

# Introduction to Machine Learning - CSE574

## Recommendation Systems

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# Introduction

**Recommendation systems attempt to predict the preference or rating that a user would give to an item. Knowledge discovery techniques can be applied to the problem of making personalized recommendations about items or information during a user's visit to a website. Collaborative Filtering algorithms give recommendations to a user based on the ratings of other users in the system.**

- User user filtering
- Item item filtering



Libraries used:

We developed this recommendation in python and made use of different libraries available in python.

- pandas
- numpy
- matplotlib
- seaborn
- sklearn
- tkinter



# Procedure

We started with doing the exploratory data analysis to understand the data.

Cleaned the data by removing null/missing values from the data.

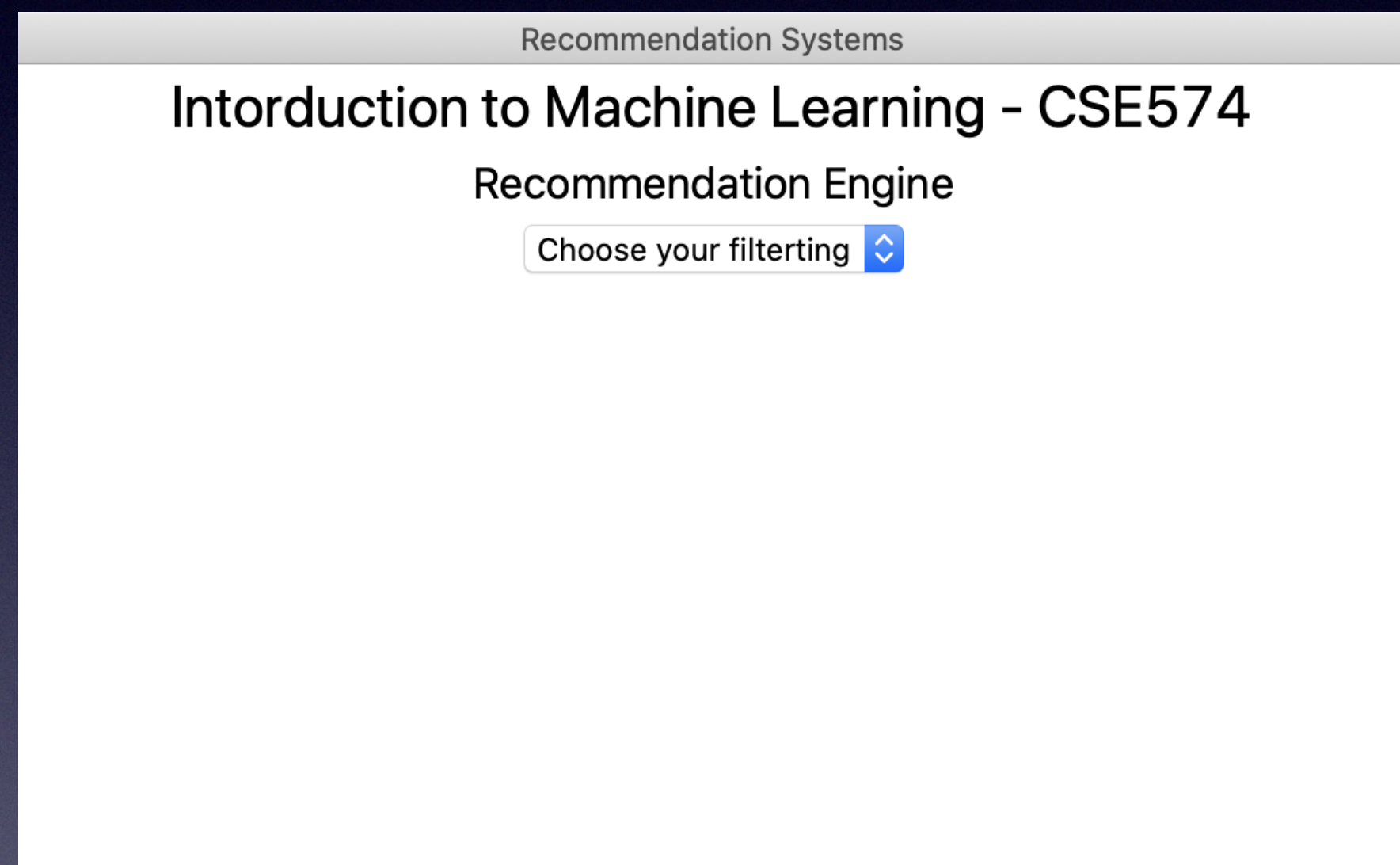
Prepared a dataset for building a pivot matrix and calculating the cosine similarity.

Based on the cosine similarity, we recommended the products to other users.

Created a GUI using tkinter library.



# Results:



Main screen asking user to select the type of filtering.



# User user filtering

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Recommendation Engine

User Filtering ▾

UserID

11601

No of books

5

Search

Books Recommended:

Book1: The Celestine Prophecy (Celestine Prophecy)

Book2: Taltos: Lives of the Mayfair Witches

Book3: Stupid White Men ...and Other Sorry Excuses for the State of the Nation!

Book4: The Passion

Book5: The Outsiders

After selecting user filtering, it asks user to enter user id and number of books to enter.



# Item item filtering

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Item Filtering

Book ISBN Number

0001047973

Ratings

8

Search

Similar Books:

Book1: 0446675539

Book2: 0316769533

Book3: 0425192946

Book4: 1587887150

Book5: 0553350005

Book6: 0394572300

Book7: 0739308920

Book8: 0446314277

Book9: 1853715085

Book10: 0060094818

After selecting item filtering, it asks user to enter book number and rating.



Thank You