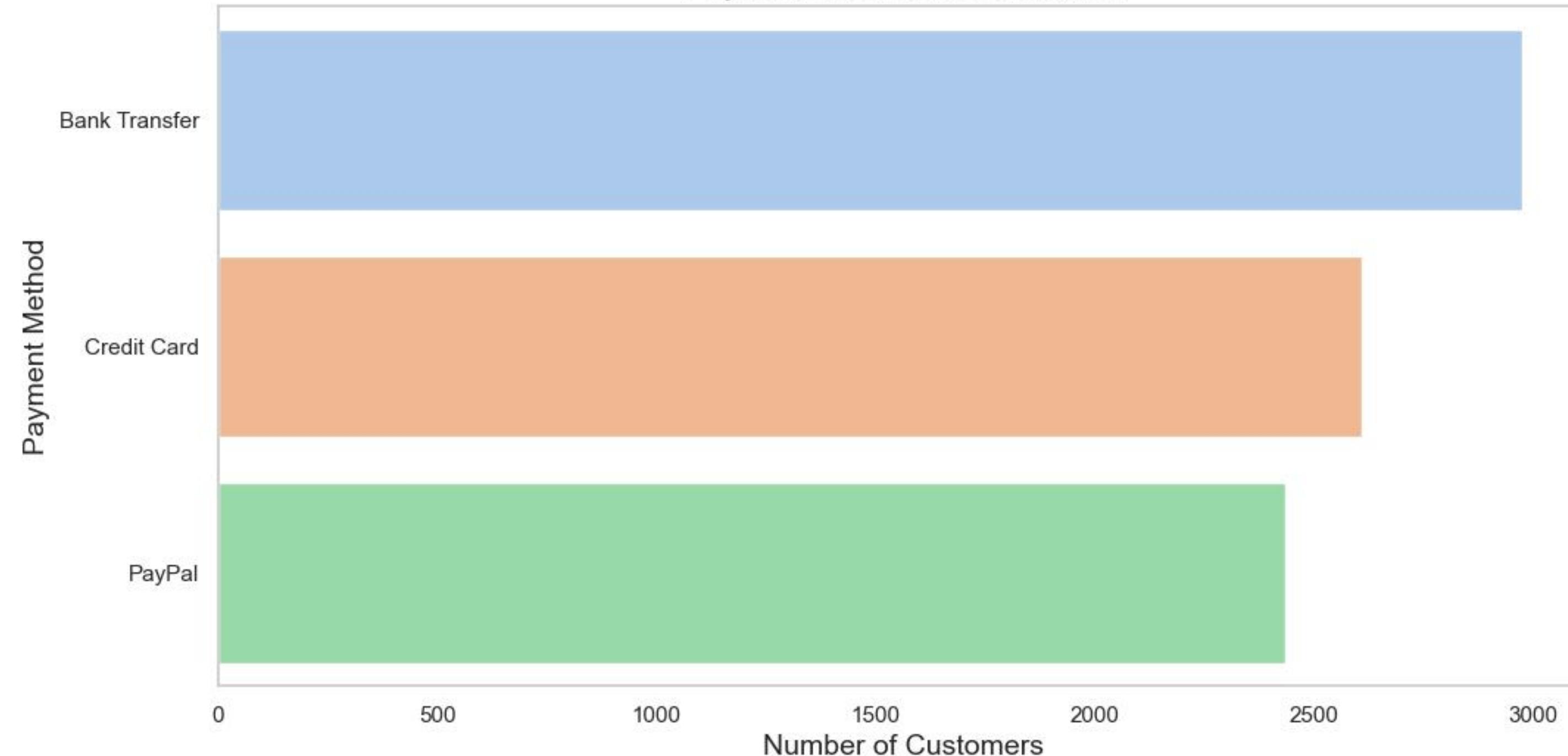


Total Streaming Activity Duration by Type



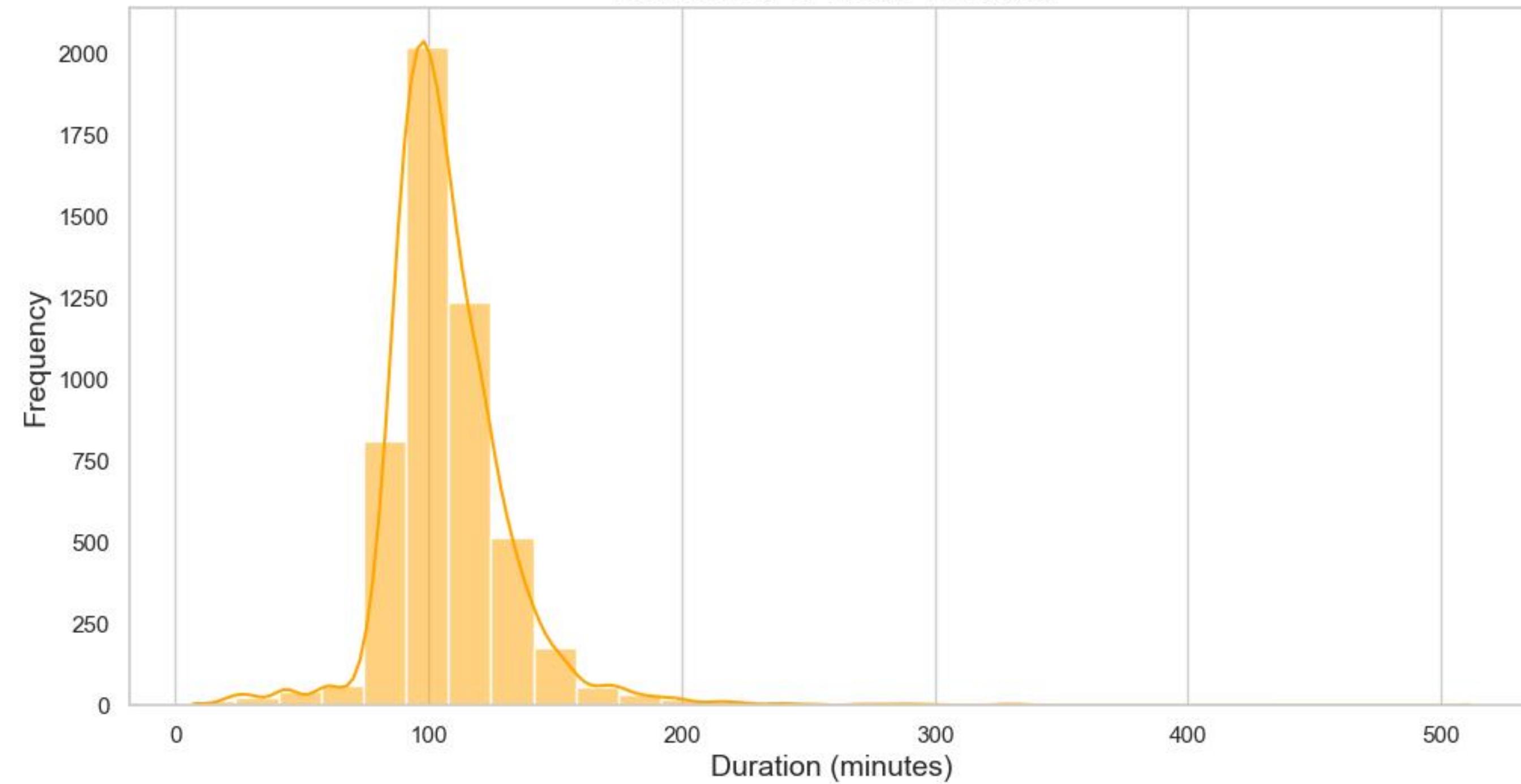


Payment Methods Distribution



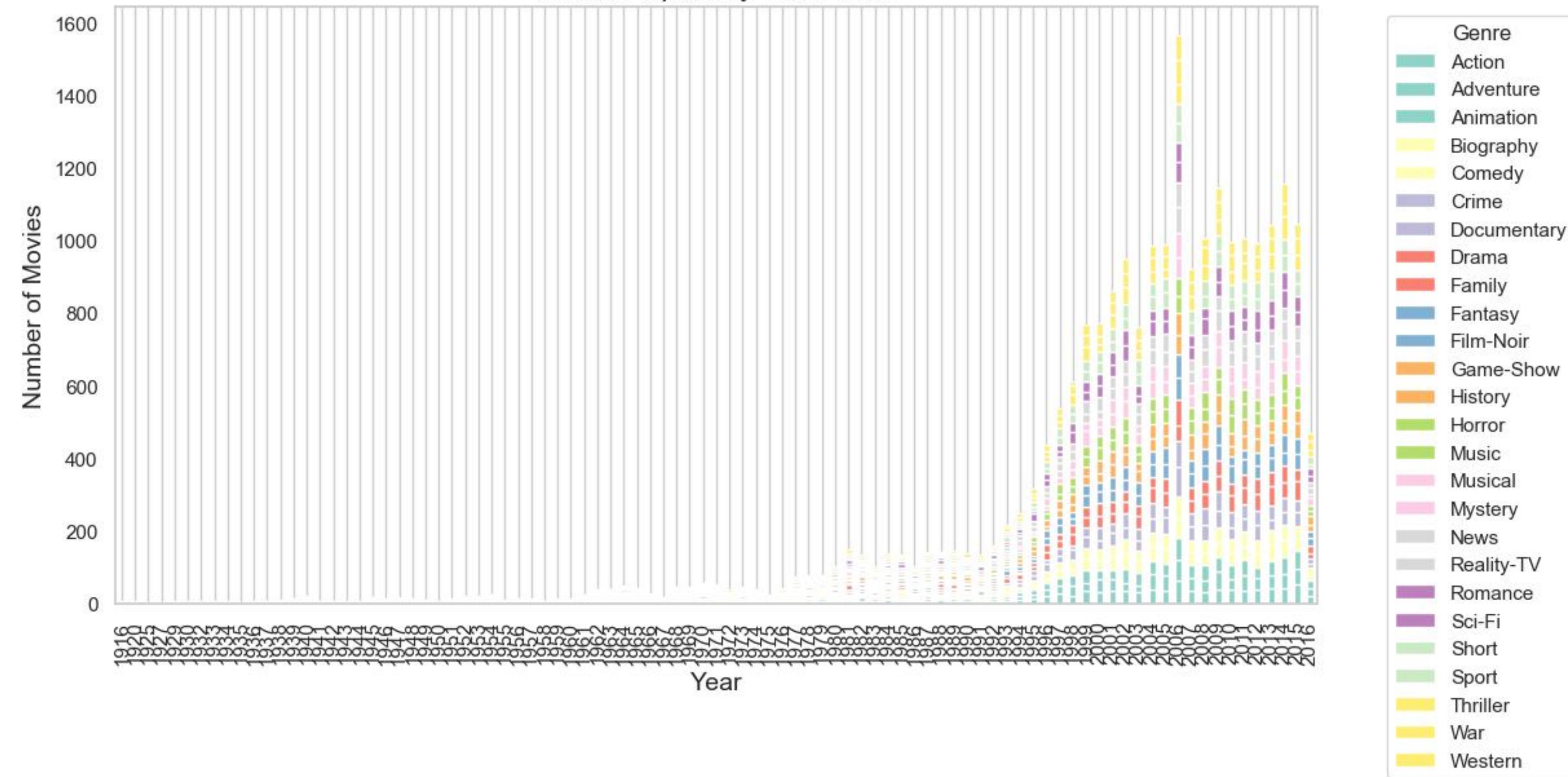


Distribution of Movie Duration



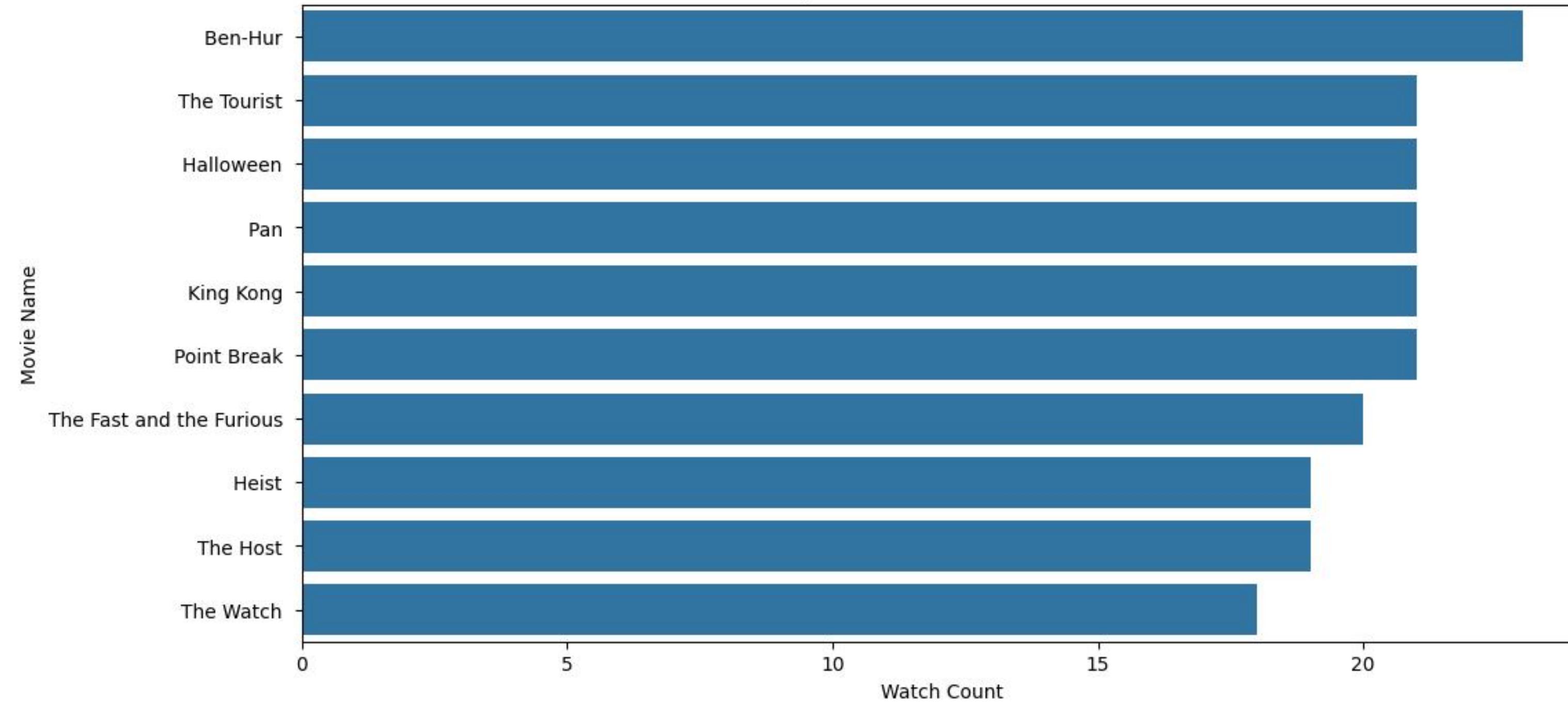


