

Phase 4 Project Non-Technical Presentation



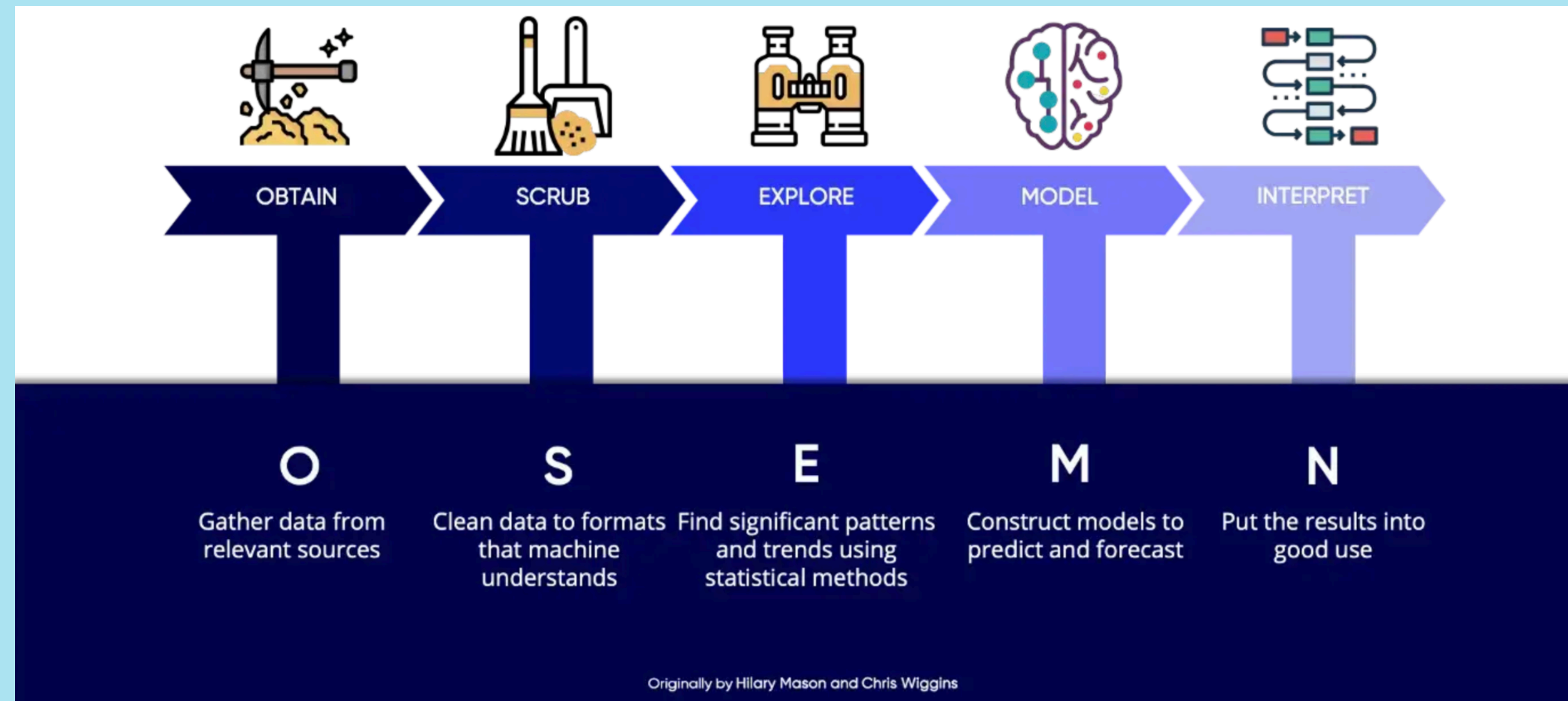
MovieLens Recommendation System

Business Understanding

Client	Business Goal	Data
-Nu-Stream- An Emerging Movie Streaming Company	Create an app that successfully recommends appropriate movies to users	MoiveLens Dataset Contains over -9,000 Movies -6,000 Users -100,000 Reviews

