Project Proposal Summary

Brief project description

We aim to develop a restaurant suggestion web application which enables users to search and book tables at restaurants nearby. The users can select the restaurant based on the distance, cuisine, ratings etc.

Project Start Date: Sep 10, 2018
Project End Date: Nov 26, 2018

Project Team/Stakeholders

Team: Ankur Sharma, Punit Bhalla, Spandan Dey, Fenny Mahajan, Sakshi Jain, Logan Padon
Stakeholders: Dr. Mehra Nouroz Borazjany, OOAD section 001

Project significance

We aim to show the user, places to eat depending upon the filter that he selected. The user will be able to view all the nearby restaurants on the map and select depending upon his preference.

External Resources

We plan to use google API for maps for showing the location of the restaurant and calculating the distance.

Development Resources

Eclipse IDE, MySQL database, Star UML, GitHub

Success Parameter

To ensure a robust development of the project we aim to conduct unit testing for every module as it is developed. When all the modules are complete, we will do integration testing, verification testing.

1. Objectives

Our project will be able to give the user the address of a restaurant that fits their specifications. We will give them the ability to search through open restaurants nearby in the direction that they're driving if the restaurant fills up or is closed. This will allow people to change their dinner plans quickly and on the go. Specifications would include quick turnarounds on queries for restaurants, preferably within five seconds with good connection. Databases of full restaurants should be updated immediately and visible to other users within 10 seconds of filling up. Users should be able to update the radius that the app should look for within 10 seconds.
The largest design constraint is that we will be pulling data from an external API. This limits us to using only locations that are stored in that database. We are also limited by how quickly the API functions. If the calls to the API are slow, we will not be able to meet time requirements. Another constraint is that we will be using Java. Therefore, we are also gated by the speed of Java's machine learning APIs.

2. Approach

Basic Architecture of this project will have a front end which will be developed using JSP as we are following MVC architecture. The backend will be developed using java and MySQL.

Steps for development

1. The project is divided into six modules. we will develop each module iteratively.
2. Each module contains five to six functionalities divided into six team members.
3. Each module will contain front end as well as backend functionalities.
4. For each iteration, we will develop 1-2 functionalities.
5. JUnit will be used for unit testing.

Generating solution concepts

We will use a multi layered architecture divided into 4 layers.
1. Presentation Layer: This will contain all JSPs which will produce the User Interface for users.
2. Service Layer: This layer will act as a receiver for Backend Requests for data to be presented to the user. This layer will interact with the Presentation Layer as well as all
business layers
3. Business Layer: This layer is going to be the core of our application and it will contain all business logic needed to implement this project.
4. Data Layer: The purpose of this layer is to interact with a database management system and perform CRUD operations.

Analyzing Performance
Search and Recommendation queries can be intensive to the Database and if not properly tuned may produce lags while presenting data. Approach to measures are:

1. All database transactions will record time durations. This can be captured by clocking system time at the start and end of each DB operations.
2. Step 1 can be used in all business logic which are heavy on time complexities
3. Alternate techniques to be used if the logged time of any operations is unrealistically high.

Project Management
Deliverables

Why this problem statement needs to be done?

Relevance or importance of problem

Basically this is a restaurant reservation system where one can not just locate one's favorite restaurant based on their preferences but also can make prior booking based on the availability of seats.

In the present restaurant reservation system application like Zomato it just gives information about the restaurants and cuisines but not about the restaurant information using the satellite mapping systems like Google Maps which guides you about your favorite location when you are travelling.

Here number of features are being combined together where we can have restaurants based on your location when you are travelling. Also, the database of the customers will be maintained and recommendations based on it would be given.

The availability of various food items present in a restaurant at that particular moment can also be known and customer decision can be made based on it whether he/she wants to still visit the restaurant . This project is estimated to help increase the efficiency of operations.This project is high-quality software to manage all these cumbersome jobs.

Background Information to educate the reader

The current system for restaurant availability includes many of the already existing applications like Open Table , UberEats etc. However, the primary aim of all these is just to show the recommendations of restaurants to the consumer and to place the order for them or to only book a seat.

The drawback with existing systems is that multiple functionalities like booking a seat,finding a restaurant using satellite mapping system,making a database for existing customers and recommending restaurants based on their past choices and providing them corresponding discounts were not available in one single application.

So this application will provide all the functionalities like customers will have hassle free booking 24*7.Customers will have recommendations based on their choices and will get good discounts.Also,the data would be managed more efficiently.

Team qualifications

Logan Padon

I have experience working with machine learning techniques. In the past, I have worked on a project to translate American Sign Language from a live video feed, among other machine learning projects. I also have experience working in a professional software development environment that uses agile methods to deliver banking software quickly and efficiently. Finally, I have taken coursework in which I've implemented various machine learning algorithms, so I have an understanding of them at a conceptual level.
Resume: https://utdallas.joinhandshake.com/users/10519162

Ankur Sharma

I have more than three years of industry experience, working as a Senior full-stack software developer. I have worked on multiple projects using agile methodology.
I have worked in wide range of technologies: Java, C-Sharp, JavaScript, Oracle Database, Python, Backbone JS, Machine Learning.
Resume: https://www.linkedin.com/in/ankur29/

Punit Bhalla

I have almost four years of experience in Tata Consultancy Services. I have worked on IBM DB2 database administration, application development using C++ and C# programming language, ETL job development using IBM InfoSphere datastage designer client and business intelligence report generation using IBM Cognos report and query studio.
Resume: https://www.linkedin.com/in/punit-bhalla-aaa71a76/

Fenny Mahajan

I have almost 5 years of experience in Making You Live Pvt. Ltd. I have worked on multiple projects including Repository Information Systems and Tax Information Systems using Agile methodology. I have been using wide range of technologies: Java, SQL, JavaScript, HTML, CSS. Currently I have enrolled in machine learning coursework where I will be using Python as the main programming language.
Resume: https://www.linkedin.com/in/fennymahajan116/

Spandan Dey
Having 7.5 years of experience in Java Development, I have worked for multiple companies as a Software Developer and Technical Architect. From maintaining old legacy system to build softwares from scratch, i have worked on many projects of different type using technologies like J2EE, Spring, Hibernate, Apache Kafka, Apache Storm, Apache Camel, Oracle 12c and MongoDB.
Resume: https://www.linkedin.com/in/spandandey1710/

Sakshi Jain
I have 4 years of experience as an iOS Developer with a focus on code quality, timely delivery, under pressure working experience and performance optimization. My responsibilities in the past ranged from gathering requirements, designing and developing the project from scratch as well as work on existing applications. I have worked on Objective-C, Swift, React Native, JavaScript, Python.
Resume: https://www.linkedin.com/in/jainsakshi22/