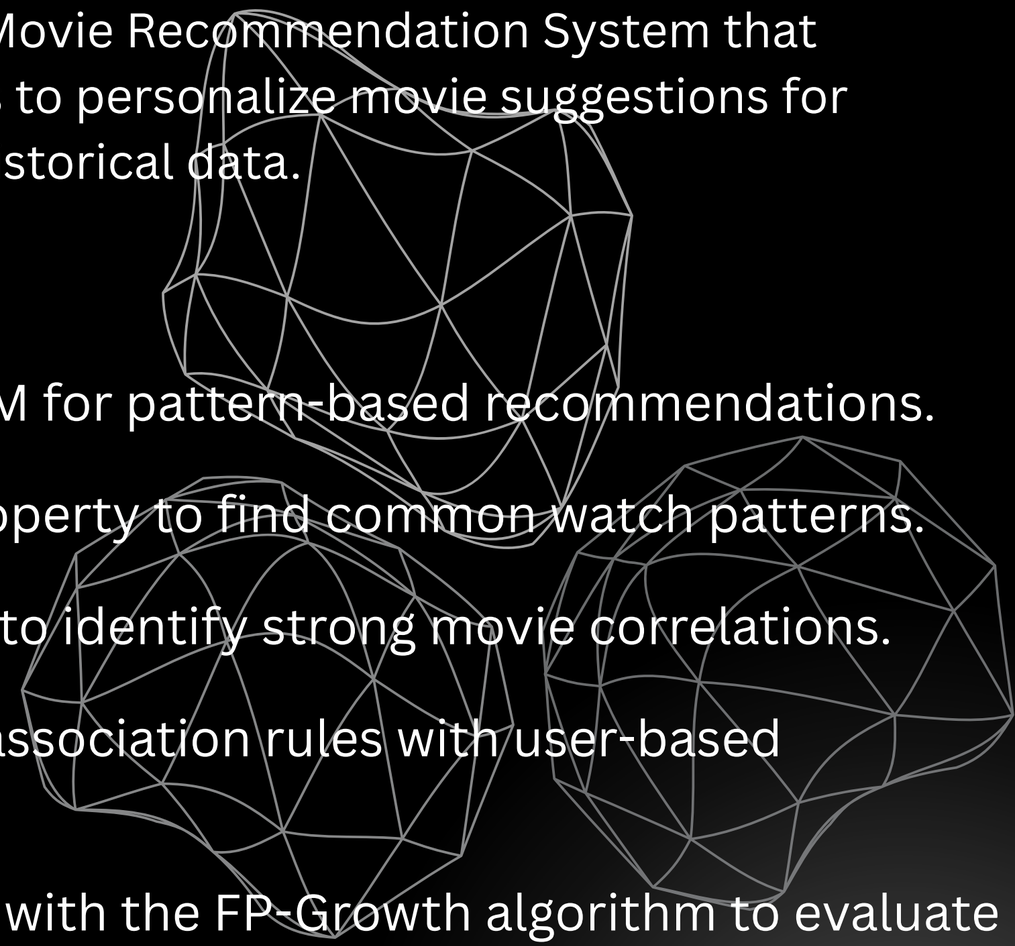
MOVIE RECOMMENDATION SYSTEM

Associative Rule Mining-Apriori

DATASET SIZE -2GB

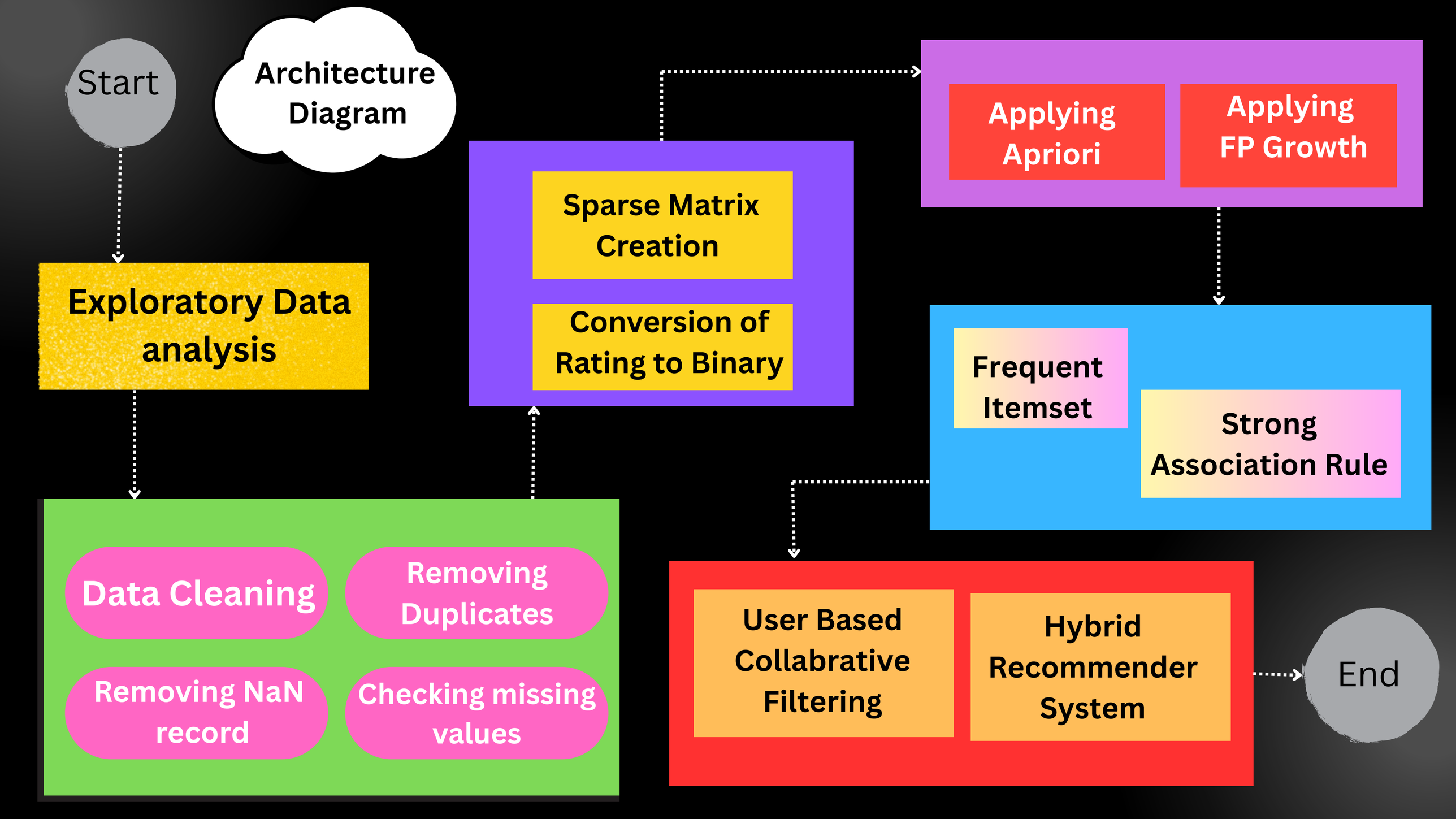
OBJECTIVE:

The objective of this project is to design and implement a Movie Recommendation System that utilizes collaborative and content-based filtering techniques to personalize movie suggestions for users based on their interests and historical data.



KEY GOALS:

- Implement a movie recommender using Apriori and ARM for pattern-based recommendations.
- Generate frequent movie itemsets using the Apriori property to find common watch patterns.
- Derive association rules using support and confidence to identify strong movie correlations.
- Provide personalized recommendations by combining association rules with user-based collaborative filtering.
- Compare the performance of the Apriori-based system with the FP-Growth algorithm to evaluate efficiency and scalability in extracting frequent itemsets.


Start
Architecture Diagram
Exploratory Data analysis
Data Cleaning
Removing Duplicates
Removing NaN record
Checking missing values
Sparse Matrix Creation
Conversion of Rating to Binary
Applying Apriori
Applying FP Growth
Frequent Itemset
Strong Association Rule
User Based Collabrative Filtering
Hybrid Recommender System
End

Design Diagram

Module 1: Preprocessing

- Data Cleaning
- Removing Duplicates
- Removing NaN Records
- Checking missing values

Module 2: Matrix Creation

- Sparse Matrix Creation

To store customer ratings in compressed format

- Convert Rating To Binary

Rating above threshold(3) are considered liked (1) and others (0)

Module 3 : RULE MINING

- Applying apriori
- Frequent Itemsets
- Strong Association Rules (lift > 1.0)

Module 4 : Hybrid Recommender System

- User Based Collabrative Filtering (cosine similarity Movie (j,m))
- Hybrid Movie Recommender

CF score+ Apriori Score