



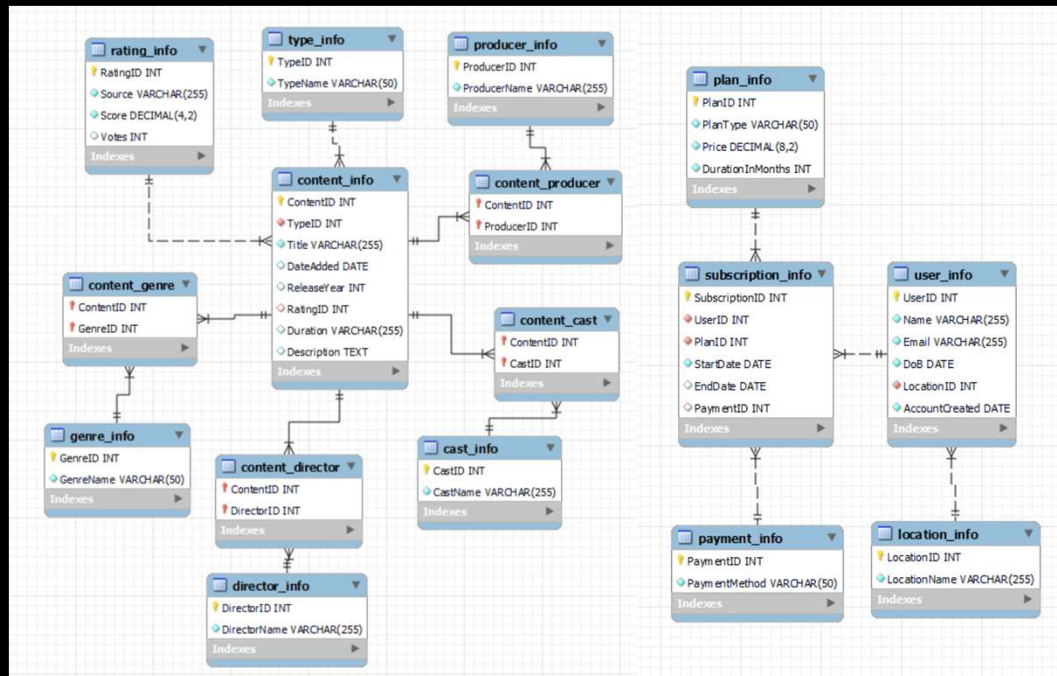
NETFLIX

Team14

Agenda

- ER Model and Implementation
- Business Application
- ETL Design
- Potential Opportunities

