Recommendation Systems
Individual Assignment
Due Date: April 6th 2023, 23:59

Description:

After successfully implementing a recipe recommender model, you have been hired as a consultant by food.com to develop a new recommender system. The objective of this project is to recommend **ingredients** to users based on their past recipe reviews. The food.com team wants to provide their users with the Top-N ingredients and include recipes that match the ingredient list. Additionally, the user should be able to replace specific ingredients with relevant alternatives.

Requirements:

To complete this consulting project, you are required to implement a demonstration of your recommender system and its capabilities in a notebook format. Your work should follow best ML practices, including using a training, validation, and test split and tuning hyperparameters. You should also choose evaluation metrics appropriate for Top-N recommender systems.

Formal requirements include:

- A short presentation of no more than 10 minutes. The recording should be included in the submission files along with your slides.
- Document your model development, evaluation, and testing in a notebook file. Please use comments as well as markdown cells to describe your thought process and intermediate results.

During your first meeting with the food.com team, they mentioned the following **optional** objectives:

- Food.com is interested in evaluating the *coverage rate* and *diversity* of your recommender system.
- Food.com wants to promote healthy recipes and ingredients. Ideally, your recommendations should take calorie information into account or provide healthier alternative recommendations.

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The files (recorded presentation, slides, jupyter notebook) must be uploaded to IESEG-online. In case there are issues with the website (e.g. file size) you can submit your assignment by email to p.borchert@ieseg.fr

> Note: The optional requirements listed above are suggestions to improve the project quality. You may include possible approaches in your presentation.

Data

The dataset is provided on the Kaggle competition page. Specifically, `metadata.csv` is required to complete the requirements of this project.

train.csv

Property	Data Format
user_id	String
recipe_id	String
date	Date
rating	Float
review	String

metadata.csv

Property	Data Format
name	String
id	String
minutes	Float
contributor_id	String
tags	List(String)
nutrition	List(Float)
steps	List(String)
description	String
ingredients	List(String)