Genre Popularity Over Time



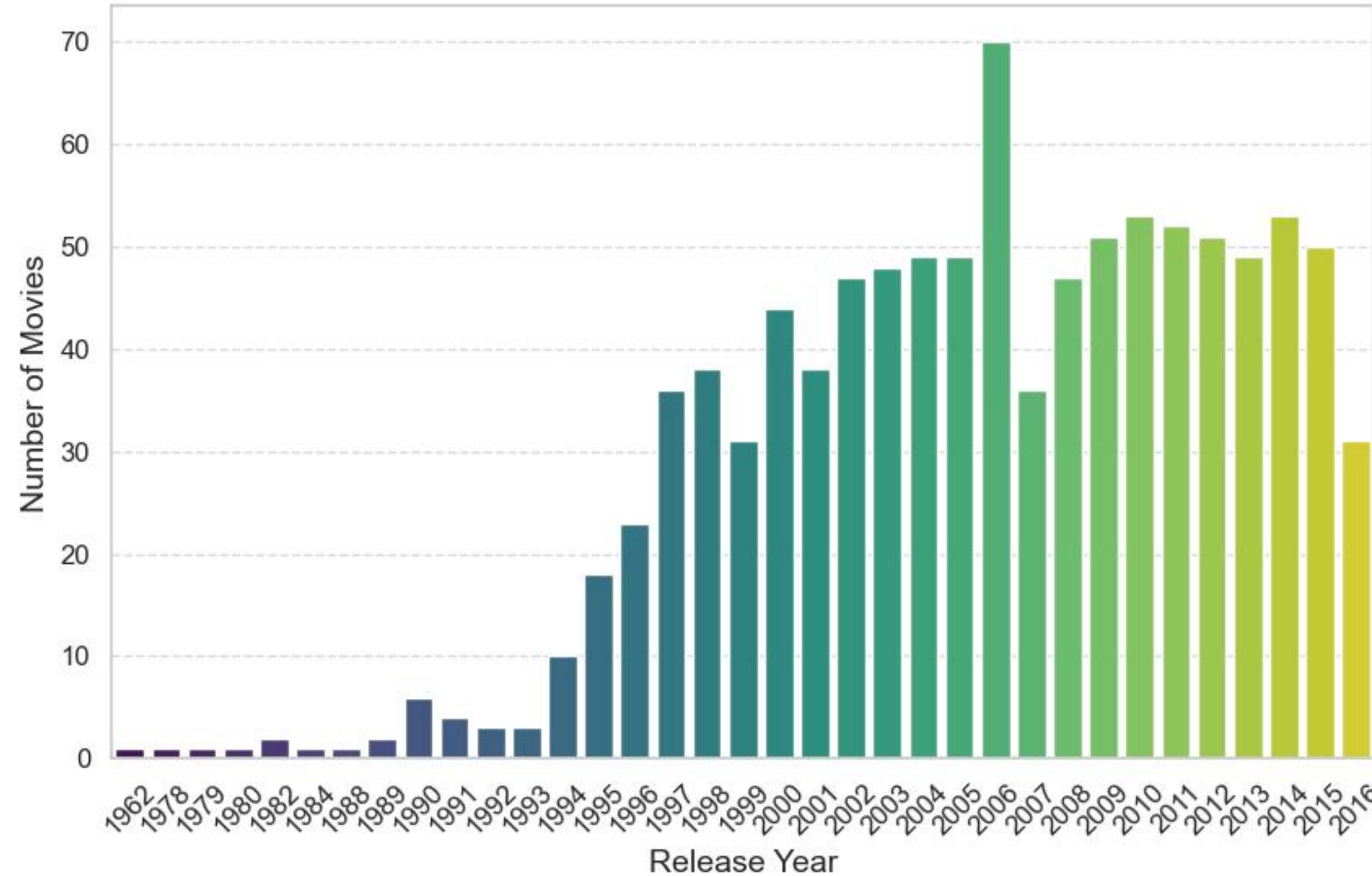


Top 10 Most Watched Movies



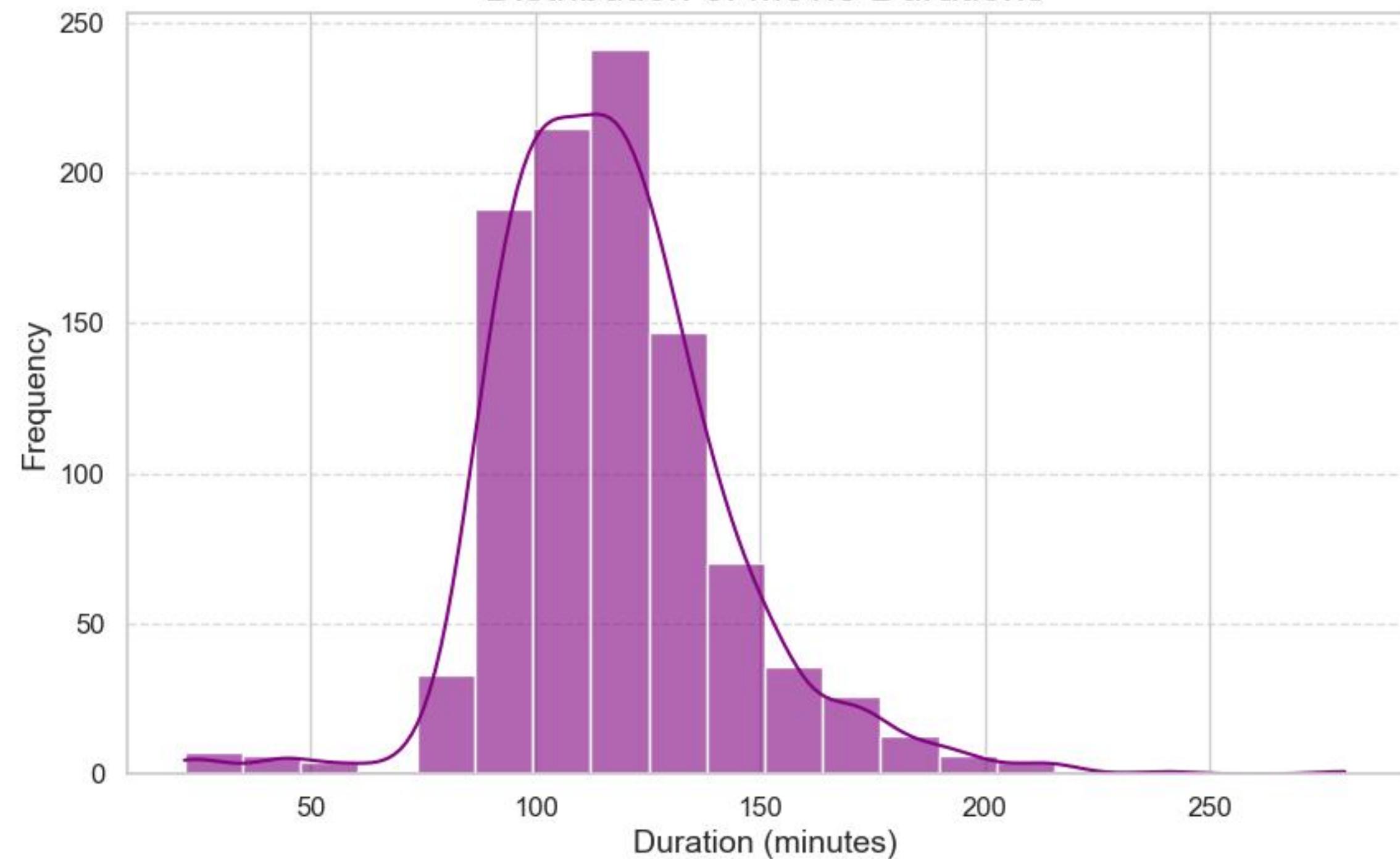


Number of Movies Released Each Year



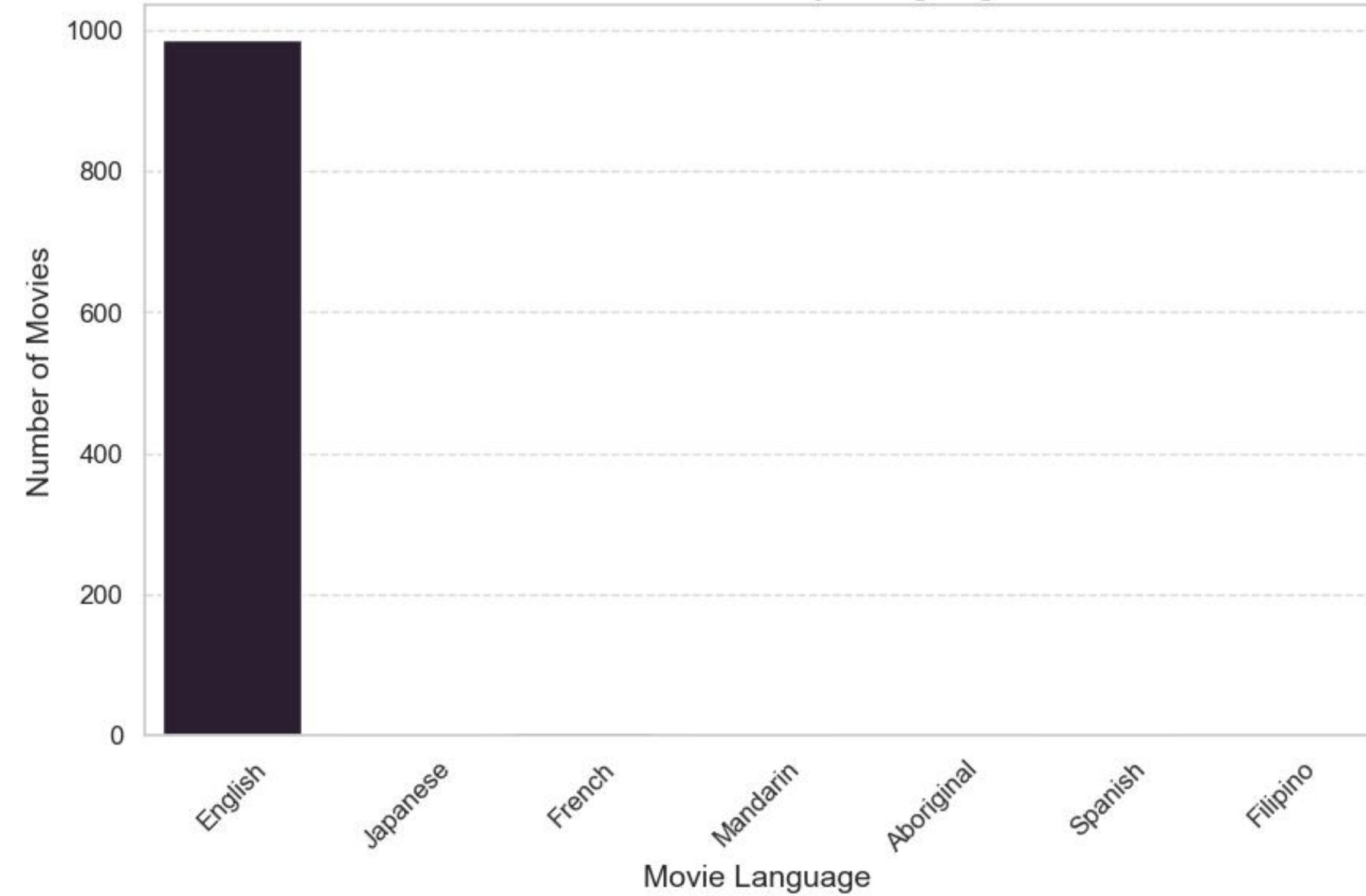


Distribution of Movie Durations



