# Overview

This project deals with recommending user with skincare products that have been bought or rated by other users on the basis of their ingredients, brand, category, rating, and reviews. It has been divided in to 2 formats, content based filtering and collaborative based filtering. Data Engineering has been a big part of the project and presents certain obstacles for the models chosen to be implemented. Content based filtering deals with suggesting user products on the basis of items ingredients, brand and category which suits a Tf-idf vector for the purpose. Collaborative based filtering concerns with user characteristics, reviews, and the rating that they provided the product. Collaborative filtering uses correlation matrix and clustering, decision trees and Vader sentiment analysis for suggesting the right item. Collaborative filtering is further divided into two parts item-item and user-user based filtering which as it sounds takes in to regards the item features only regardless of the user characteristics and vice versa respectively. The base item which is used for driving the recommendation are extracted from the user’s like list which defines some item which they have explicitly added to their favorites and would like to get similar suggestion based off on that. Whereas, the Vader sentiment analysis parses the user reviews for their liked items for suggesting the correct items. In all the cases a feature matrix is passed as the input to the models for driving out features which make the liked item similar to the suggestions.