Movie Recommender System

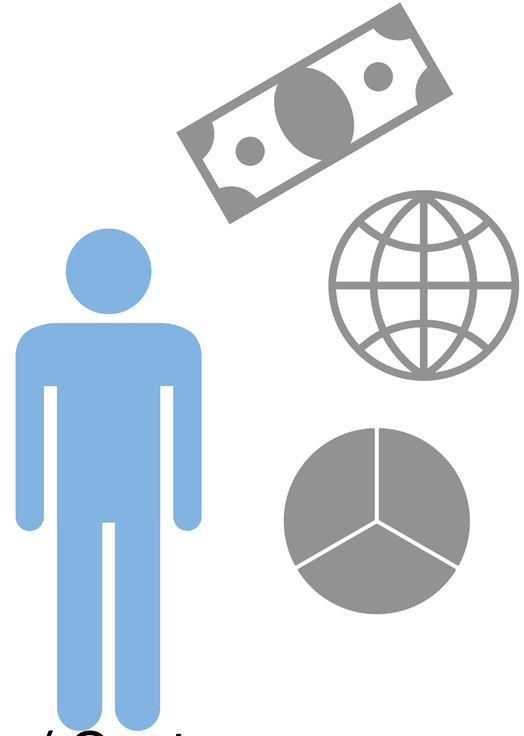
Bootcamp Final Project

Shaikha AlBilais
Data Science Trainee

Recommender System

Service / Product

Offer / Predict



User / Customer

Recommender System - Why?

