Assignment 1: Project Requirements:

Restaurant Recommendation System for Pune city

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1. Business Requirement:

With majority of modern food services and products now being offered predominately online, it can be hard to get to know your customers. Unlike running a local restaurant where we get to know each person that comes in, online delivery restaurants can struggle to know exactly what their users are expecting.

With the advancement in machine learning and deep learning, it is now possible to get to know millions of customers completely online simply through data of their location, cuisine preferences, restaurant ambience preferences, meal type preferences and how much they are willing to spend. By using a data model to filter through your users' favorite products and food items, it is easier than ever to make recommendations to them for what they would enjoy to eat or buy.

A business can use restaurant recommendation system in order to:

1. Improve Customer Retention.
2. Analyze the market.
3. Increase Sales.
4. Enhance User Experience.

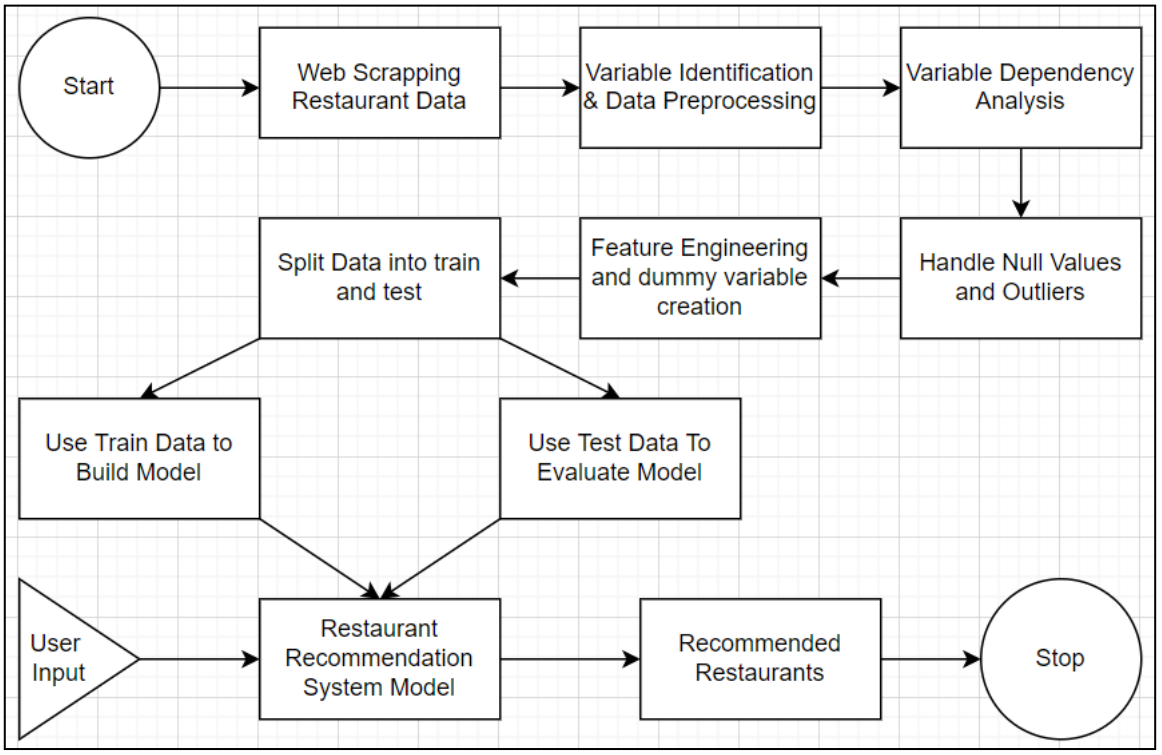
2. Project Objectives:

1. By the end of the project, the system is intended to serve recommendation to a user by calculating his likeliness towards a particular restaurant and similarity between various other users which can further improve the user's experience by giving it more accurate results.
2. Perform a location-based analysis to check which restaurants are feasible for dining / delivery.
3. Perform an economic analysis of general city population to check which type of crowd can afford dining prices in restaurants.
4. Perform area-based analysis to analyze the highest and lowest rated restaurants in the locality.
5. Perform a nutritional analysis based on the number of available junk food restaurants in the city.
6. Recommended restaurants based on cuisines and budget preferences

3. Data Required:

1. Restaurant Name – Name of restaurant
2. Cuisine Served – Food served
3. Stars / Rating – Reviews of customers
4. Average price for two – For budget and economic analysis
5. Location – For location-based feasibility
6. Fine Dine – For executive dining
7. Night Life – For young crowd / event areas
8. Food Type – For nutritional analysis
9. Meal Type – Snack/Lunch/Dinner
10. Student Area – Places with maximum student population.

4. Design model of your project:



Resources/ Literature survey:

1) **Collaborative Approach based Restaurant Recommender System using Naive Bayes:**
   This research paper talked about how recommendations can be provided using user attributes and past activity. A noticeable similarity is found in people belonging to same categories based on attributes like age, native place, gender, work-type, etc. Using Collaborative approach these attributes of individuals can be analyzed.
   https://ijarcce.com/upload/2017/april-17/IJARCCE%202.pdf

2) **Restaurant Recommendation System Using Customer's Data Analysis:**
   This research was based more on how users' behavior is increasingly becoming a topic of research because of innovations in technologies. It spoke more about content-based filtering**.**
   https://ijesc.org/upload/40157934dada8de435e6326872494608.Restaurant%20Recommendation%20System%20Using%20Customers%20Data%20Analysis.pdf

3) **Restaurant Recommendation System Using Machine Learning Algorithms.**
   In this paper, they studied that the consumers use online reviews for variety of reason. For many products/ services, there are a large number of reviews which make it difficult for consumers to decide which reviews pay attention to. A content filtering recommender system that evaluates individual online reviews and assigns a numeric score to each review was used.
   https://www.ijset.in/wp-content/uploads/IJSET_V9_issue3_233.pdf