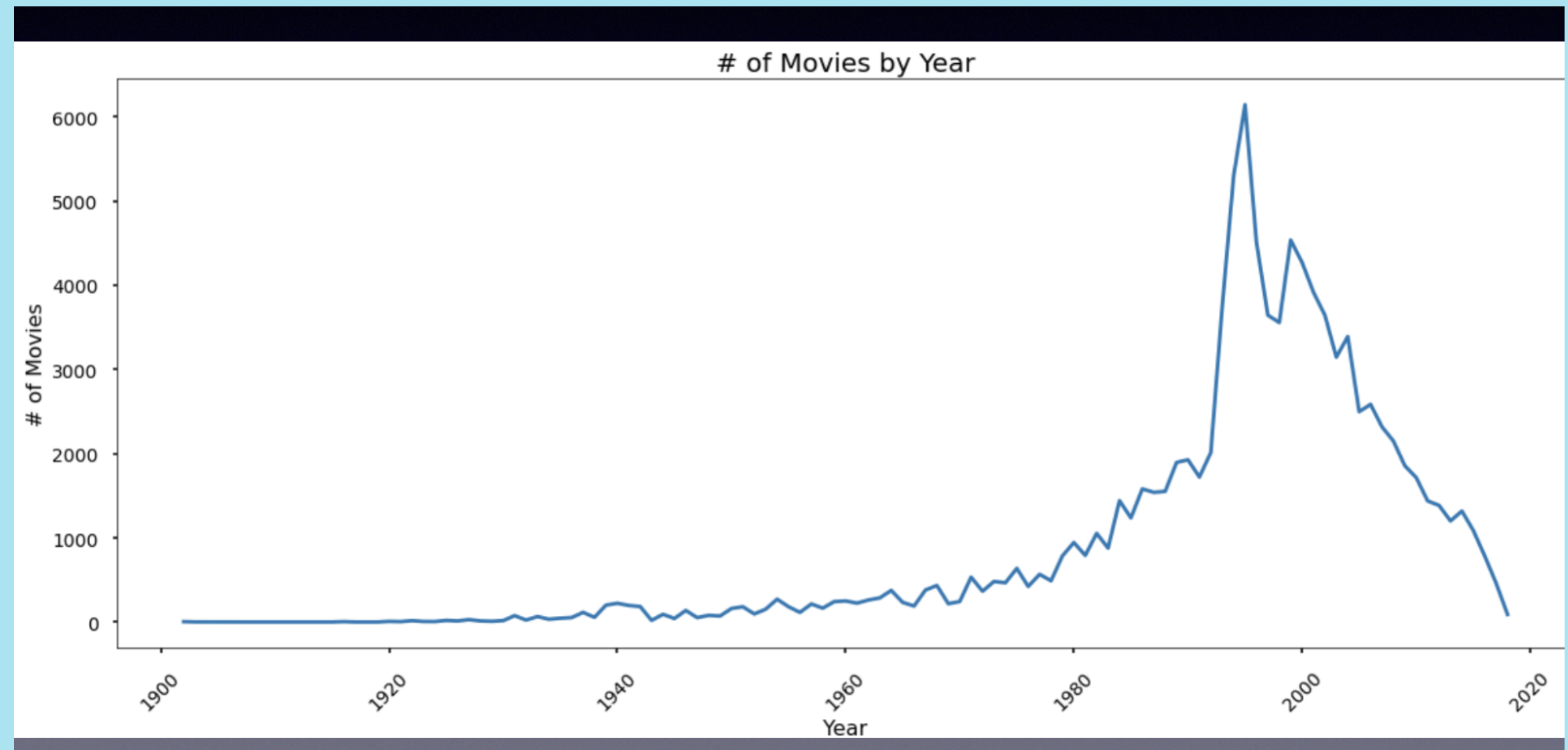
Data Preparation

- Data Science Methodology was used to ensure the best results for our model



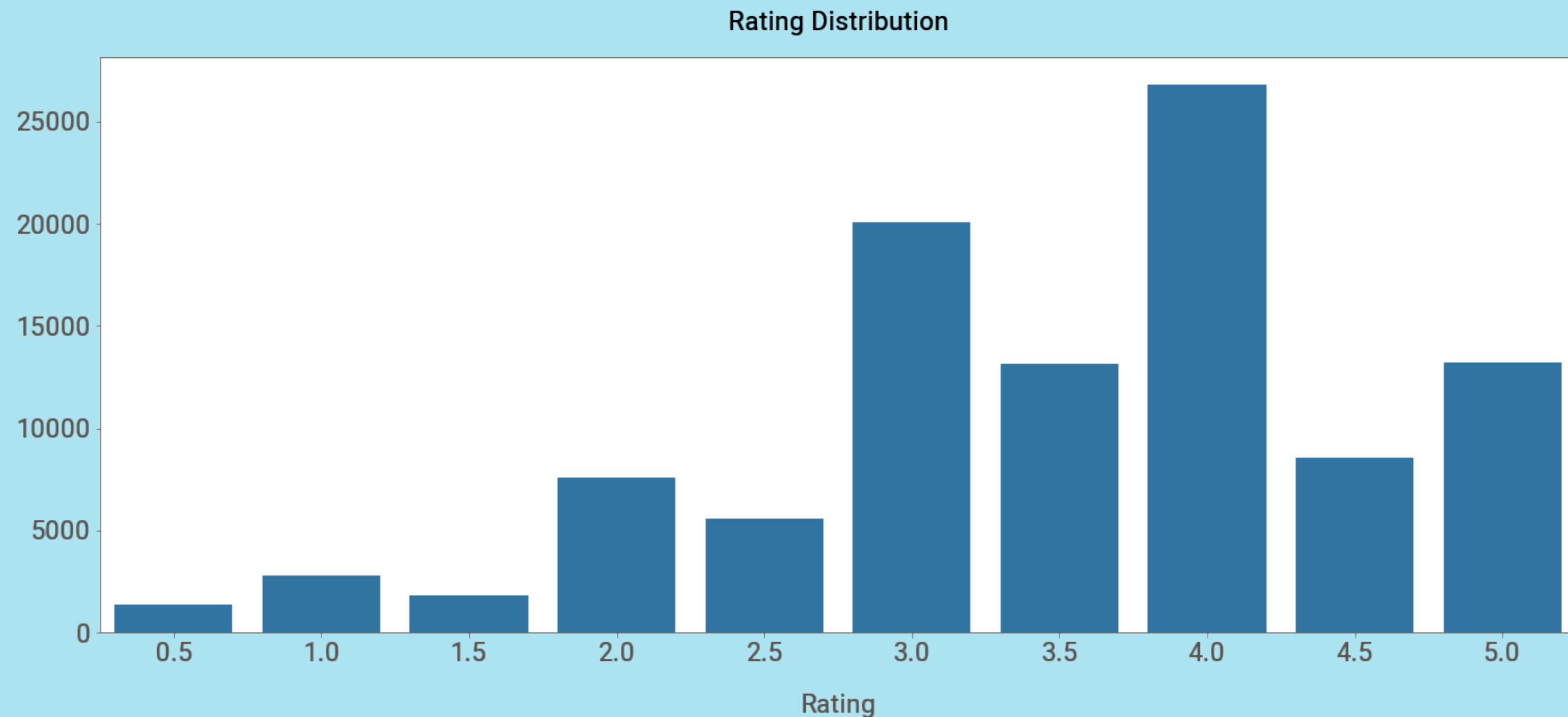