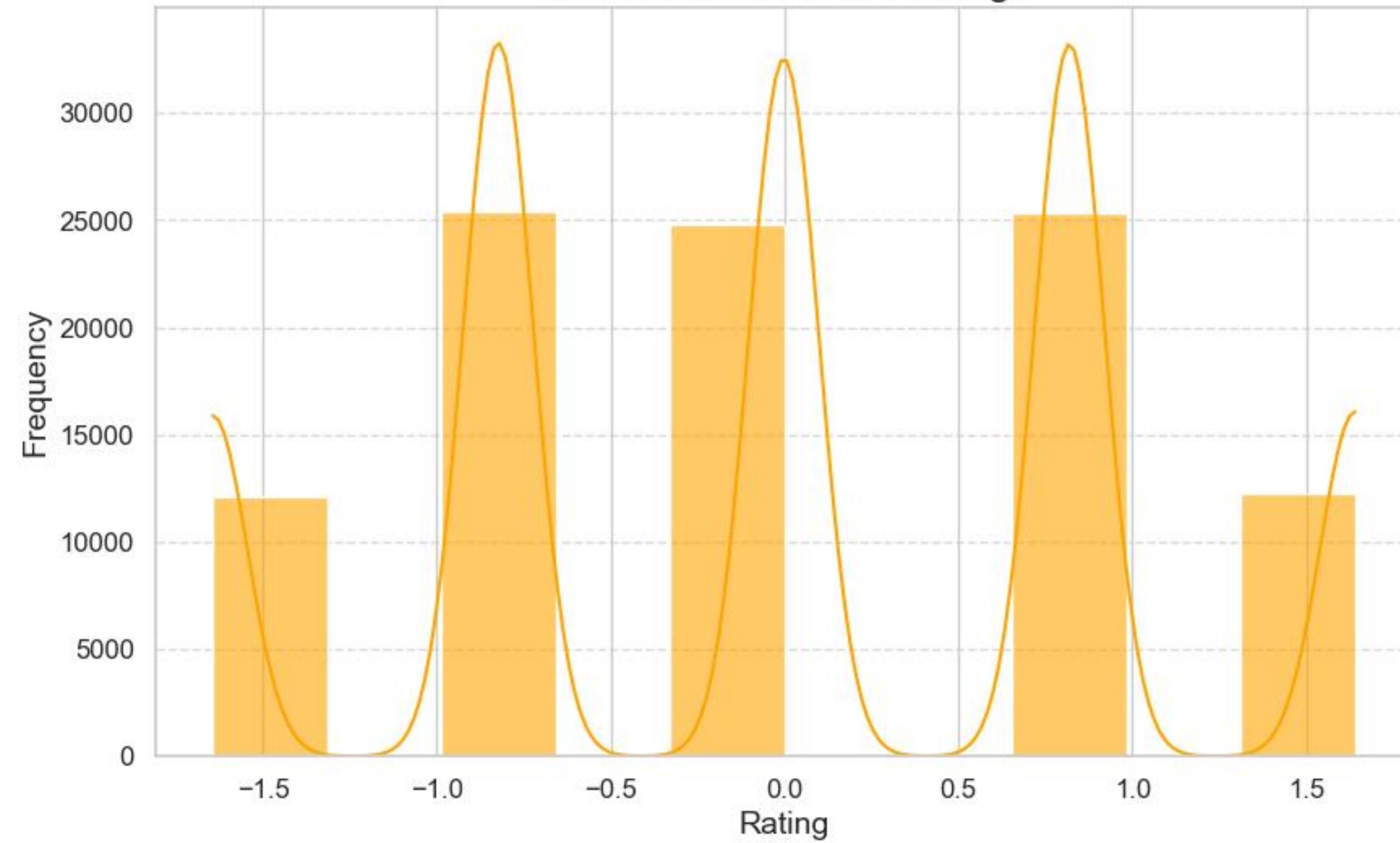


Count of Movies by Language



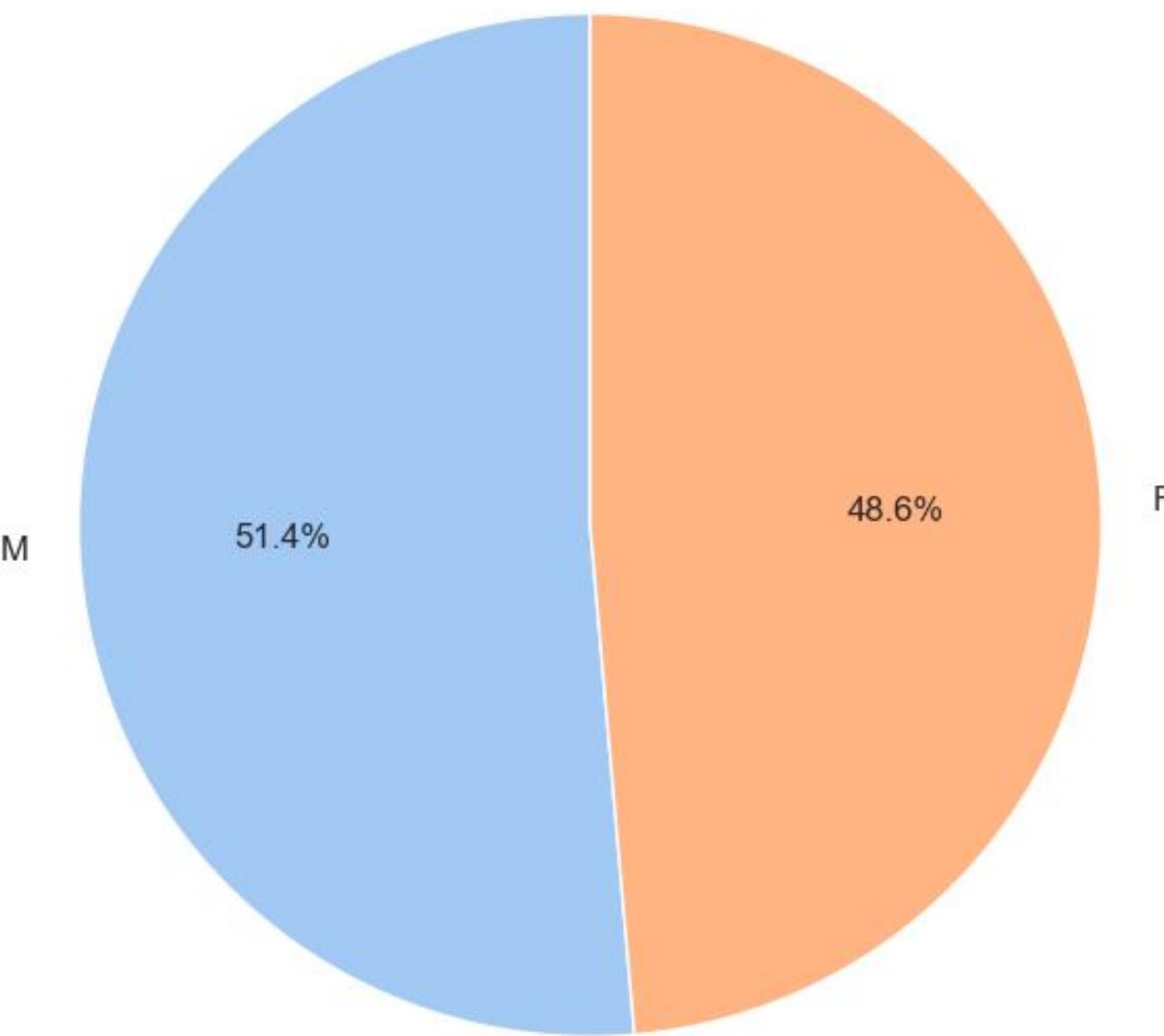


Distribution of User Ratings



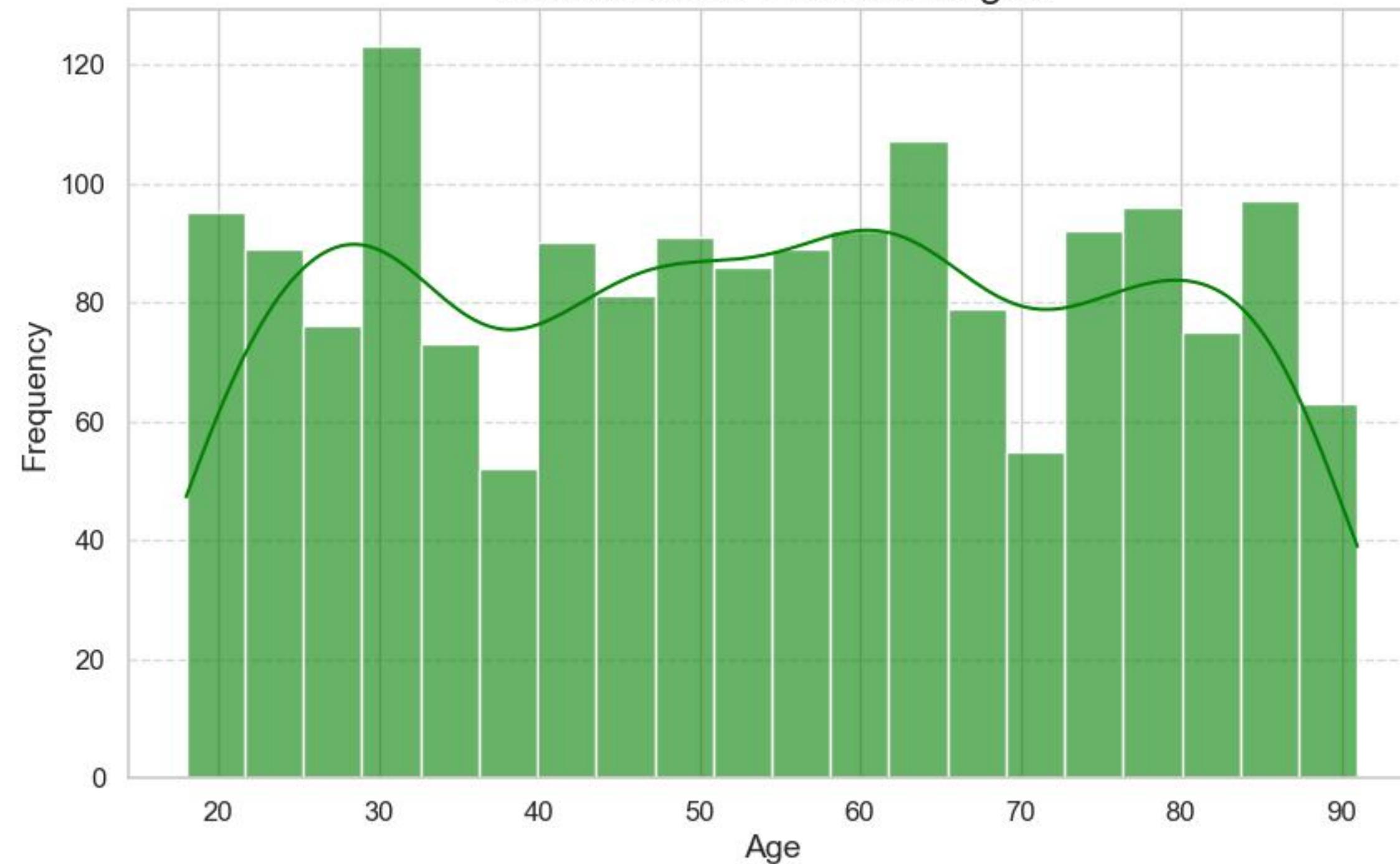


Customer Gender Distribution



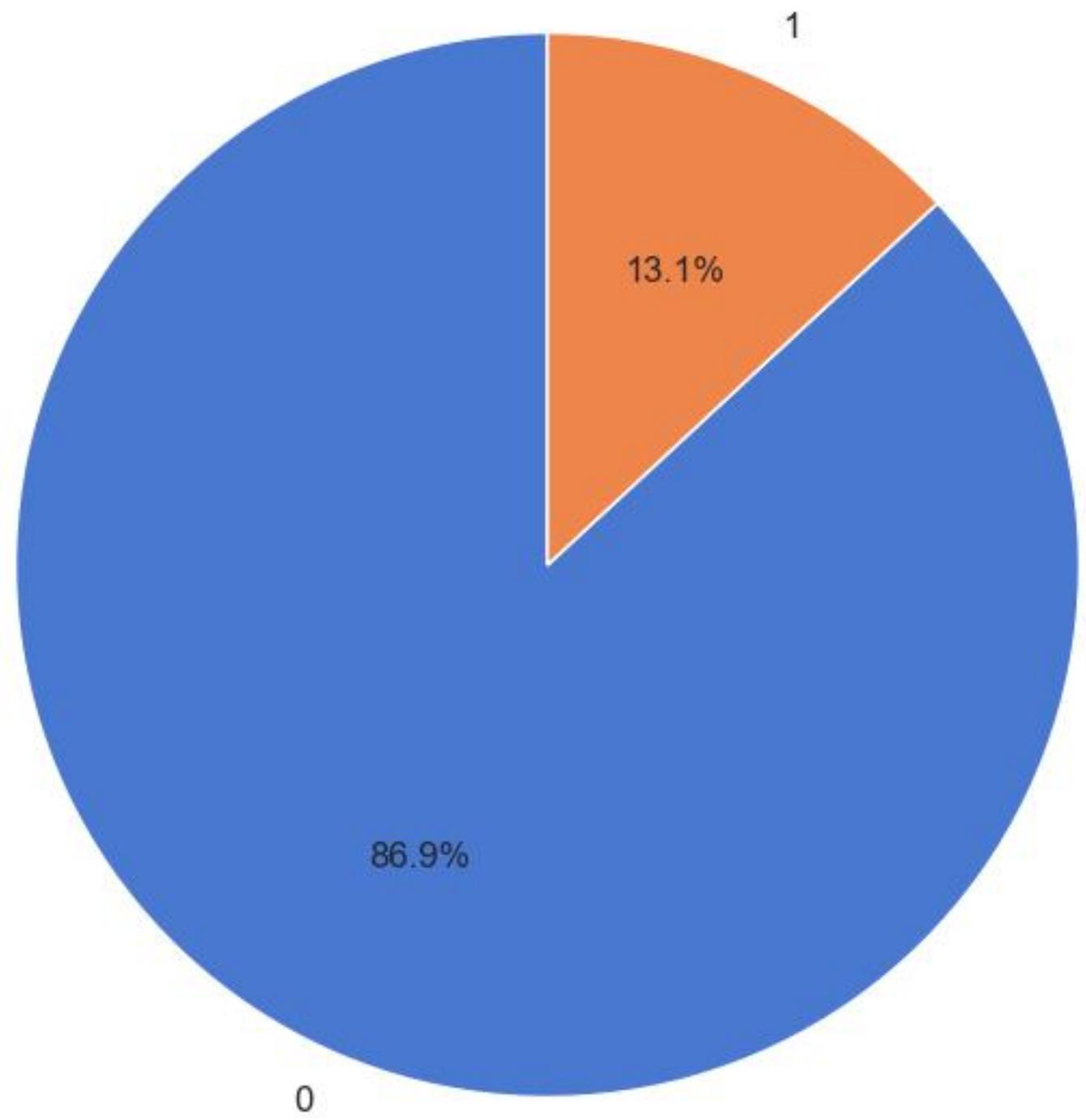


Distribution of Customer Ages



