SMARTINTERNZ FINAL PROJECT

INTRODUCTION

PROJECT NAME – RESTAURANT RECOMMENDATION SYSTEM

TEAM ID – 591739

MEMBERS –

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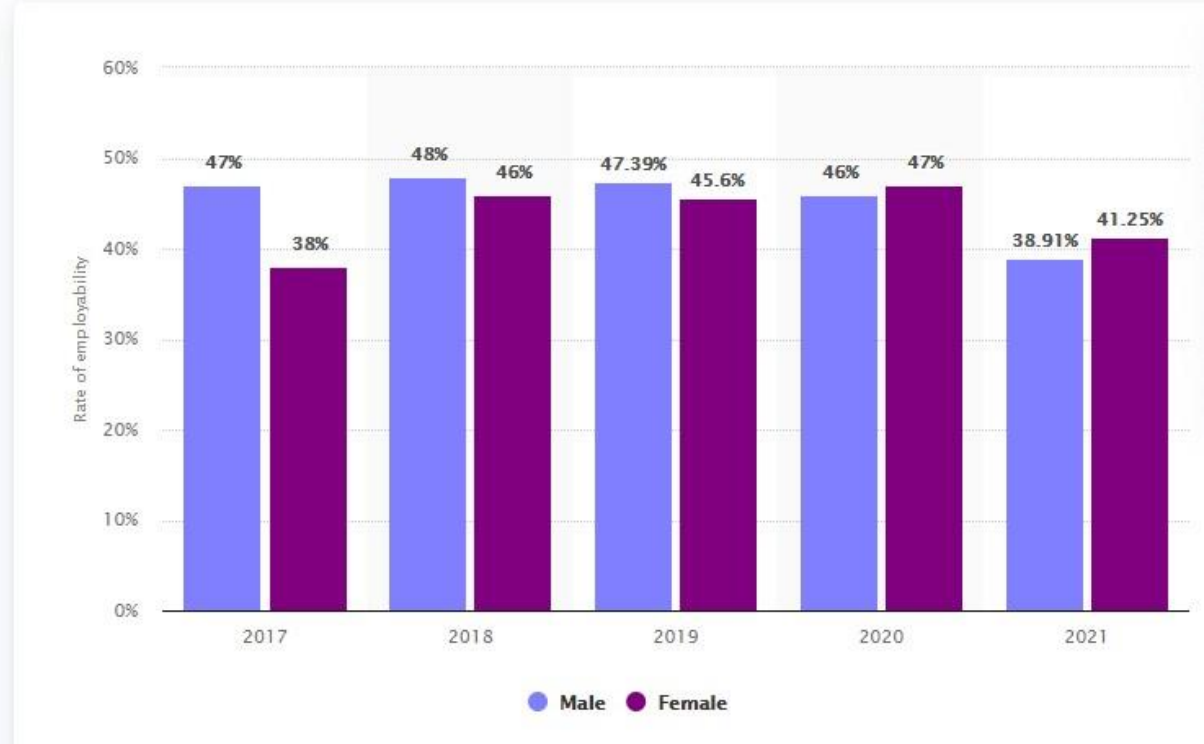
- **PROJECT OVERVIEW**

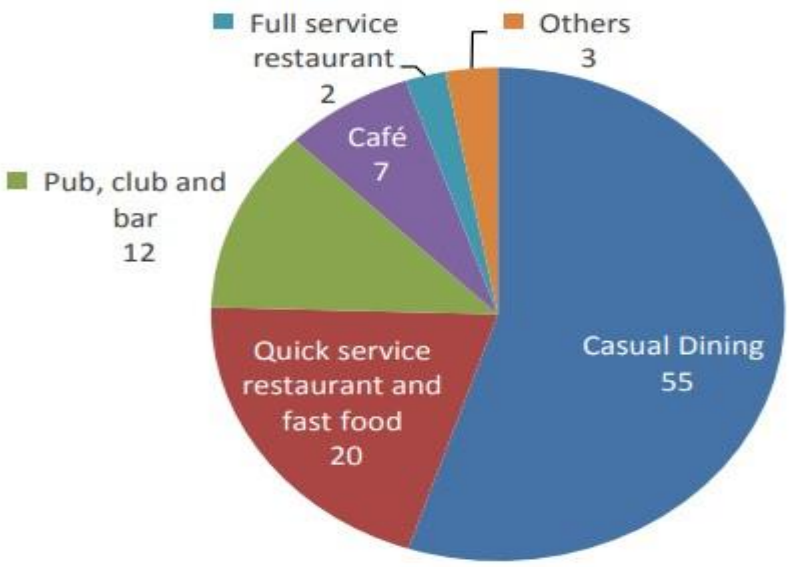
A lot of us like to visit hotels, roadside dhabas, cafes and restaurants to have a taste of the cuisine they serve. One of the many benefits of dining outside is that you have a variety of options to choose from. With the advent of technology, finding new restaurants has become much easier. All you have to do is to search on your browser to find nearby restaurants. The only problem is that there are so many restaurants available now that it becomes difficult to decide which restaurant to choose. After all, we do not get to dine outside daily, right? And when we do, we want the experience to be good and memorable.