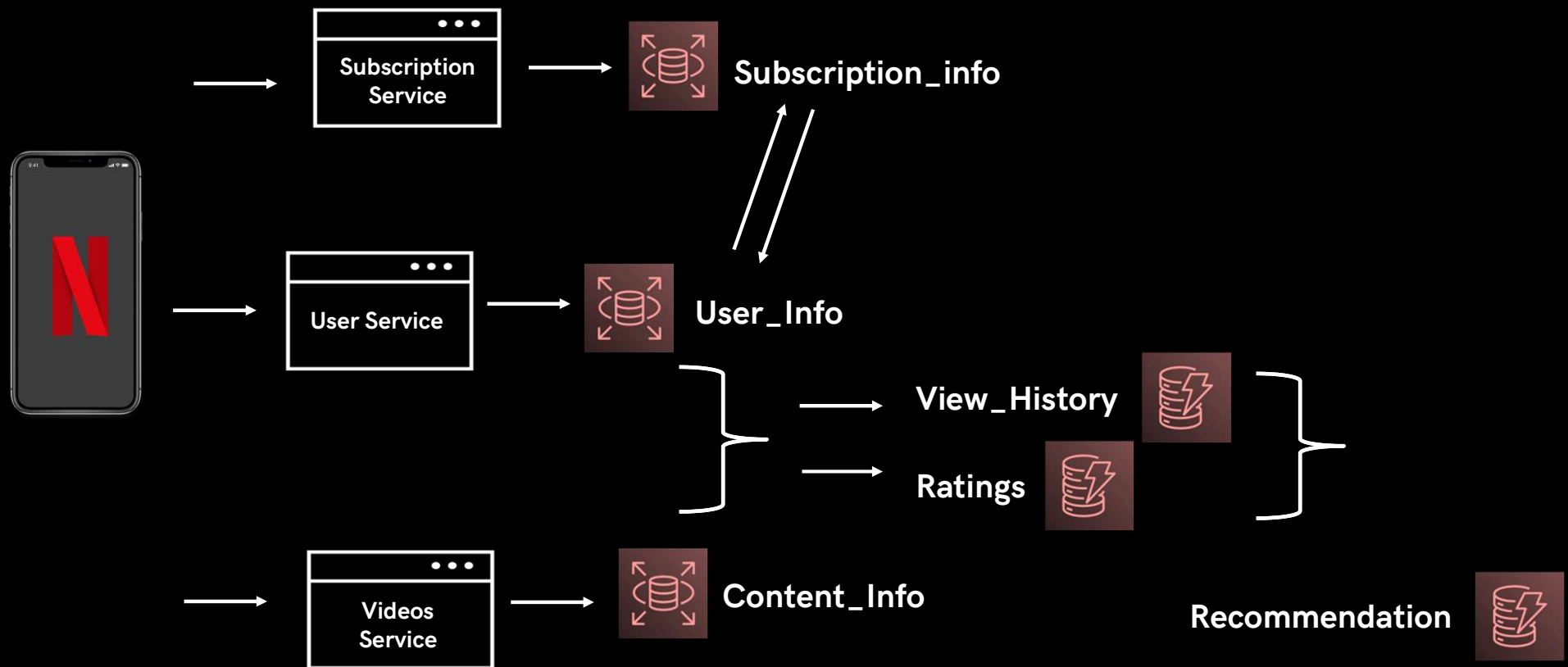
ER Model



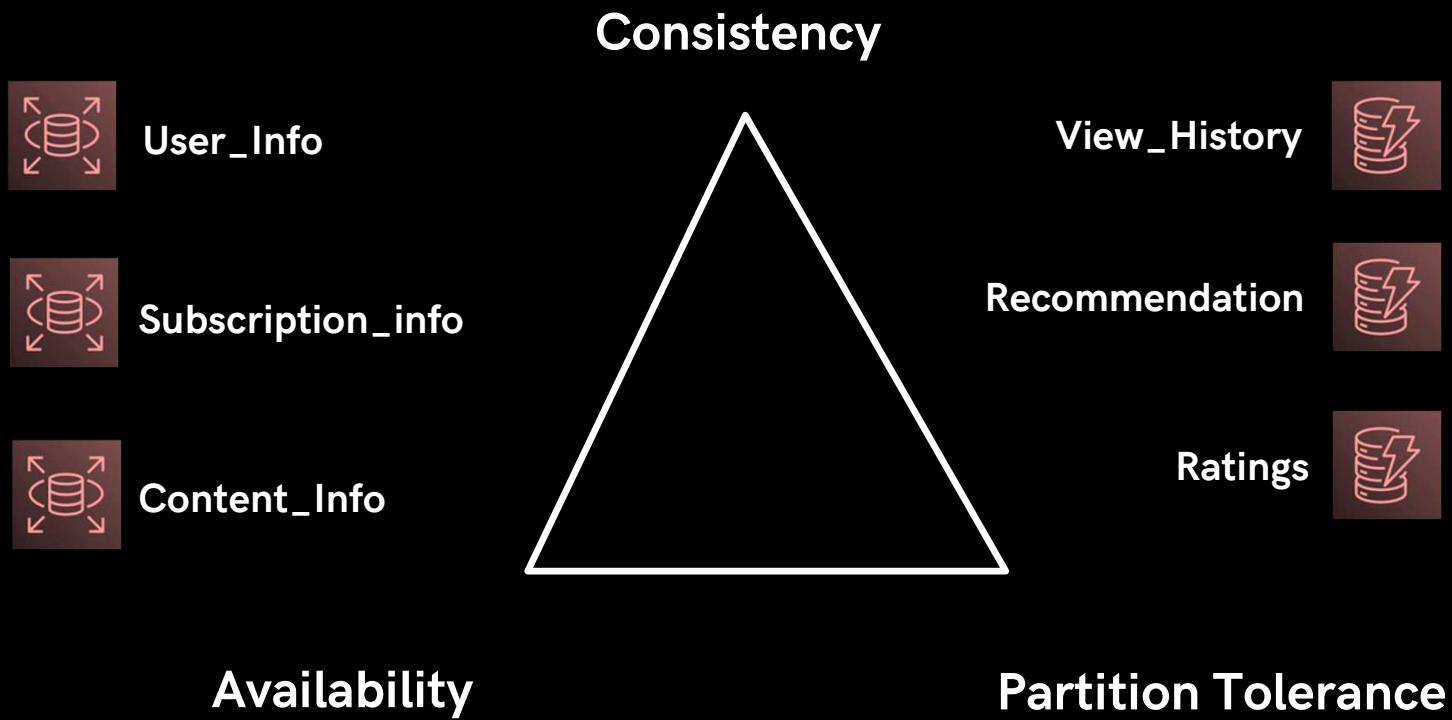
NETFLIX

- one of the world's leading entertainment services
- 283 million paid memberships
- over 190 countries
- 18,000 + titles

Backend Database System Workflow



CAP Theorem



Business Application

Recommendation System

For Watch Parties