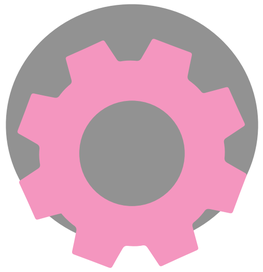
Data Science Applications

Popular + Helpful

Several Methods

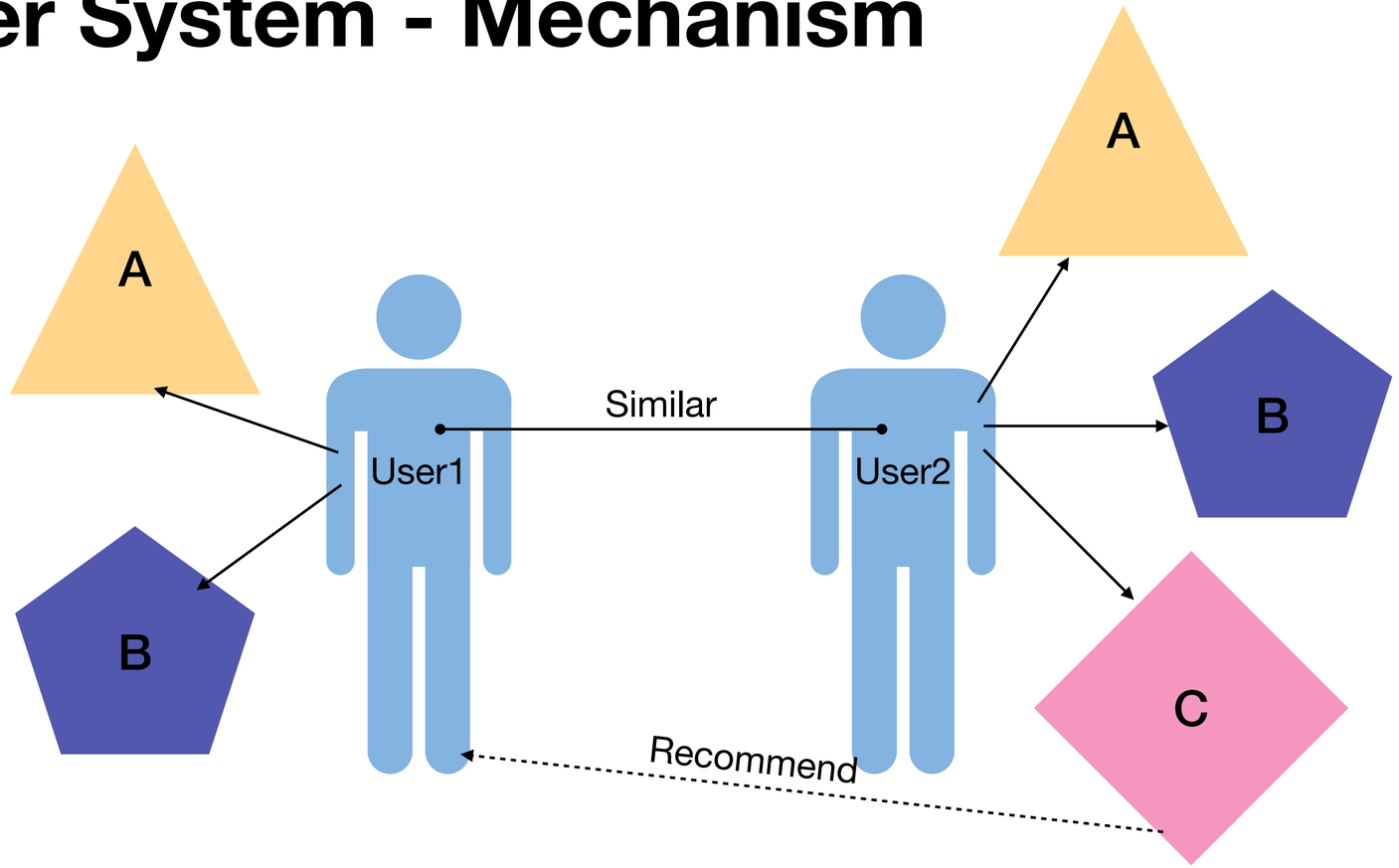
Many Applications

Recommender System - Applications



Recommender System - Mechanism

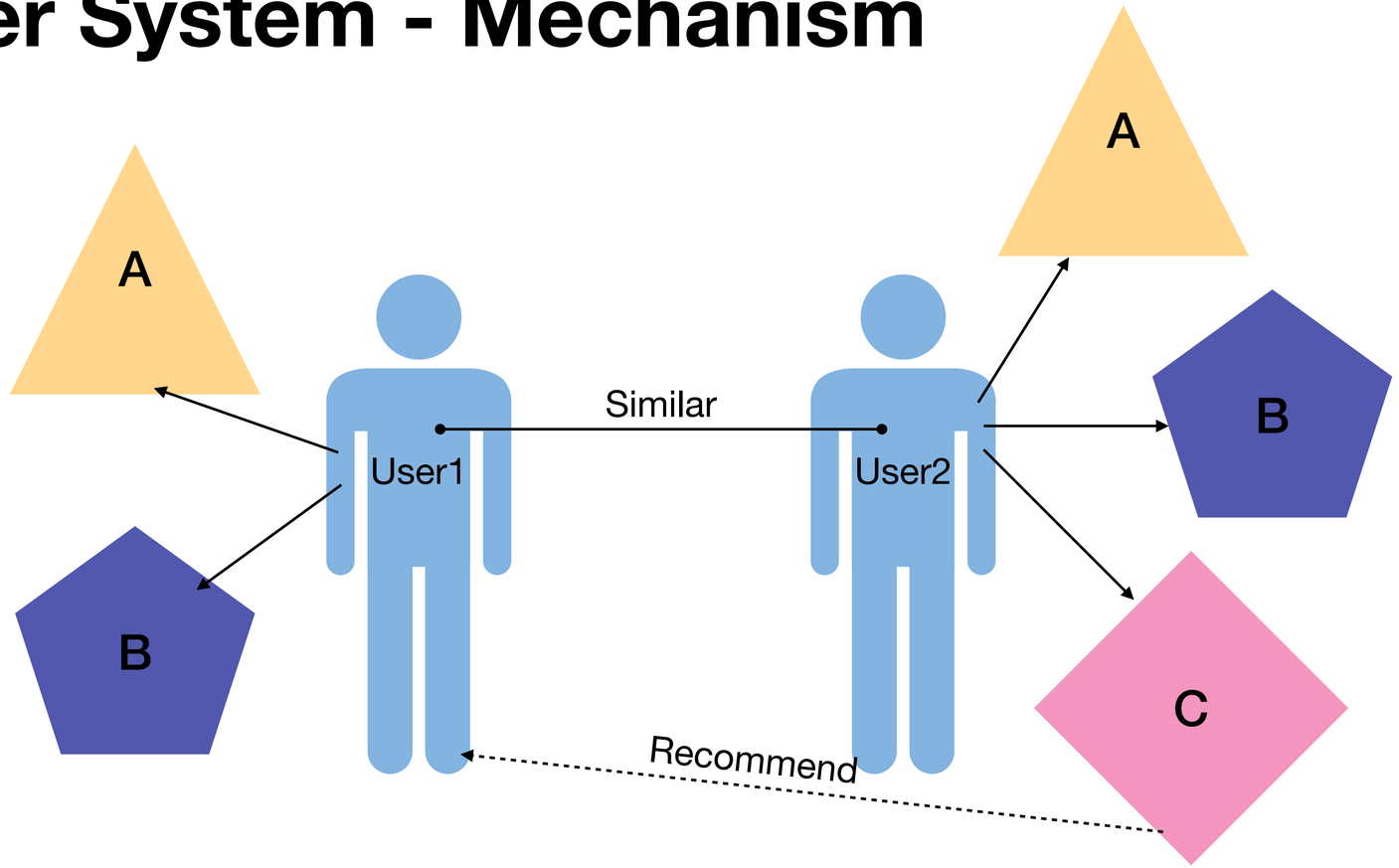
- **Employs a ML algorithm:** predict user's ratings for a particular entity
- **Based on:** similarity