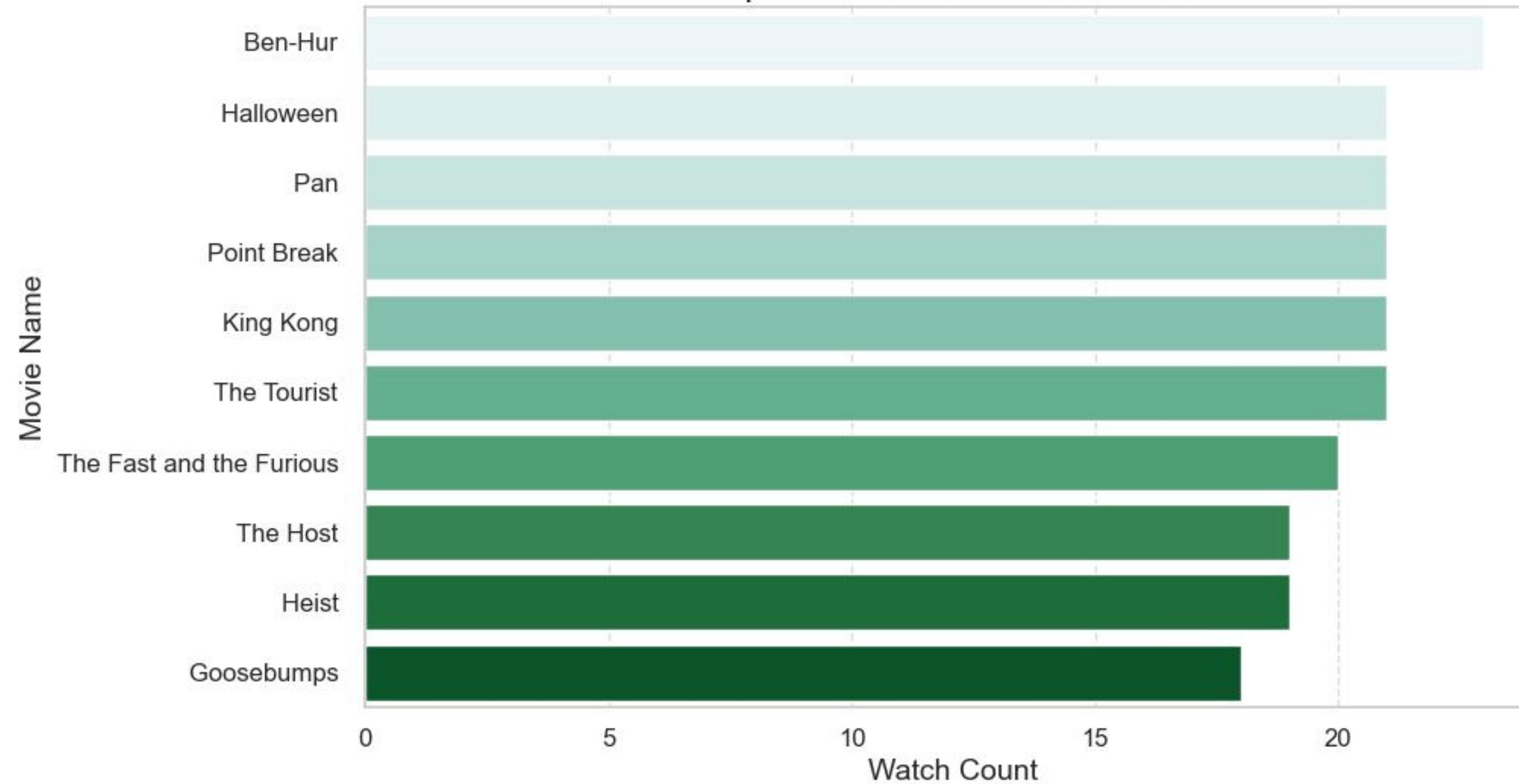


Subscription Status Distribution



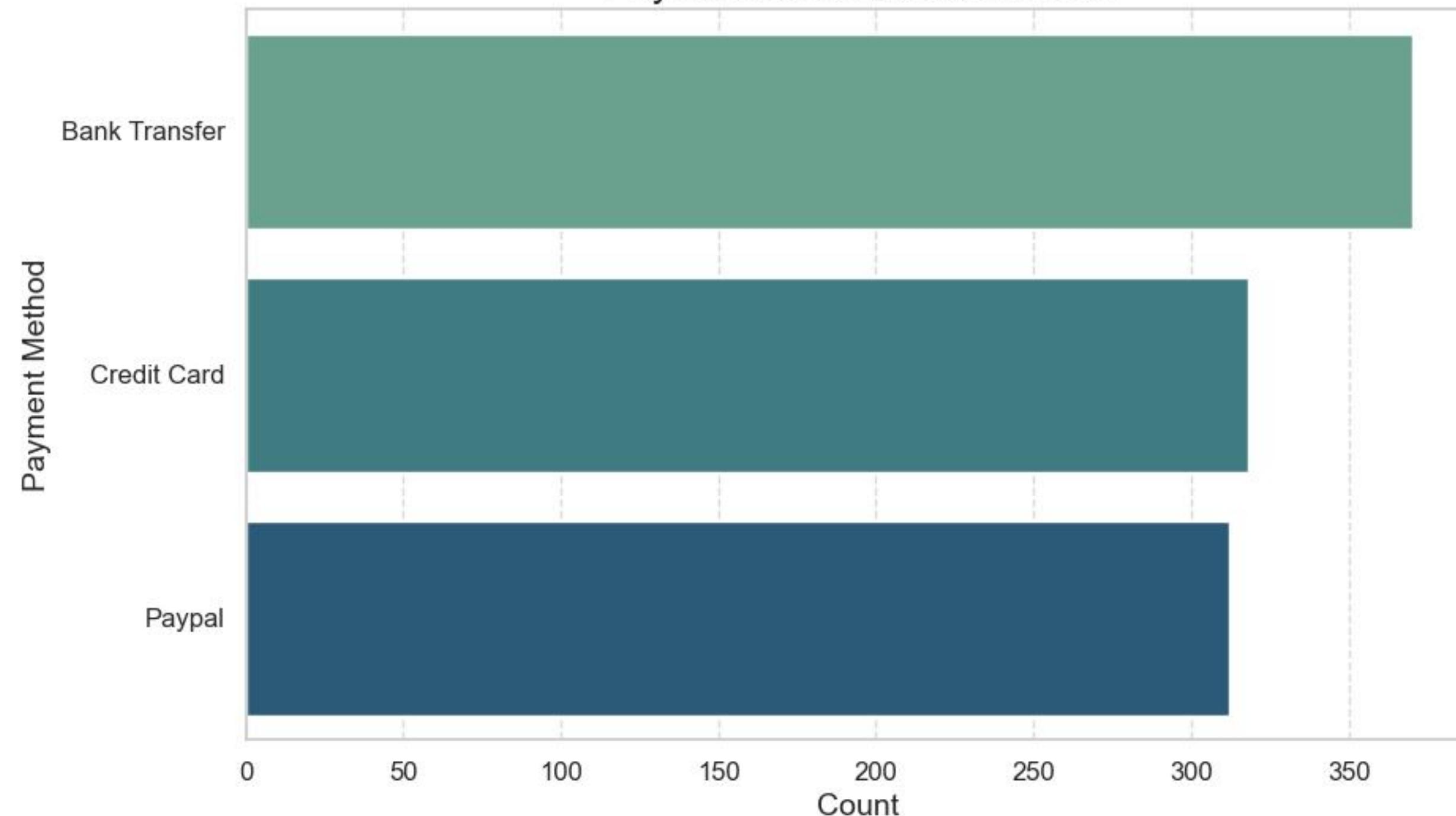


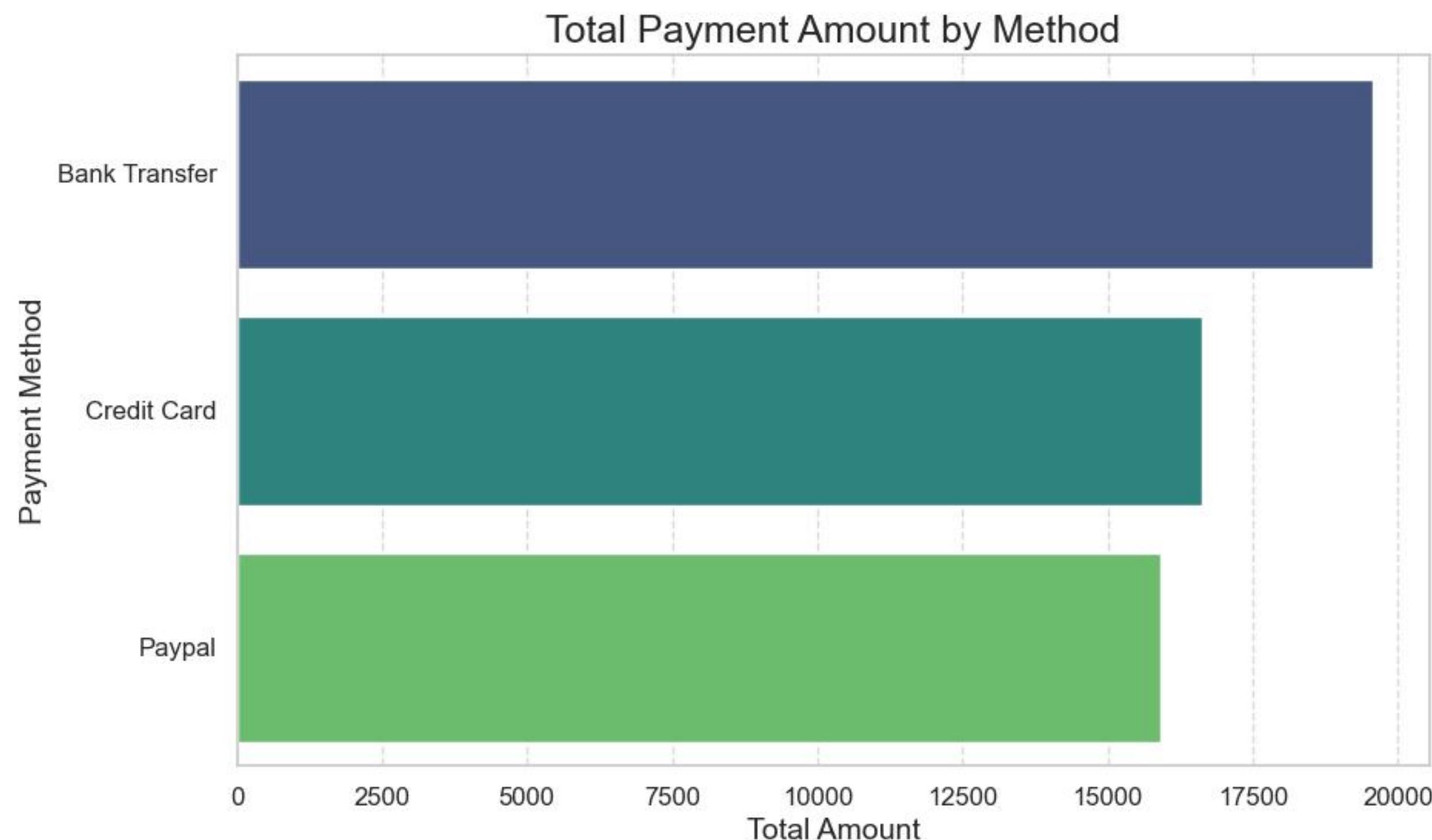
Top 10 Most Watched Movies





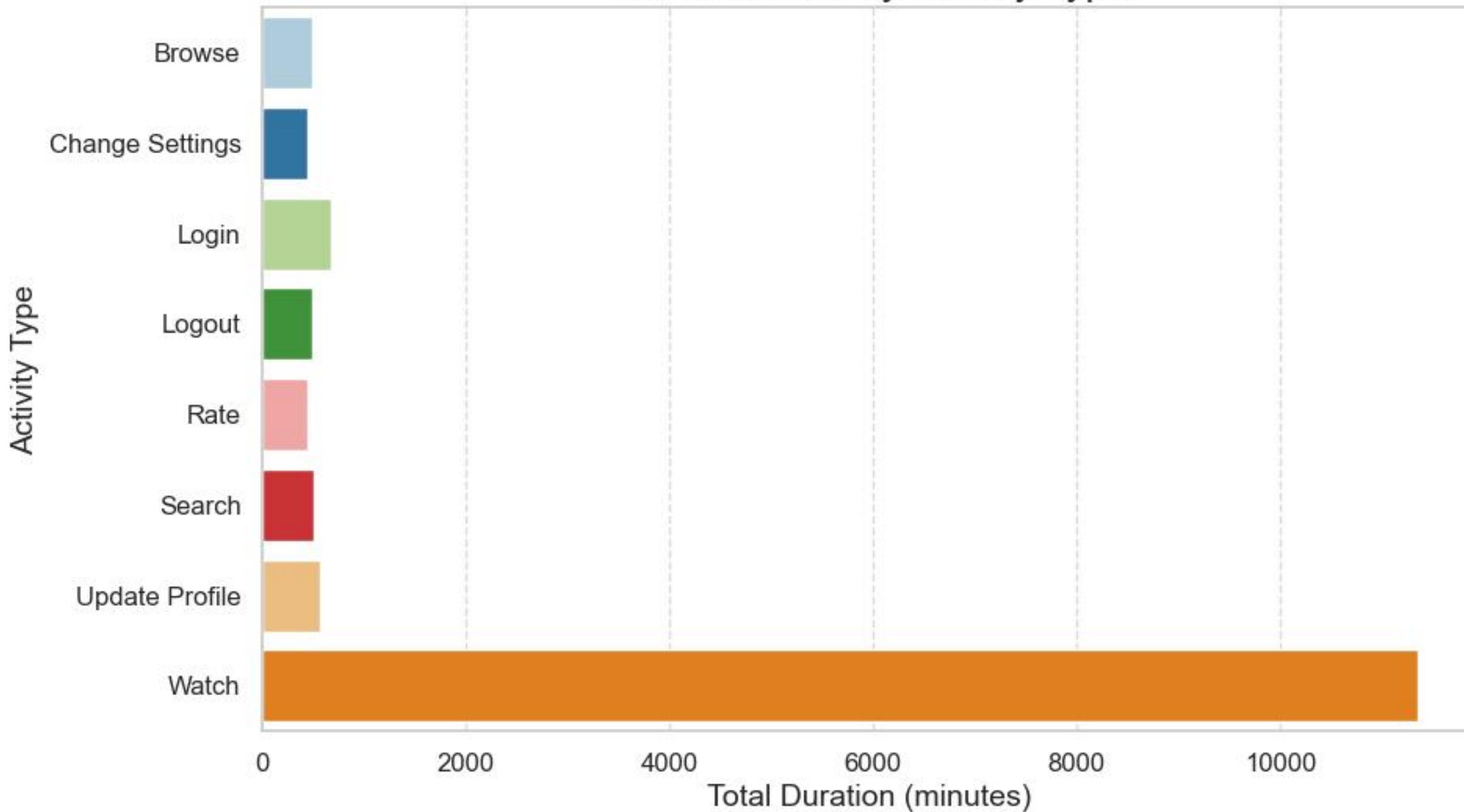
Payment Method Distribution