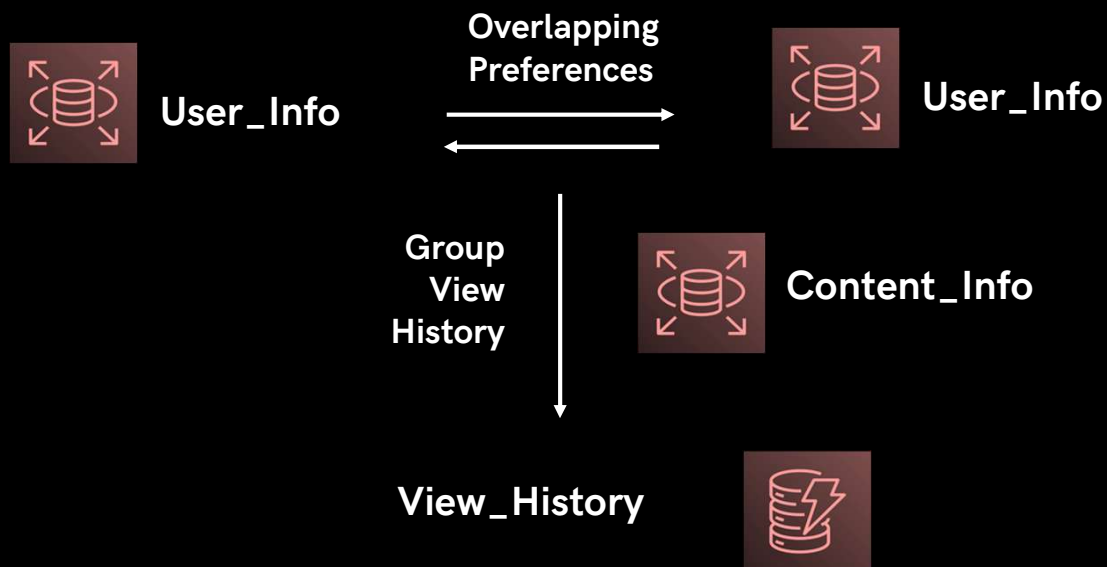
+ +
Data Utilization
User Engagement
Retention +

Recommending content that
aligns with the **shared** interests of two or more users.

- Users also can manually influence recommendations by specifying their current interests.
- Quickly find something they both enjoy without endless scrolling.