Recommender System - Mechanism

Popular items

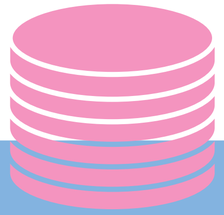
Classify Users



Recommender Engine - Stages

1. Data Collection

- Explicit
  - Provided internationally
    - users' ratings
- Implicit
  - Gathered from data stream
    - search history

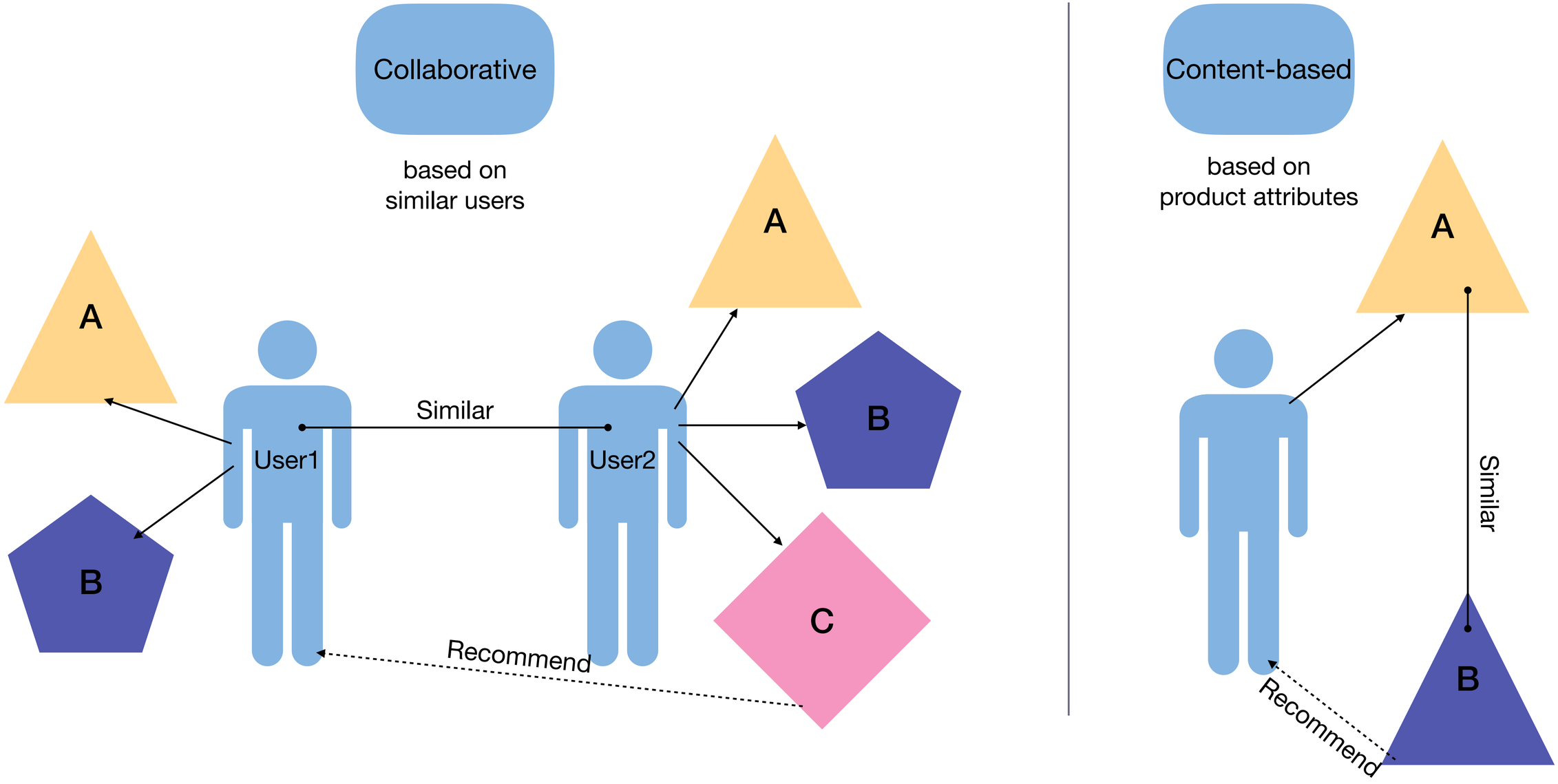


2. Data Storage

- Database
  - SQL, NoSQL, …
  - Based on data type
  - More data = Better System

3. Filtering Data

- Collaborative
  - based on similar users
- Content-based
  - based on product attributes
- ....