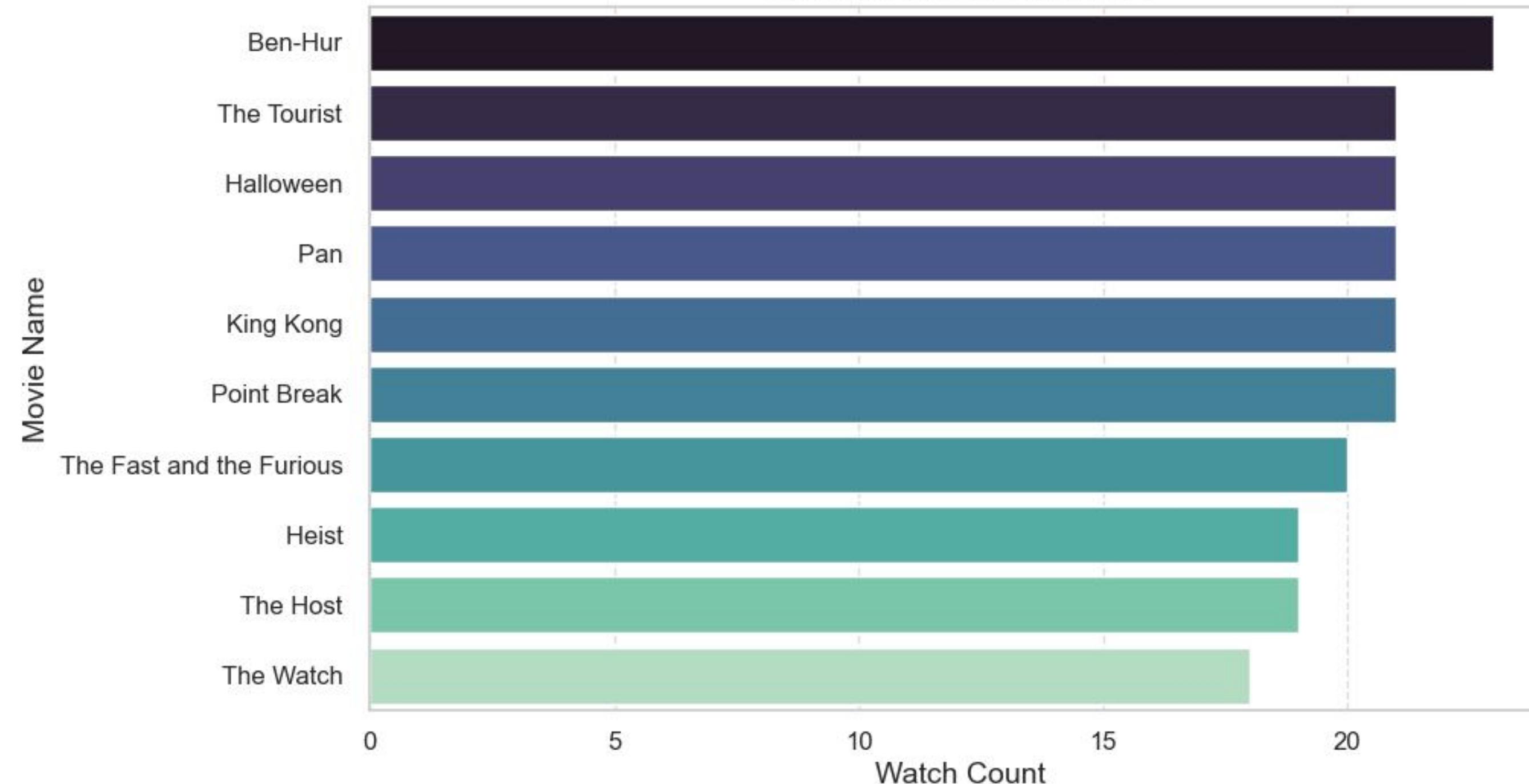


Total Duration by Activity Type

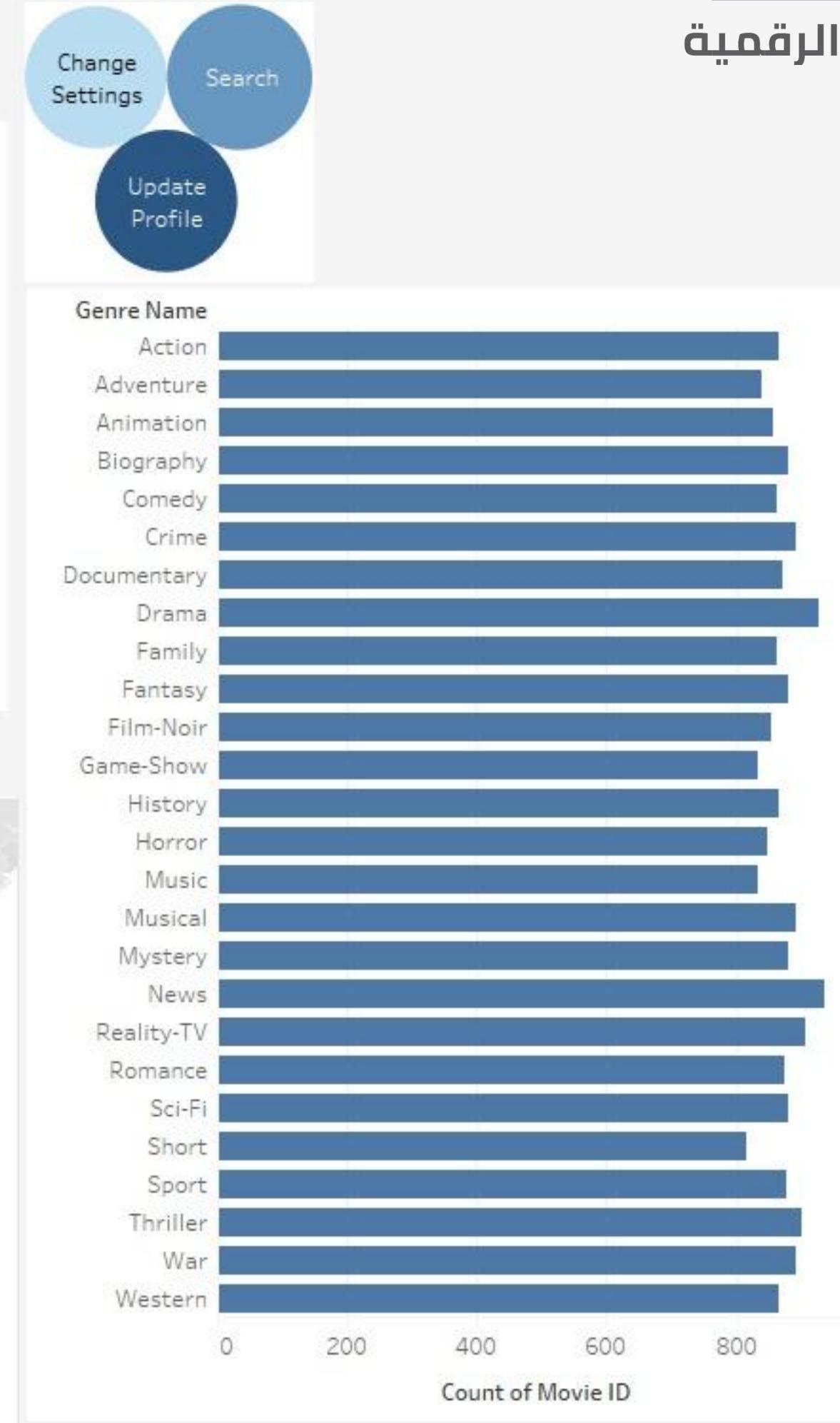
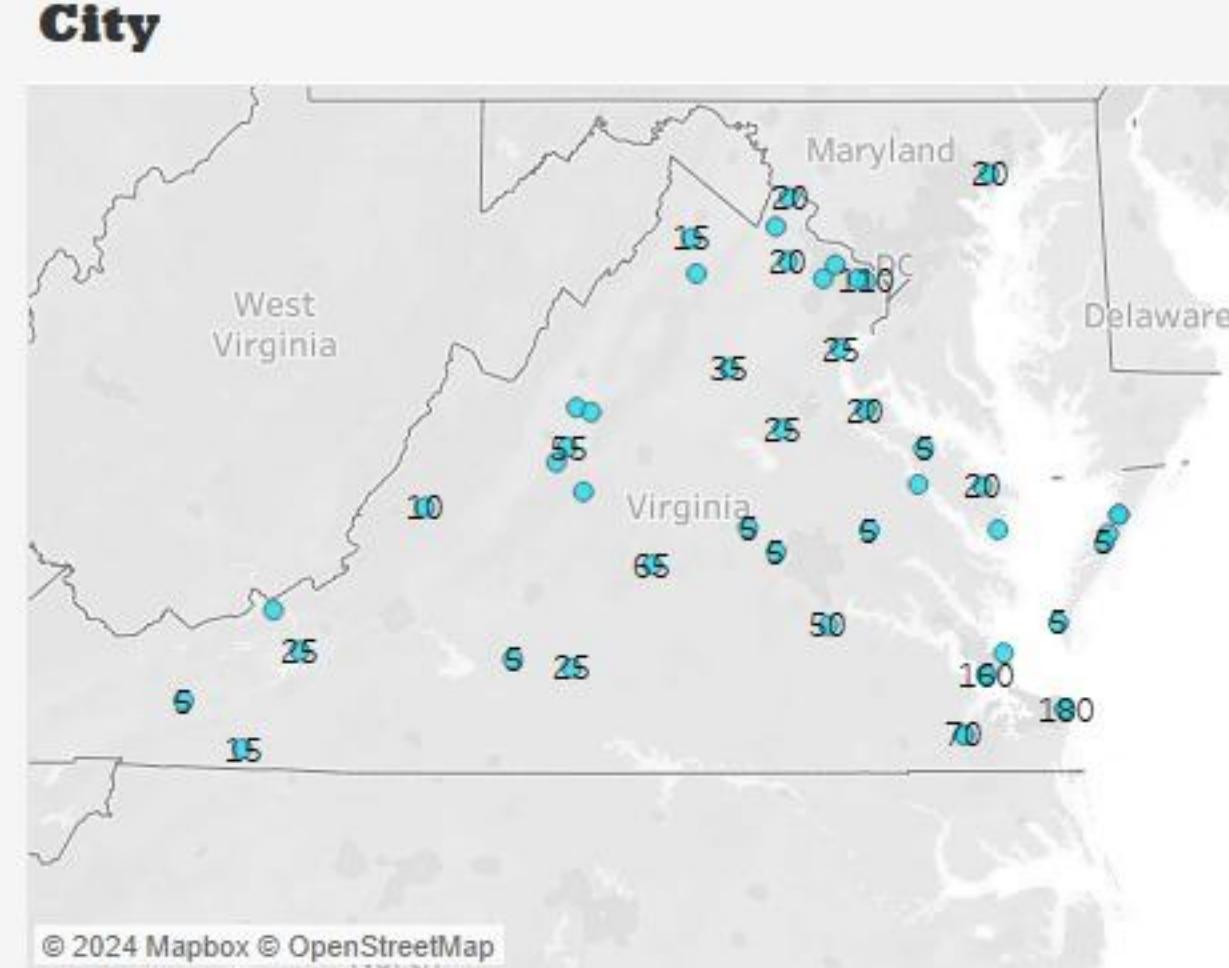
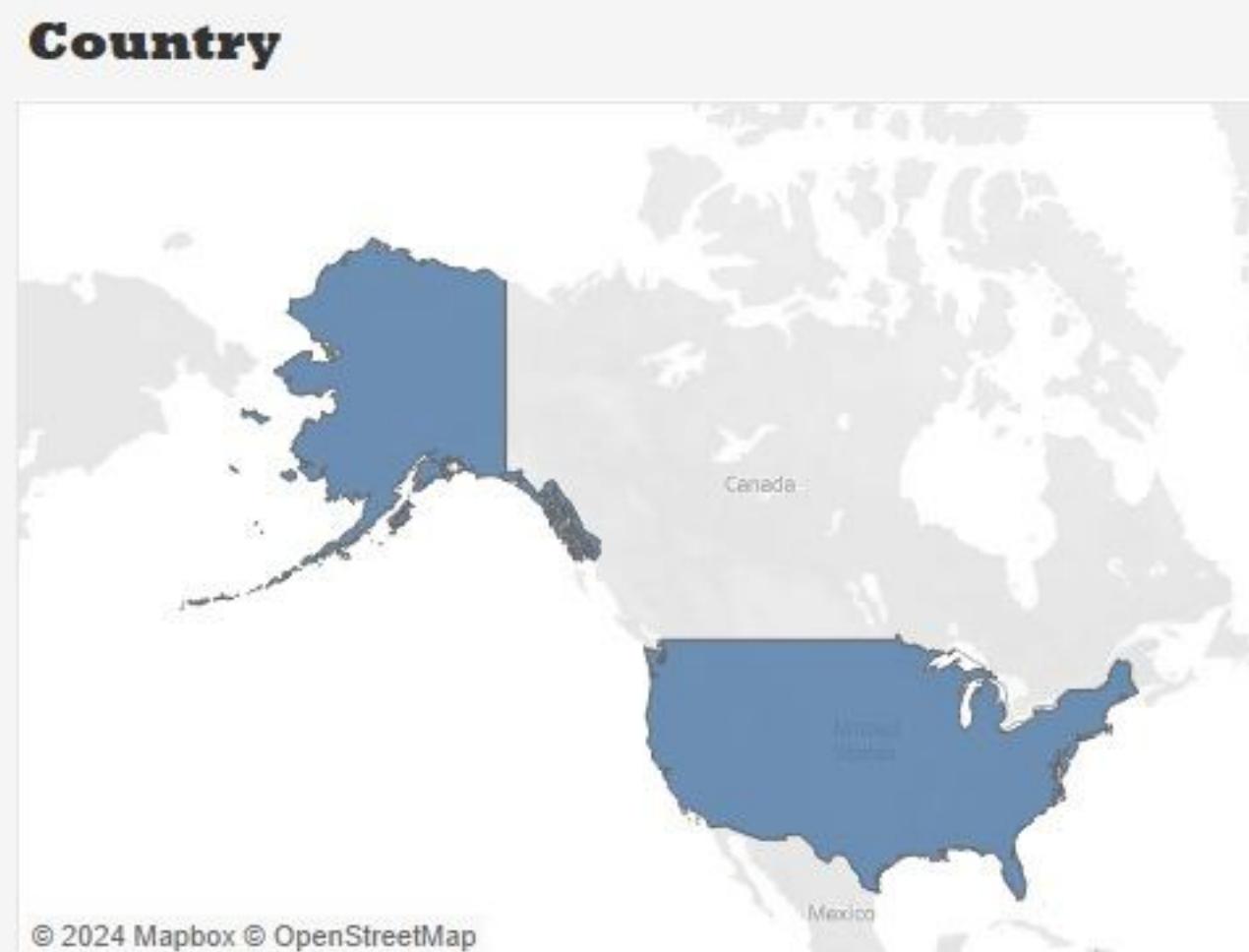
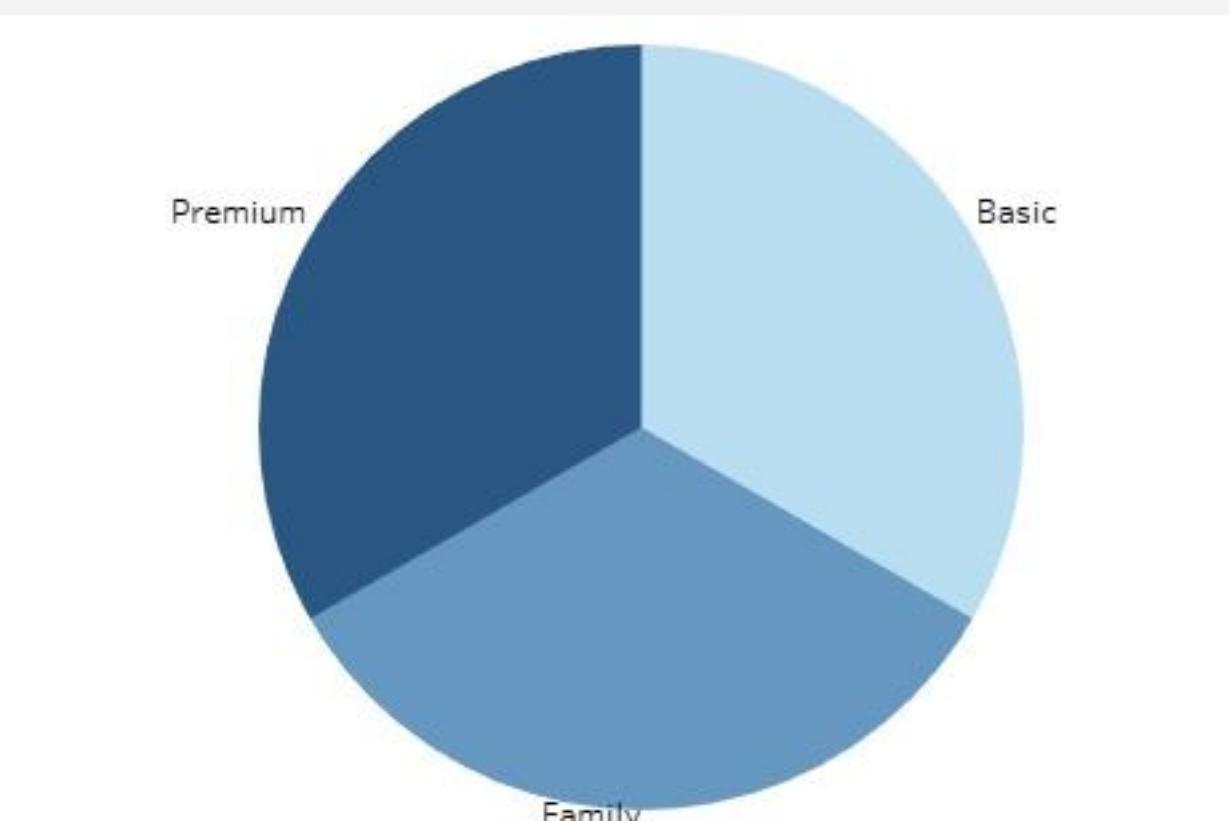
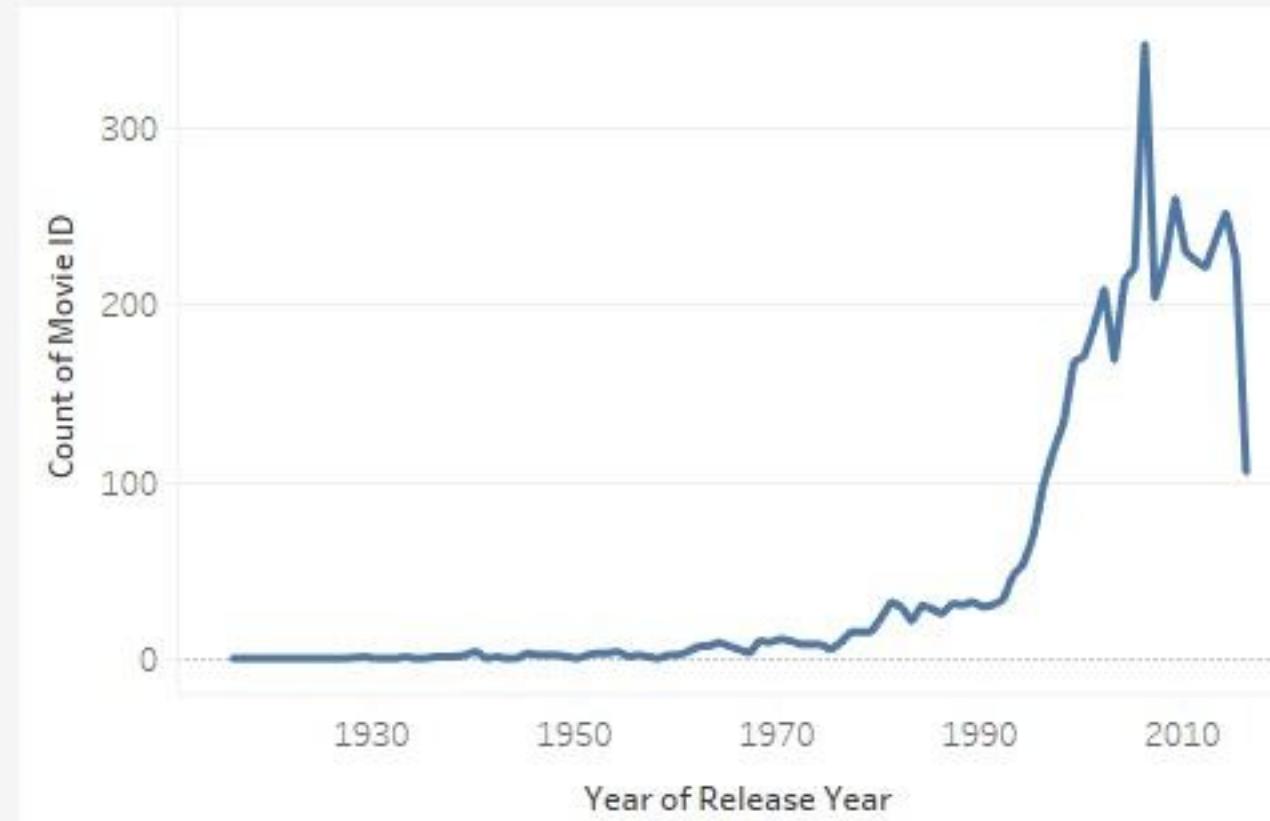