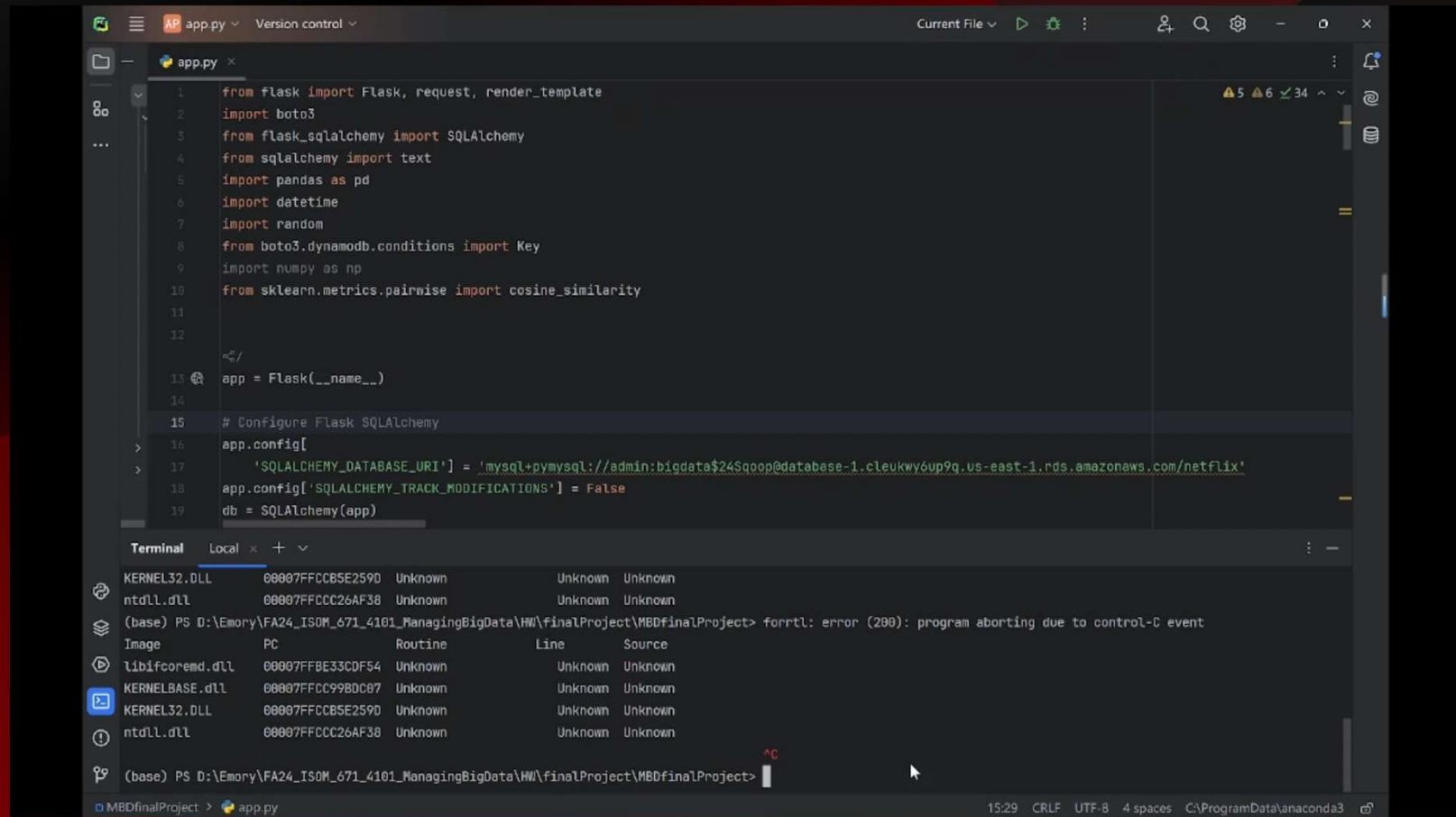


Database Involved & Information Gathered



Recommendation System

Take input from two sides and then recommend a movie based on the similarity score



```
1 from flask import Flask, request, render_template
2 import boto3
3 from flask_sqlalchemy import SQLAlchemy
4 from sqlalchemy import text
5 import pandas as pd
6 import datetime
7 import random
8 from boto3.dynamodb.conditions import Key
9 import numpy as np
10 from sklearn.metrics.pairwise import cosine_similarity
11
12
13 app = Flask(__name__)
14
15 # Configure Flask SQLAlchemy
16 app.config[
17     'SQLALCHEMY_DATABASE_URI'] = 'mysql+pymysql://admin:bigdata$24Sqoop@database-1.cleukwy6up9q.us-east-1.rds.amazonaws.com/netflix'
18 app.config['SQLALCHEMY_TRACK_MODIFICATIONS'] = False
19 db = SQLAlchemy(app)
```

Terminal

| Image | PC | Routine | Line | Source |
|---|------------------|---------|---------|---------|
| KERNEL32.DLL | 00007FFCCB5E259D | Unknown | Unknown | Unknown |
| ntdll.dll | 00007FFCC26AF38 | Unknown | Unknown | Unknown |
| (base) PS D:\Emory\FA24_ISOM_671_4101_ManagingBigData\HW\finalProject\MBDFinalProject> forrtl: error (200): program aborting due to control-C event | | | | |
| Image | PC | Routine | Line | Source |
| libifcoremd.dll | 00007FFBE33CDF54 | Unknown | Unknown | Unknown |
| KERNELBASE.dll | 00007FFCC99BDC07 | Unknown | Unknown | Unknown |
| KERNEL32.DLL | 00007FFCCB5E259D | Unknown | Unknown | Unknown |
| ntdll.dll | 00007FFCC26AF38 | Unknown | Unknown | Unknown |

(base) PS D:\Emory\FA24_ISOM_671_4101_ManagingBigData\HW\finalProject\MBDFinalProject>

