*** Problem Statement ***

Building a recommendation engine for a food startup.

Key Parameters:

- Health (user feature 1 / food feature 1)

- Taste (user feature 2 / food feature 2)

Basic steps while creating the recommendation engine.

* There are two broad classifications on which the recommendation engine can be built-

1. Collaborative Filtering

2. Content Based Filtering

For predicting the results gradient descent algorithm is used.

1. Define a cost function to minimize and initialize weight
2. Calculating the predictions
3. Calculating the gradient (change in cost with respect to the initial weight)
4. Update each weight "just a little bit"(learning rate) in the direction that will minimize the cost

For our dataset we will consider a small dataset and try to predict by partitioning it into training and testing dataset.The main parameters will be Health and Taste. Here we have described them as user feature 1 and user feature 2. Similarly, for food item also.

I have prepared a spreadsheet in excel with further 5 sub-sheets -

- userdata - This sheet gives the final results in a summarized manner. It gives the value of RMSE.
- training - This sheet is there for the training of the model. I have done iteration once only after the initial input.
- initialweight - This sheet provides the initial weight to the model input parameters.
- test_training - This sheet splits the data into training and testing.
- clookup - This sheet is there to facilitate the VLOOKUP function used in the userdata sheet.

Data – I have gathered data by asking my friends about the rating on the food items listed in the solution.

Reference:

https://towardsdatascience.com/netflix-and-chill-building-a-recommendation-system-in-excel-c69b33c914f4