SUMMARY

In this assignment, we are tasked with designing a recommender system for Food.com, a recipe website, with the goal of increasing user engagement and ultimately revenue generation. The recommender system aims to provide personalized recipe recommendations to users based on their preferences and the recipes they are currently viewing. To achieve this, we need to go through several tasks:

Task 1: Read the Data

We begin by reading the data from the RAW_recipes.csv file stored in an S3 bucket. It's crucial to ensure that each field has the correct data type to facilitate further analysis and processing.

Task 2: Extract Individual Features from the Nutrition Column

The nutrition column in the dataset is represented as a string, but it should be an array of float values. Each row contains seven nutritional values, and our task is to separate these values into seven individual columns for better analysis and feature engineering.

Task 3: Standardize the Nutrition Values

To standardize the nutrition values, we convert them to per 100 calories. This normalization step ensures that we compare recipes on a level playing field, regardless of serving size.

Task 4: Convert the Tags Column

The tags column is currently read as a string but should be converted into an array of strings for easier processing and analysis. This transformation allows us to leverage the categorical information provided by tags more effectively.

Task 5: Read the Second Data File and Join

We also need to read another data file, RAW_interaction.csv, containing interaction level data, and join it with the recipe level data frame. This combined dataset will provide us with comprehensive information about recipe interactions, which is crucial for building an effective recommender system.

Task 6: Create Time-Based Features

Finally, we create time-based features by capturing the time passed between user reviews and the date on which the recipe was submitted. These features provide insights into user engagement dynamics and can help improve the accuracy of our recommender system.

In summary, this assignment involves data preprocessing, feature engineering, and data integration tasks essential for building a robust recommender system for Food.com. By following these steps and leveraging the insights gained from the data, we can design a recommendation engine that enhances user experience, increases engagement, and drives business opportunities for the recipe website.