Data Understanding

- Some info about the data:
 - Movies Primarily from 1990s through 2018



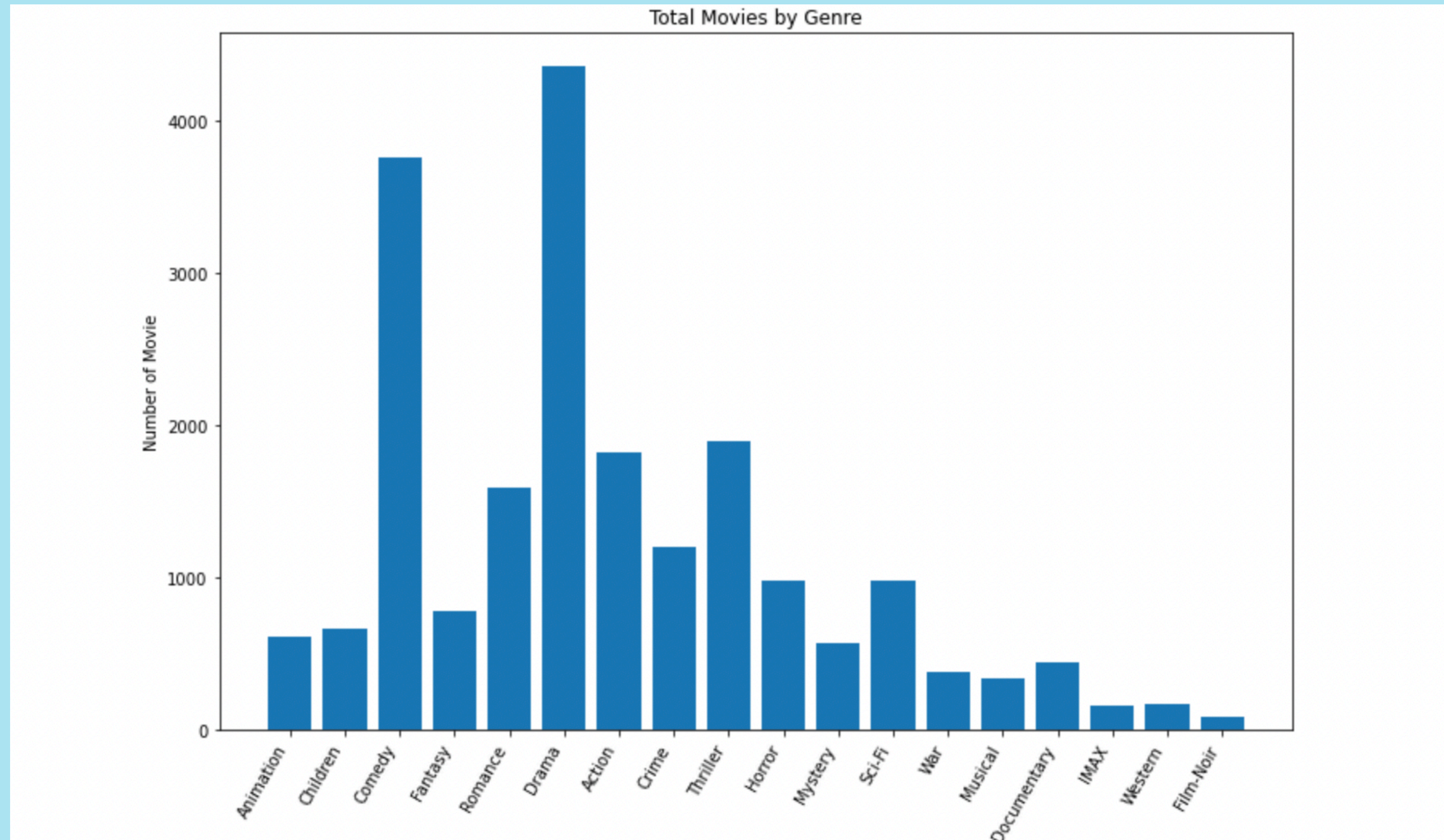
Data Understanding

- Some info about the data:
 - Average Rating:
 - **3.26**
 - Most Common Rating:
 - **4.00**



Data Understanding

- Some info about the data:
- Top Genres:
 - **Drama**
 - **Comedy**
 - **Thriller**