In 2017, the Indian restaurant industry was estimated to be worth Rs. 75000 crores and is growing at an annual rate of 7 percent. (SMERGERS, 2017) This industry also employs a large workforce and is cause of livelihood for a lot of people. In the Indian city of Bangalore, the number of restaurants is estimated to be nearby 12000.



Some of the common factors people take into account while choosing the right restaurant are –

1. Distance of the restaurant from their location.
2. Type of cuisine they offer.
3. Pricing of the available cuisines and if it fits their budget.
4. Booking service is available or not.
5. Ratings and reviews provided by previous customers.
6. Timings of the restaurant.
7. Basic facilities and amenities provided or not.



Since me and my team consists of foodies who love trying new places, we aim to create a new web-based platform that helps people like us find the places of our interest to carry out our hobby :p

This entire system consists of two main components :

- Frontend – Web-based interface where users can input their preferences and receive recommendations.
- Backend - An AI model that generates recommendations based on user input and the restaurant database.

Architecture consists of the following :

Data: The system will require a database of restaurants, which should include information such as cuisine, price, location, ratings, and dining options. The system will also need to collect user data, such as their past ratings and preferences.

AI Model: The AI model can be trained using a variety of machine learning algorithms, such as collaborative filtering, content-based filtering, or hybrid filtering. Collaborative filtering algorithms recommend restaurants to users based on the ratings of other users with similar preferences. Content-based filtering algorithms recommend restaurants to users based on their past ratings and preferences for cuisine, price, location, and other factors. Hybrid filtering algorithms combine collaborative filtering and content-based filtering to generate more accurate recommendations.

Deployment: The system can be deployed as a web application or a mobile app. The backend can be deployed on a cloud platform such as Google Cloud Platform, AWS or Azure.

Evaluation: The system can be evaluated by measuring its accuracy and precision. Accuracy is the proportion of recommendations that users find relevant. Precision is the proportion of relevant recommendations that users click on.

Additional Considerations

- **Personalization:** The system should be able to personalize recommendations based on each user's individual preferences. This can be done by collecting user feedback and past behaviour.

- **Explain ability:** The system should be able to explain why it recommends certain restaurants to users. This will help users to trust the system and to make more informed decisions about where to eat.
- **Scalability:** The system should be able to scale to handle a large number of users and restaurants. This can be done by using a cloud-based deployment architecture.

- **PURPOSE**

1. **Enhancing User Experience:** The project should aim to provide users with a convenient and enjoyable dining experience by helping them discover restaurants that match their preferences, whether it's the type of cuisine, location, budget, or dining style.
2. **Saving Time and Effort:** Users often have to sift through numerous options to find the perfect dining spot. The project can save users time and effort by narrowing down their choices and presenting them with relevant recommendations.
3. **Exploring New Culinary Experiences:** The project can encourage users to try new and diverse cuisines and dining locations they might not have considered otherwise, thereby broadening their culinary horizons.
4. **Supporting Local Businesses:** By promoting local restaurants and eateries, the project can help boost the visibility and patronage of smaller, less-known establishments.
5. **Providing Personalization:** Offering personalized recommendations based on user input and behavior allows for a tailored dining experience, increasing user satisfaction.
6. **Continuous Improvement:** Over time, the project should continuously refine its recommendation algorithms based on user feedback and changing data, ensuring that users receive more accurate and relevant suggestions.
7. **Data Analysis:** The project can serve as a valuable source of data for analyzing dining trends, popular cuisines, and user preferences, which can be useful for restaurant owners, food critics, and the hospitality industry.

8. **Learning and Skill Development:** We are building this project as a learning exercise in SmartInternz, it can serve as an opportunity to acquire and hone skills in web development, data analysis, machine learning, and system design.
9. **Business Opportunity:** Depending on the project's success and user base, it could also serve as a foundation for a potential business venture or partnership with restaurants or food-related services.
10. **Community Engagement:** If you have a local or community focus, your project can encourage residents to explore and support local dining establishments, fostering a sense of community.