Most Watched Movies

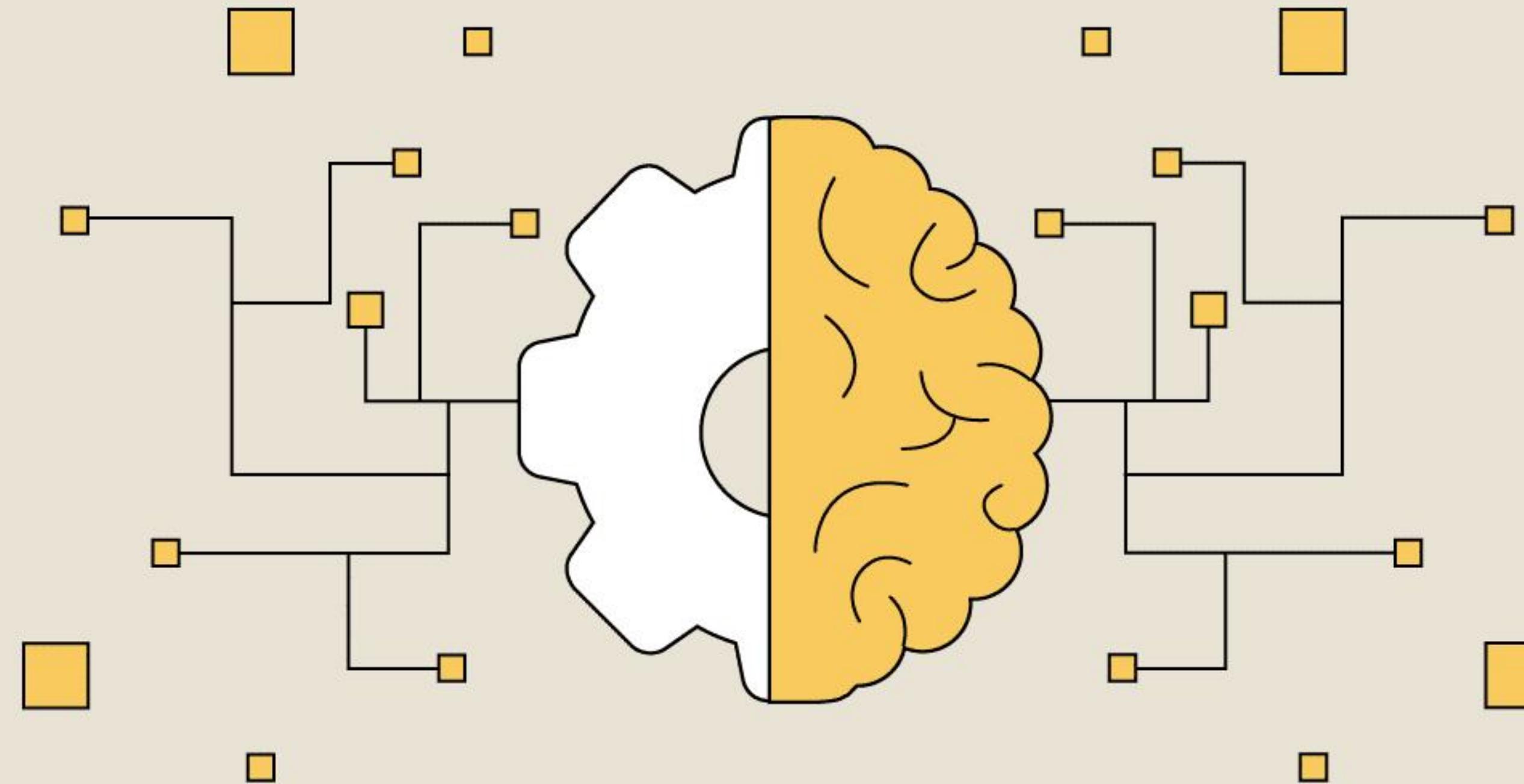


Dashboard



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Data Science



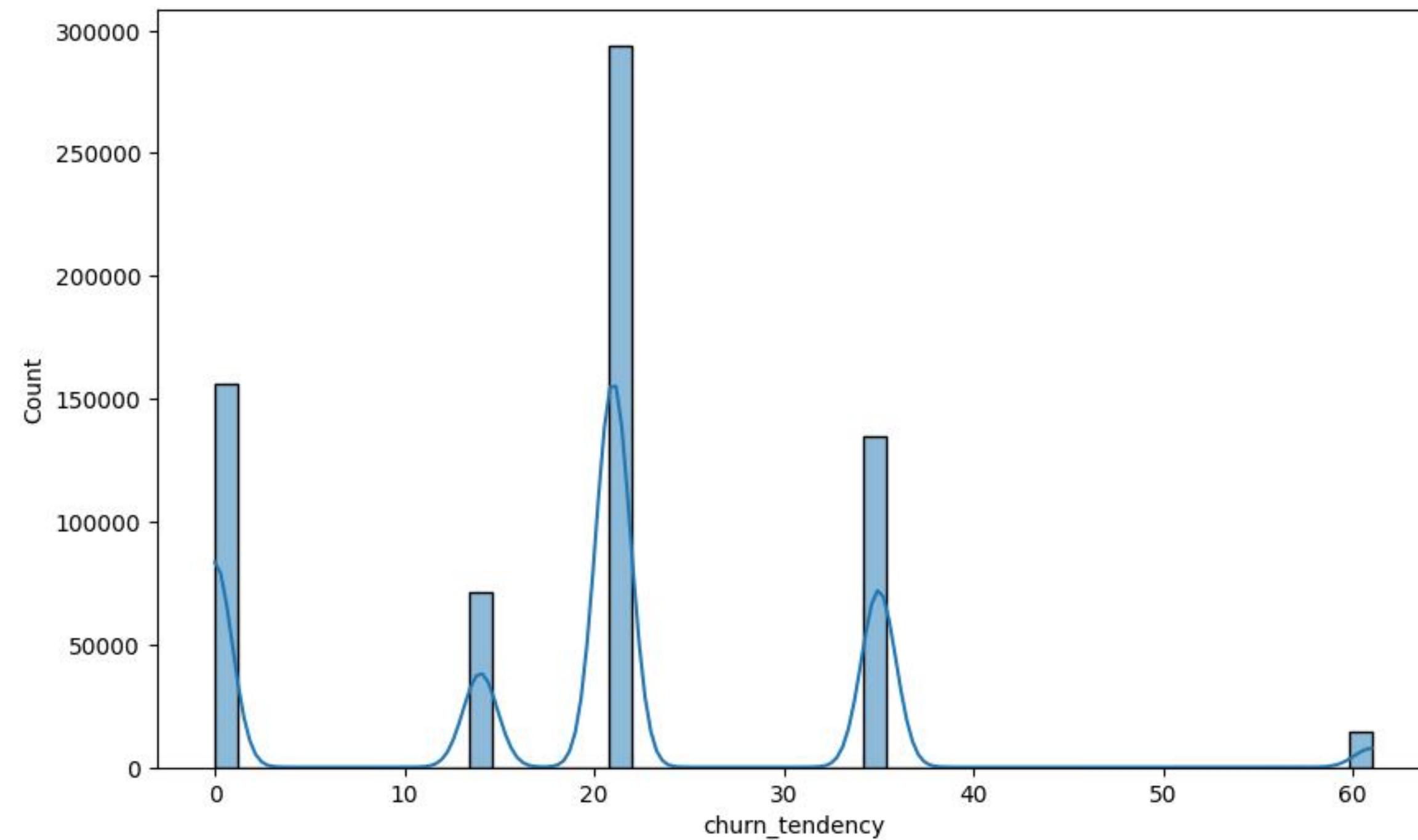


Initial Selected Features:

Feature Category	Features
Customer Activity	ActivityDuration
Customer Activity	CompletionPercentage
Customer Activity	UserRating
Financial	PaymentAmount
User Profile	ProfileAppRating
User Profile	SubscriptionPlan
Customer Demographics	CustomerState
Customer Demographics	CustomerCity
Customer Demographics	CustomerCountry
Customer Demographics	ProfileGender
Customer Demographics	ProfileBirthDate
Engagement	LowEngagementFlag
Satisfaction	LowSatisfactionFlag

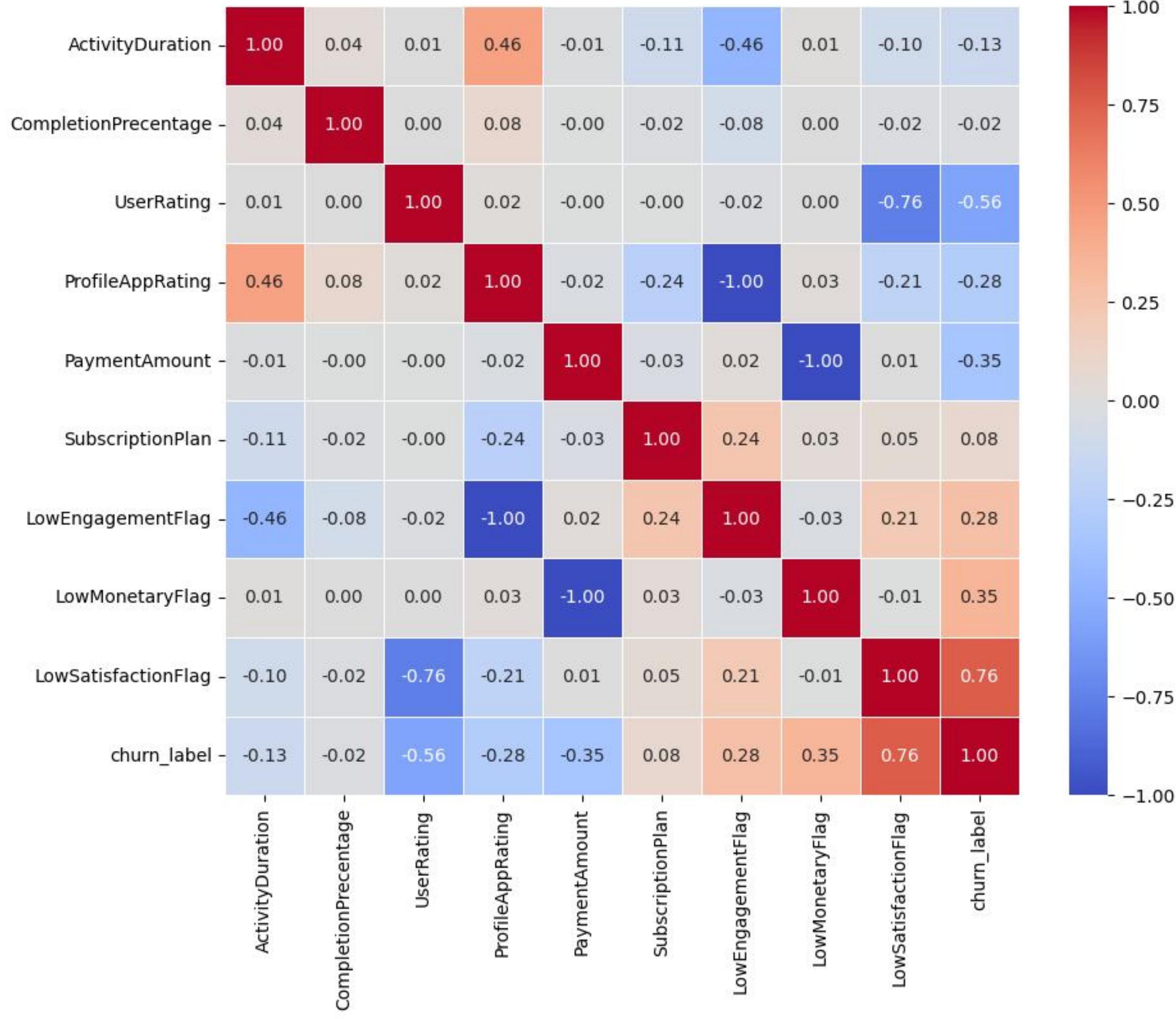
Final Selected Features:

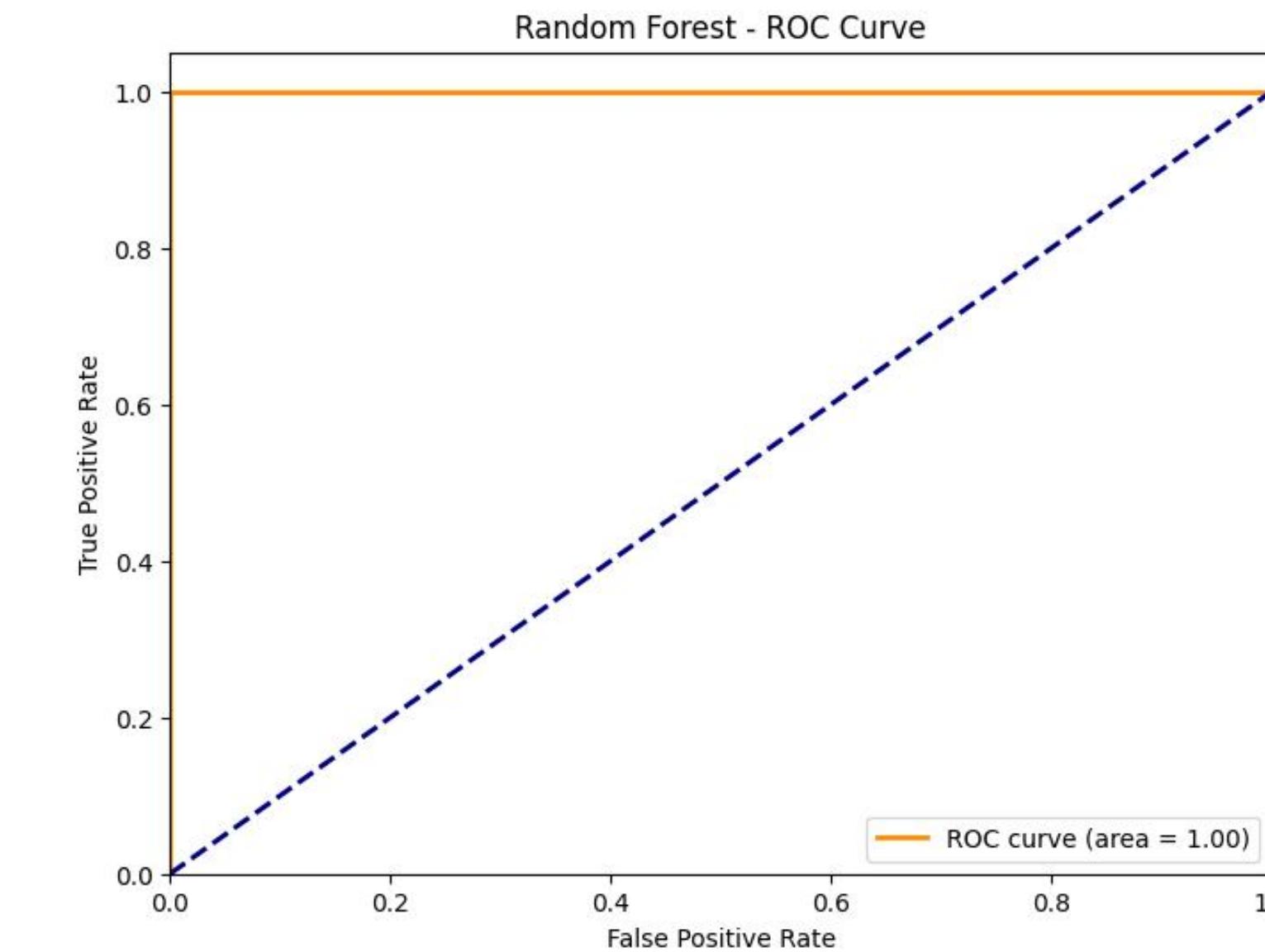
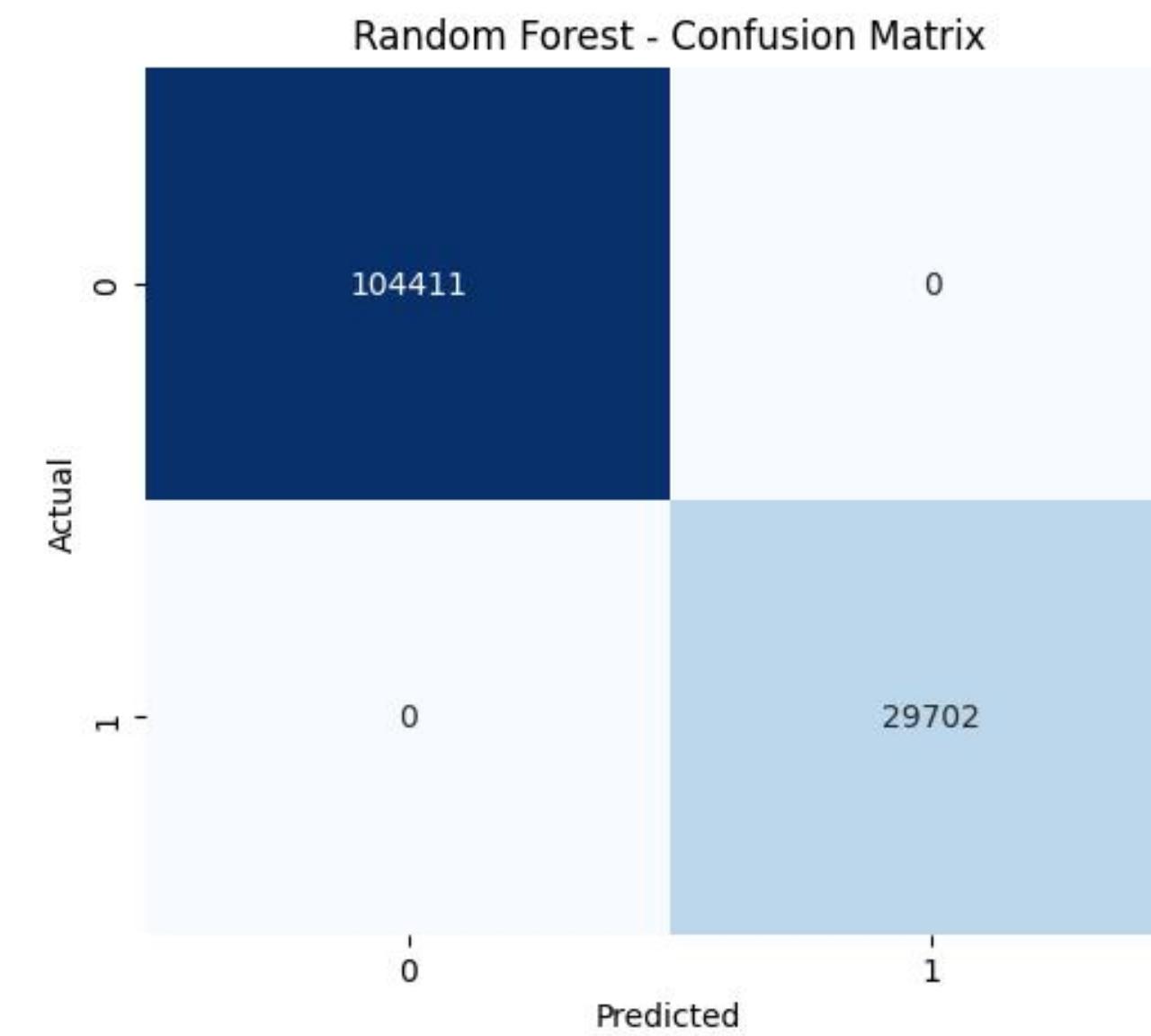
Final Selected Features
LowSatisfactionFlag
LowMonetaryFlag
LowEngagementFlag
PaymentAmount
ProfileAppRating
UserRating
SubscriptionPlan

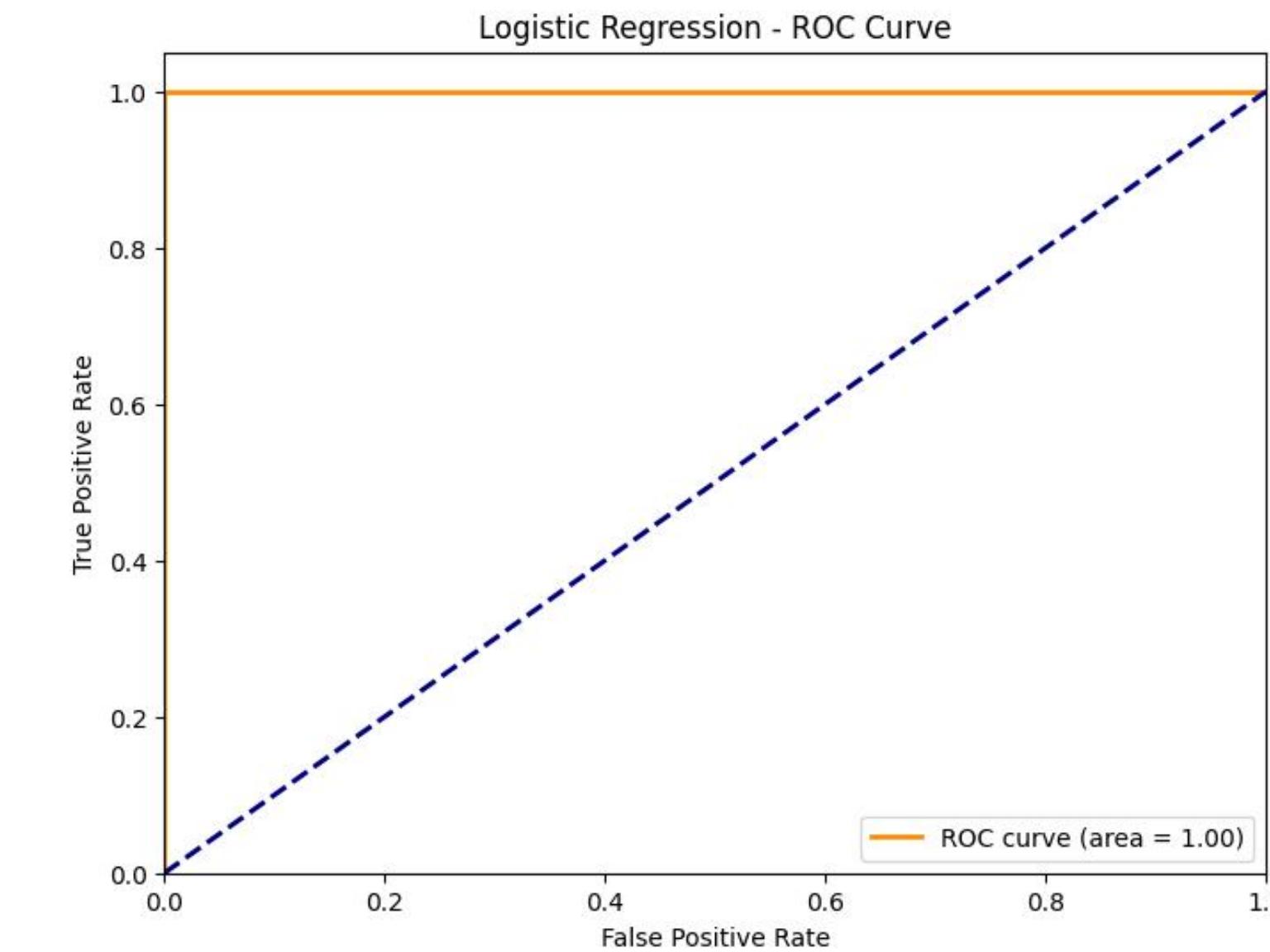
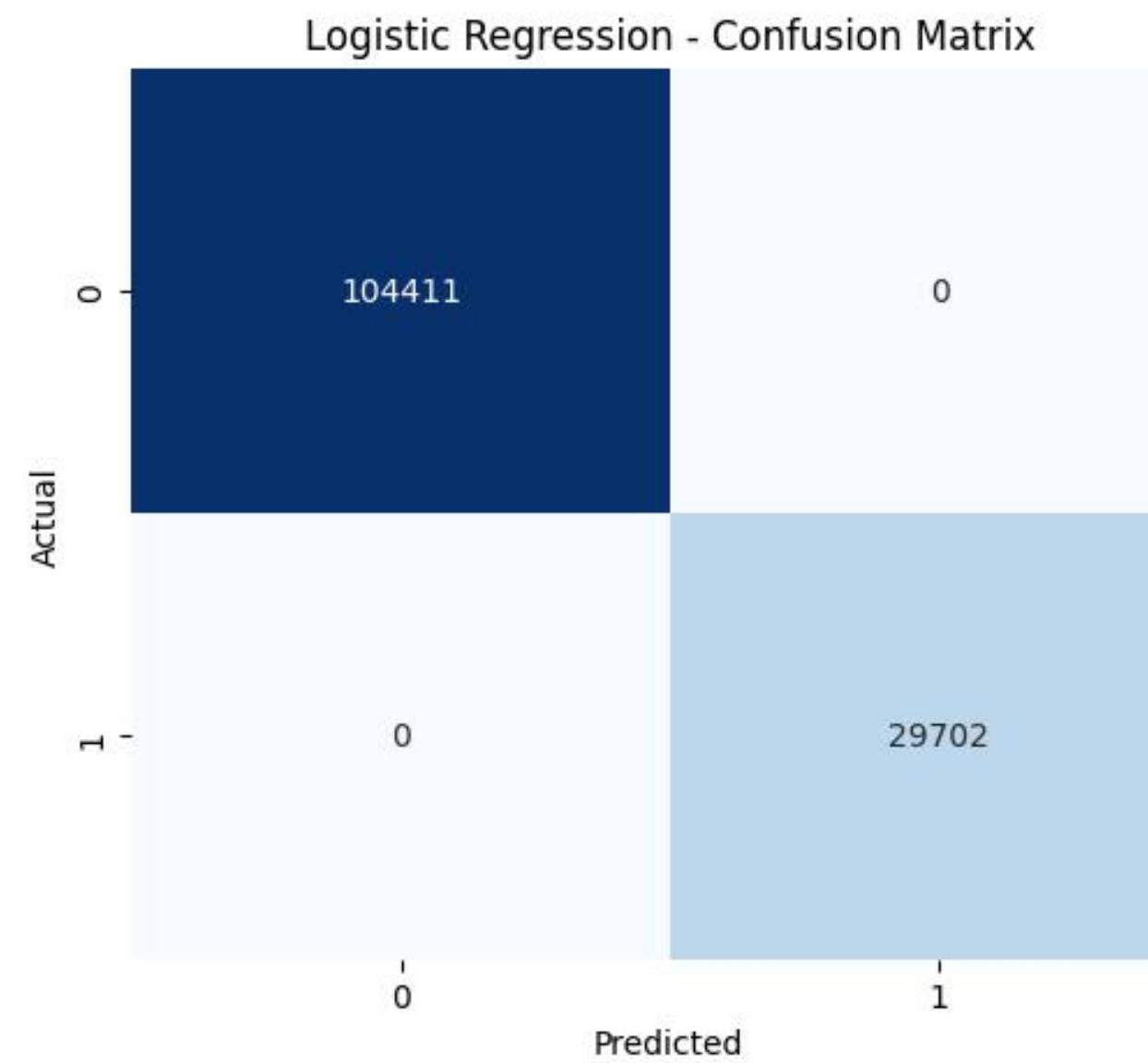