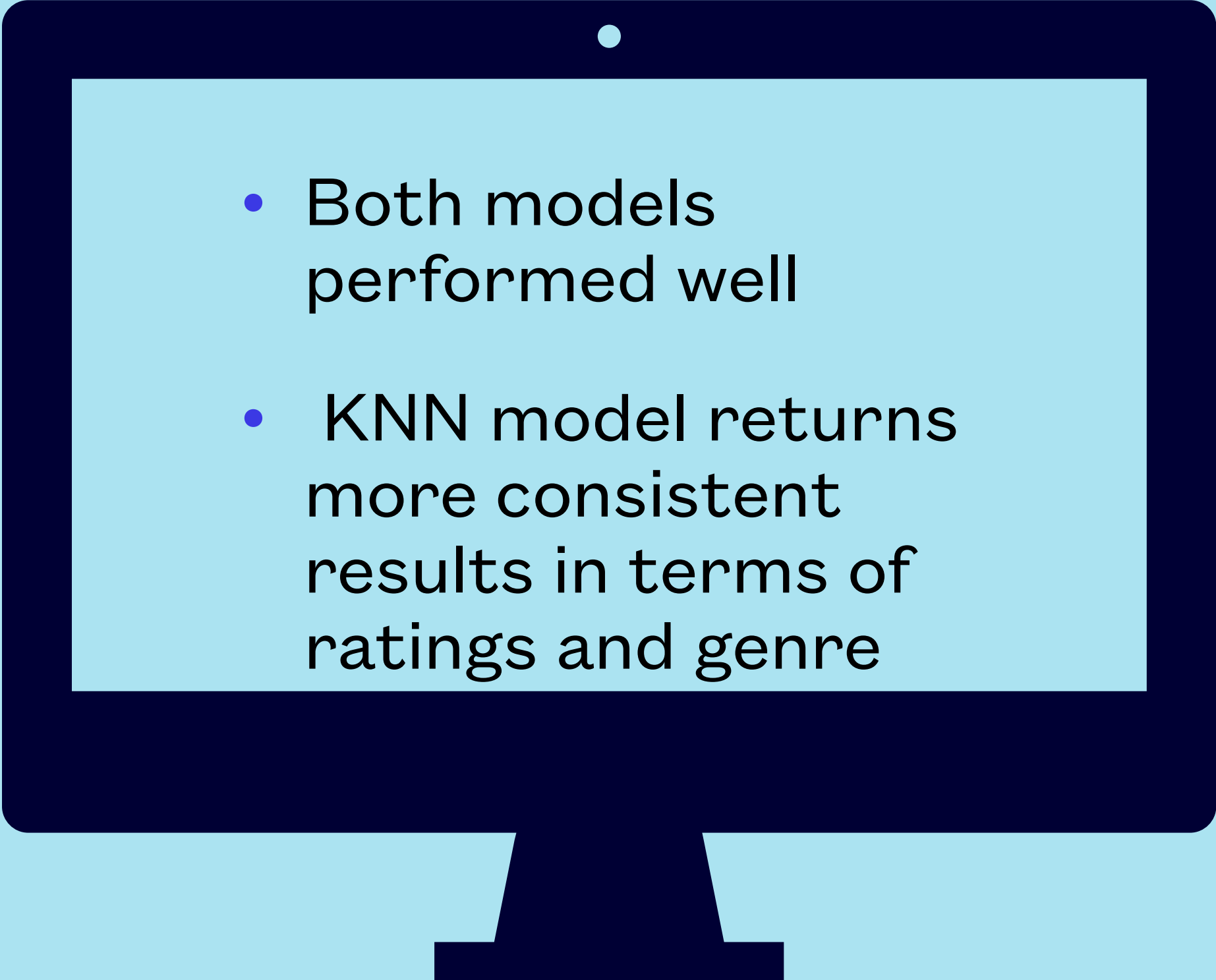


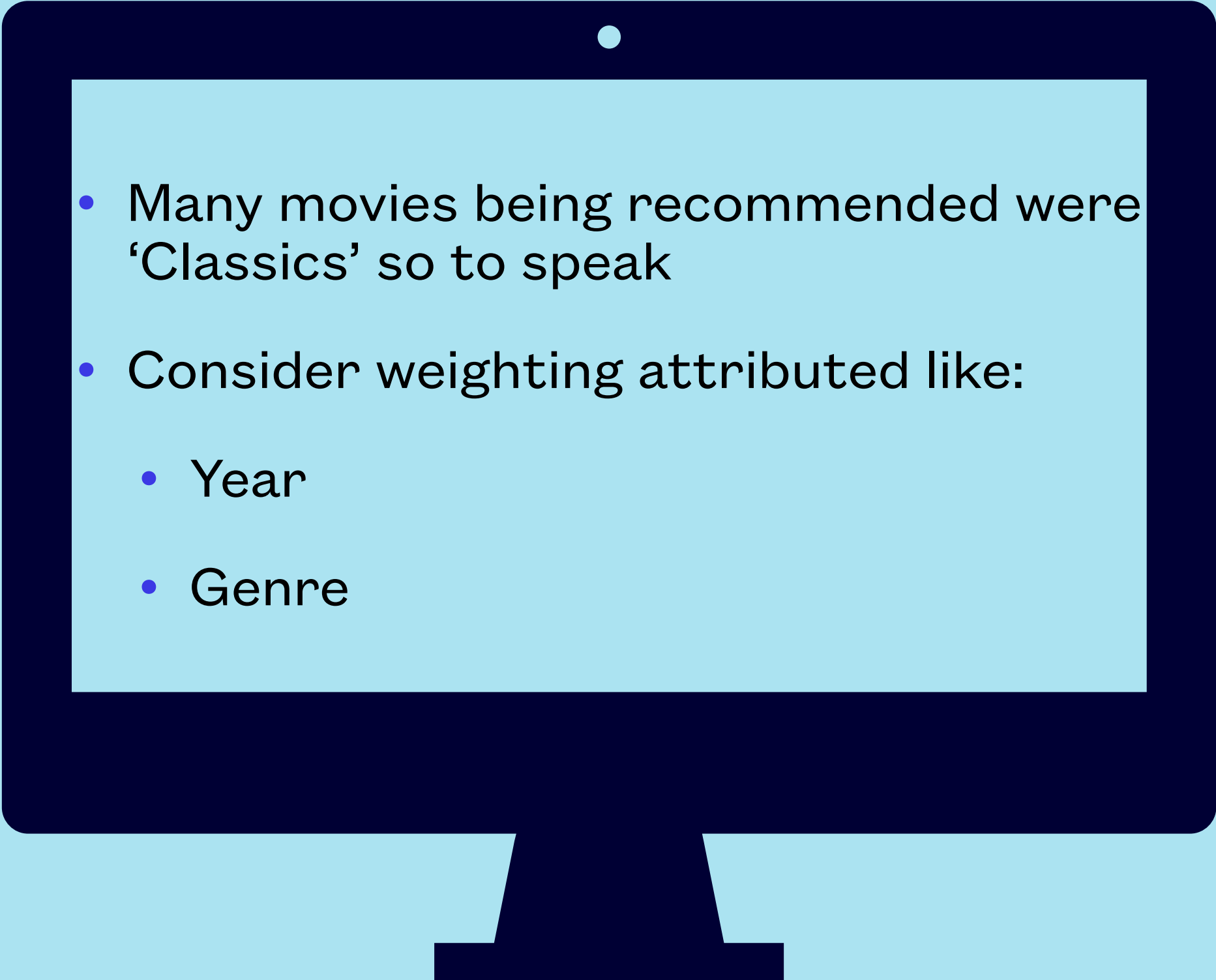
Models

- 2 Different Machine Learning algorithms were used:
 - Singular Value Decomposition(SVD)
 - K-Nearest Neighbor
 - This metrics tells us how far our predictions are from the actual rating
 - Example: If a user rated a movie 3.5 stars our model would predict within .82 stars.

SVD	KNN
RMSE: 0.82	RMSE: 0.84
MAE: 0.63	MAE: 0.64

Evaluating Results & Recommendations

- 
- Both models performed well
 - KNN model returns more consistent results in terms of ratings and genre

- 
- Many movies being recommended were 'Classics' so to speak
 - Consider weighting attributed like:
 - Year
 - Genre

Models

- Making Recommendations for New User:
 - Created a Specific 'Cold-Start' Model
 - More Reviews will Lead to Better Suggestions



Final Recommendation

- The KNN model results shown below reinforce why this models should be used to launch
- Most current movies need to be added to guarantee optimal recommendations
- Take advantage of the 'Cold-Start' Engine to get best results for New Users

```
: # Get the top recommendations for specific user....  
user_id = 608  
recommendations = get_top_n_k(predictions_k,minimum_num_ratings=100, n=5)[user_id]  
  
# Print the recommended movie IDs and predicted ratings  
print([(iid, rating) for (iid, rating) in recommendations])
```

```
[('Dark Knight, The (2008)', 4.215843395524766), ('Prisoners (2013)', 4.212079225026457), ('Spotlight (2015)', 4.1  
93783809287072), ('Departed, The (2006)', 4.1654399244949305), ('There Will Be Blood (2007)', 4.147380483286304)]
```

KNN Recommendation System Results:

So the function ran and created a list of users and estimated ratings like we hoped. To make a bit more sense of it in the cell above:

Thank YOU!!!

Questions??

Email: briodonn1021@gmail.com