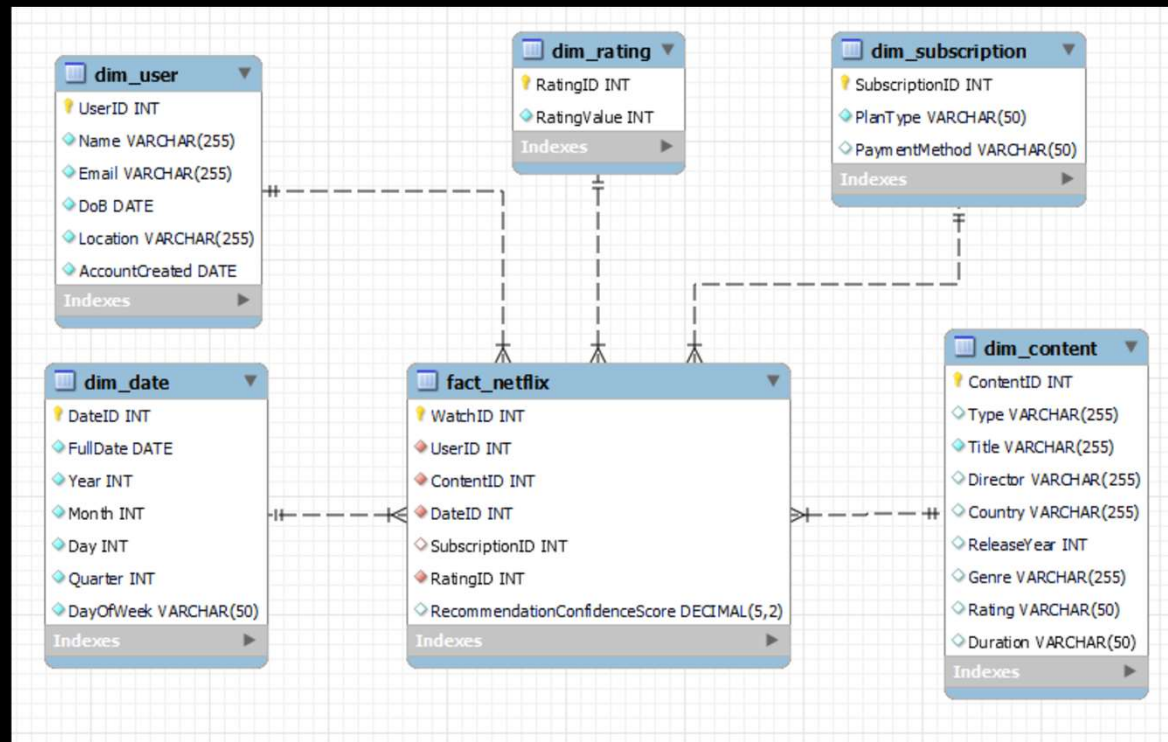
MBDFinalProject > app.py

15:29 CRLF UTF-8 4 spaces C:\ProgramData\anaconda3

Star Schema



Star Schema

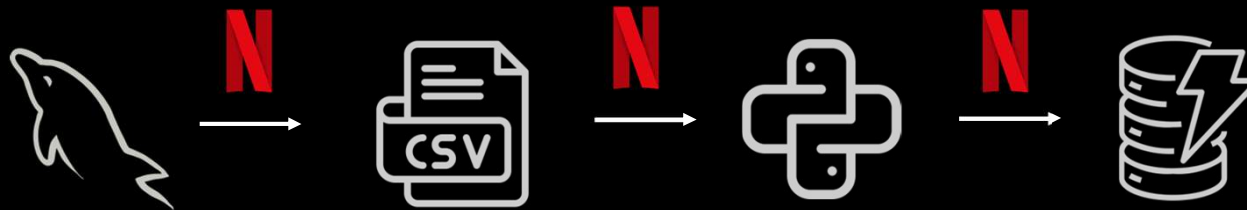


1 Fact Table + 5 Dimension Tables

- Each row in the fact table represents a single interaction between a user and a piece of content at a specific point in time
- Find the recommendations for a specific user

Business Insights

- Watch Party Dynamics
- Recommendation System Effectiveness
- User Preferences and Behavior



PartiQL editor
Operations performed using the PartiQL editor might incur charges. [Learn more](#)

Tables (2)

Ratings

...

▼ ViewHistory

...

UserID

Partition key

...

ViewID

Sort key

...

Query 1

```
1 SELECT *
2 FROM "ViewHistory"
3 WHERE "UserID" = 1552
4 ORDER BY "ViewID" DESC;
```

Run

Clear

Table view

JSON view

Completed

Started on 2024/12/5 21:01:10

Elapsed time 59ms

Completed

Started on 2024/12/5 21:01:10

Elapsed time 59ms

Items returned (10)

Download results to CSV

< 1 >

⚙

| Timestamp | UserID | WatchDuration | ContentID | ViewID |
|----------------------------|--------|---------------|-----------|----------------------|
| 2024-12-05T19:27:55.520535 | 1552 | 65 | 1454 | -1909237360623872179 |
| 2024-12-05T19:27:52.864301 | 1552 | 94 | 971 | -6601929556289297046 |
| 2024-12-05T19:19:18.748185 | 1552 | 49 | 1244 | -6725098846415252495 |
| 2024-12-05T19:19:15.080490 | 1552 | 6 | 971 | 2201929323602511908 |
| 2024-12-05T18:42:13.049721 | 1552 | 61 | 971 | -117278735021957530 |
| 2024-12-05T17:38:15.884396 | 1552 | 50 | 9 | -7107499744067817484 |
| 2024-12-05T17:37:18.047571 | 1552 | 83 | 971 | -6194414030302661343 |

Challenge & Innovation

No Mutual Interest

- System would randomly list five options for them.
- the system could propose popular content that falls outside of their preferences

Preference weighting system

- Users assign different weights by their preferences to the titles.
- Prioritizes features or aspects of the idea that bring the most value result.

Adaptive group profile

- Users assign different weights by their preferences to the titles.
- Prioritizes features or aspects of the idea that bring the most value result.





Thank you!