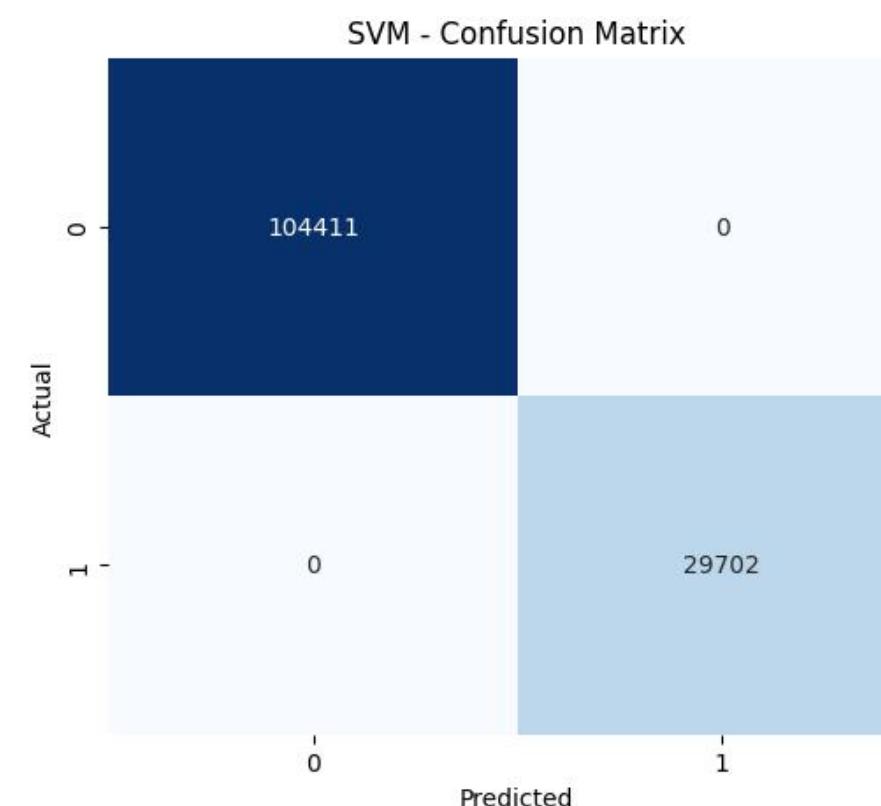
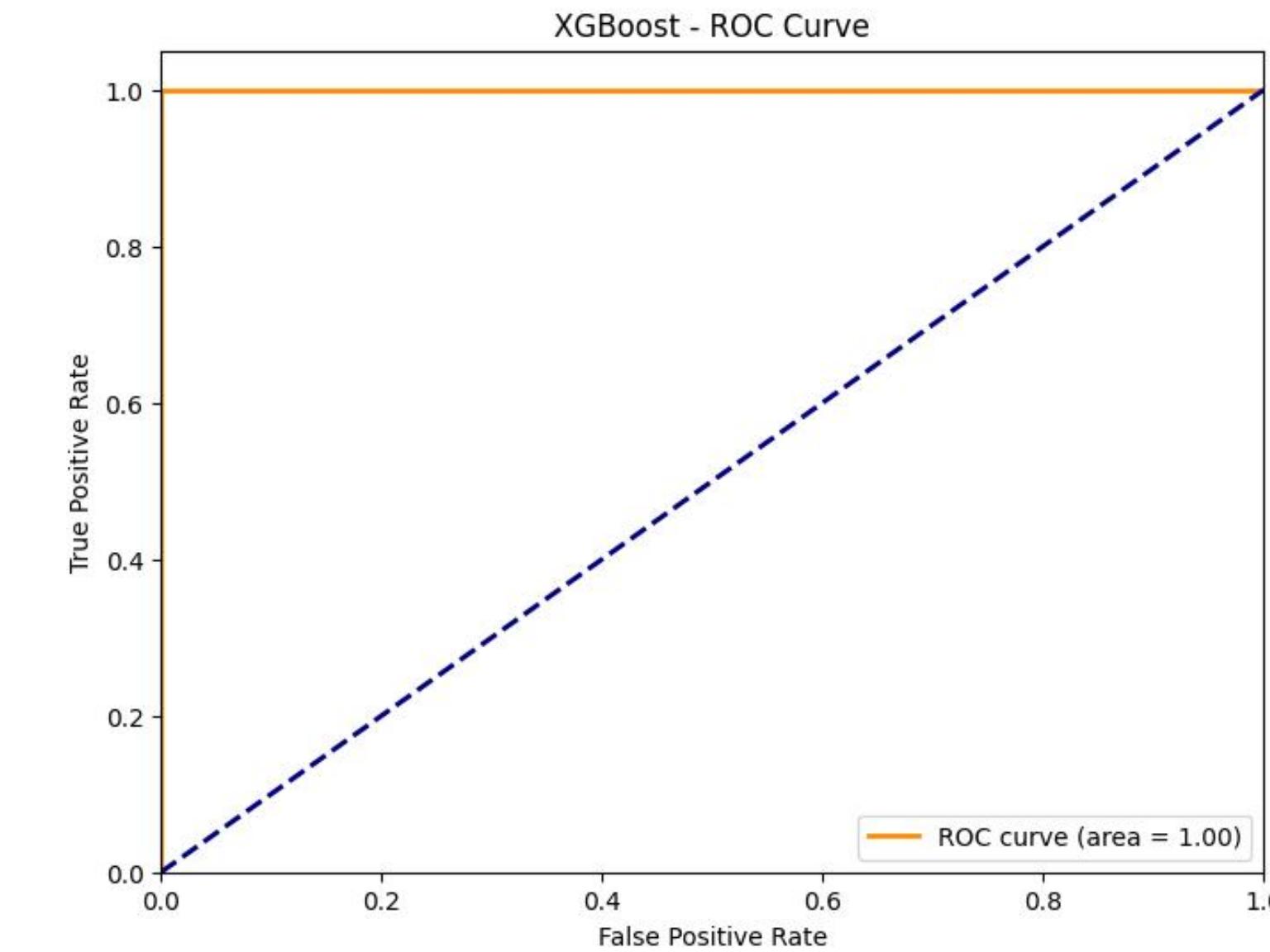
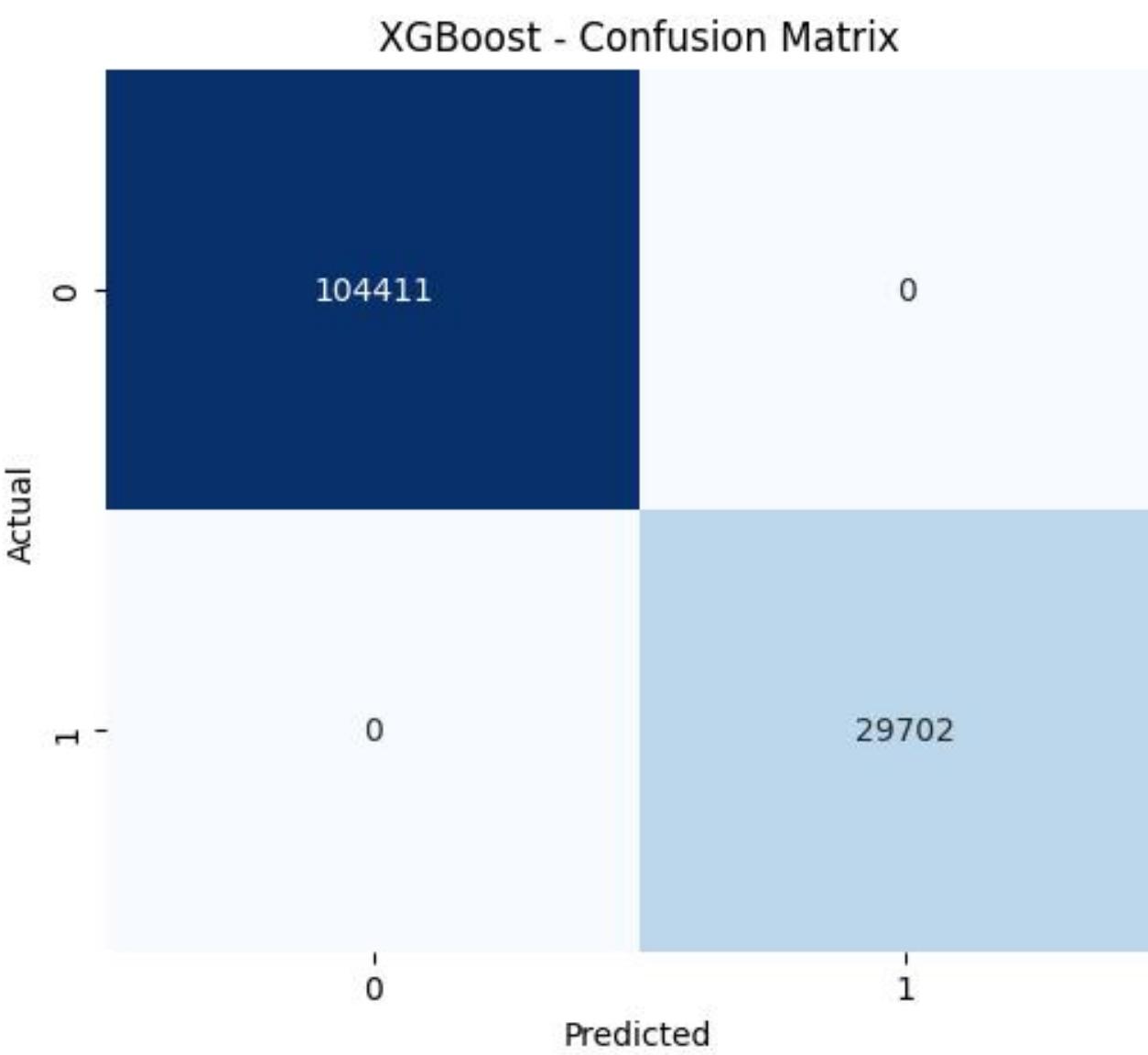


Correlation Matrix of Selected Features



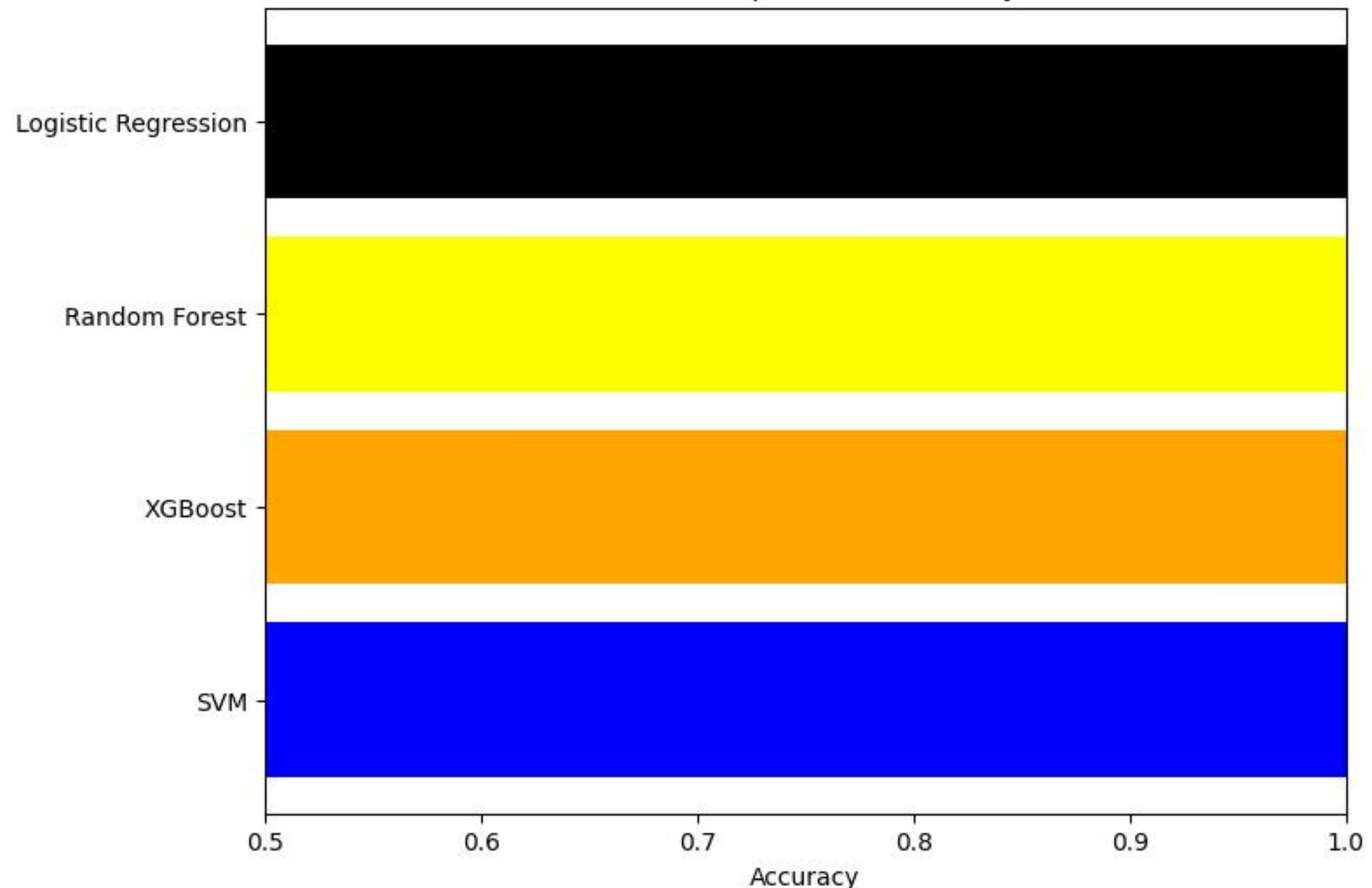






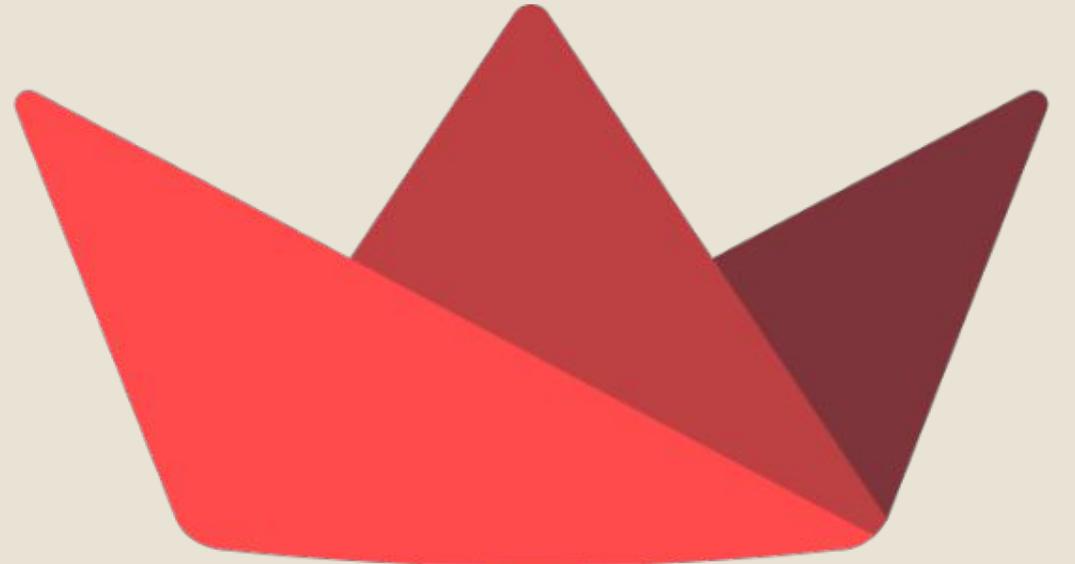


Model Comparison - Accuracy



5

Streamlit App



Streamlit



≡

Customer Churn Prediction App

Enter Customer ID

Get Churn Prediction

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“

Without data, all we have is an opinion.

Edward Deming

”

THANK
YOU

Reach out to us if you have questions.