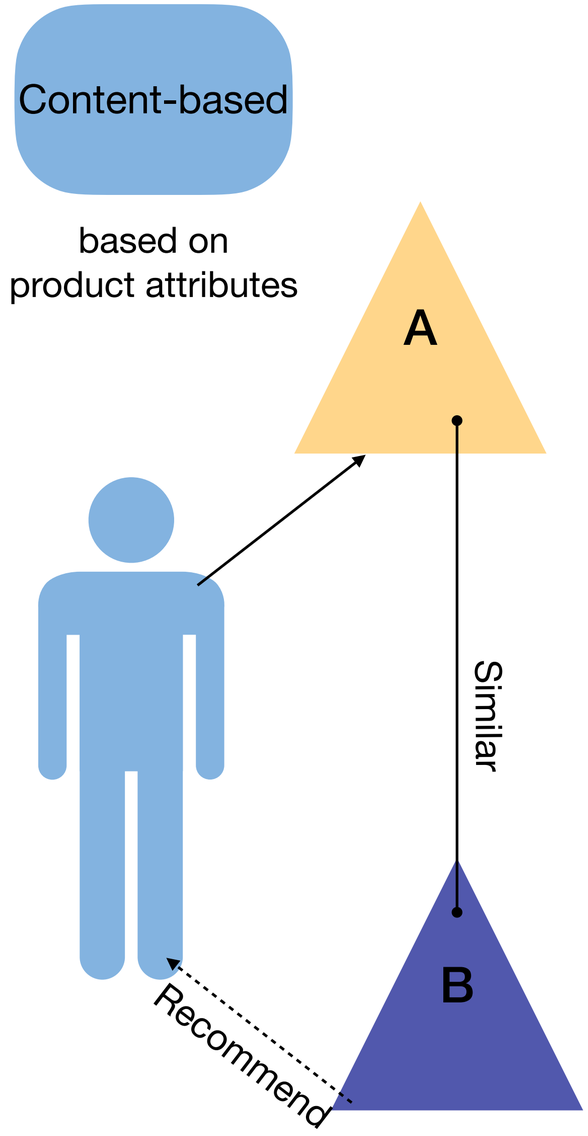

Collaborative
based on
similar users
A
A
B
Similar
User1
User2
B
C
Recommend
Content-based
based on
product attributes
A
Similar
B
Recommend

Methods:

- based on the item description & user's preferences profile
- Best if there are known data on an item

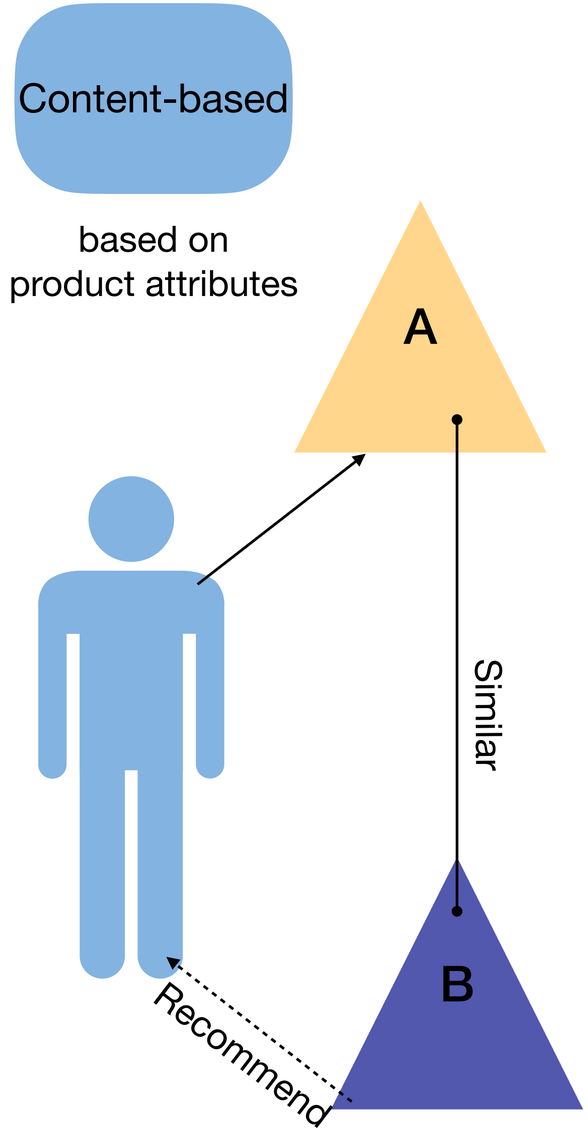
General idea:

- User liked a particular item? he will also like an item similar to it



Movie Recommender System

- Programming Language: **Python**
- Data Source: Kaggle
- Identifies/predict similar movies based on their attributes
- Applied by **KNN Classifier** model
- **Attributes:** ID, title, rating, released year, genres

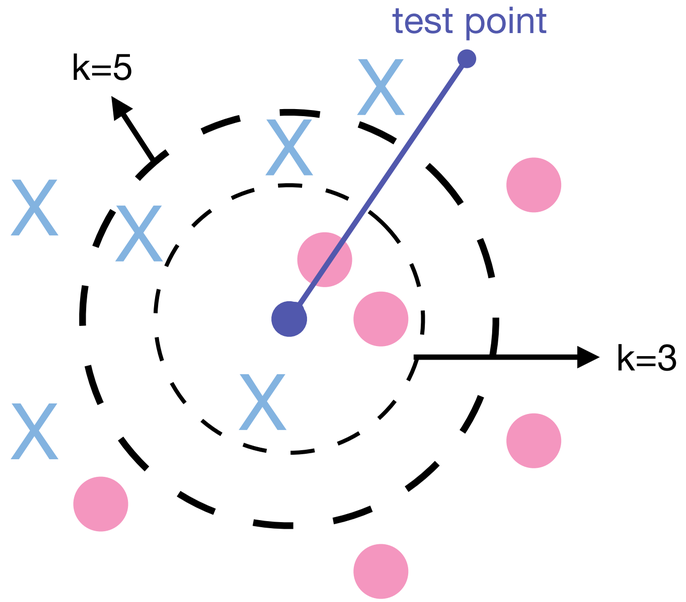


Movie Recommender System

Applied by **KNN Classifier** model

- Classifies k number of near neighbors to be on the same category

KNN Classifier



Movie Recommender System

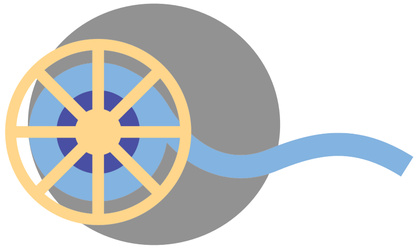
- **Attributes:** ID, title, rating, released year, genres
- From = 6 ⟶ To = 26

Features

'userId', 'movieId', 'rating', 'timestamp', 'title', 'genres'

↓

'userId', 'movieId', ‘rating’, 'timestamp', 'title', 'year', ‘Crime', 'Drama', 'Sci-Fi', 'Mystery', 'Thriller', 'Action', 'War', ‘Adventure', 'IMAX', 'Comedy', 'Romance', 'Western', 'Horror', 'Fantasy', ‘Musical', 'Film-Noir', 'Children', 'Animation', 'Documentary','(no genres listed)'



Movie Recommender System

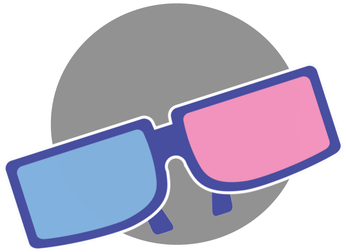
Results

- **Accuracy Score of Baseline Model**
- **Accuracy score of KNN Classifier**

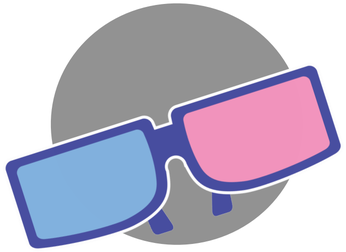
Baseline's: 0.27%

KNN's: 48.5%

Challenges & Outcomes



Scan the code



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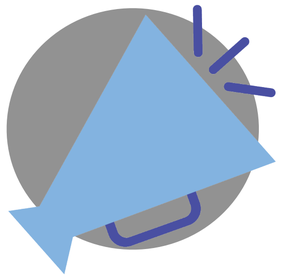

Thank You!