

TABLE FOR ME



Contributors:

Mayank Badjatya (u1085897)

Niharika Rajwadha (u1084739)

Sagar Singh (u1088202)

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Objectives

The U.S. restaurant industry projects \$799 billion in eating and drinking sales in 2017, according to an estimate by the National Restaurant Association¹. Restaurant customers appreciate the convenience of being able to make restaurant reservations online. A study of 696 restaurant customers found that nearly one-third had made an online reservation. Customers making reservations online tended to eat out more frequently. Those who made online reservations considered those reservations to be significantly more convenient than going and waiting in long queues to get a table. Online users also thought that websites gave more information about a restaurant. This tradeoff between efficiency and service perceptions points to a strategy of offering reservations online. Emphasizing the convenience of online reservations may encourage customers to use the website, and that will give restaurant operators more information about their customers. Whether a restaurant uses a third-party reservation service or builds its own website, one key to ensuring a successful reservations process is to make the electronic process as straightforward as possible.

We are proposing an application that will help customers do table reservations to save time and make it a more memorable experience. This would also benefit the restaurants by gaining loyalty from the customer due to convenience and time saving. This application will be a simple standalone application with ease of use. It will contain real time updates about the availability.

After booking a customer gets a receipt with the booking ID. During weekends between 7 PM to 10 PM it has a payment option also available due to more customers. Additionally, this application also gives discounts to regular customers on reservations. Thus, the application will in a way also generate more revenue for the restaurants.

¹ <http://www.restaurant.org/News-Research/Research/soi>

Scope

The scope of this project is to build an application for reserving tables for restaurants. Through restaurant reservation system online, user can be allowed to take reservations quickly and easily. These reservations are completely under users' control. The user can choose and update their reservation as per their preference of location and time. The manager doesn't have to maintain a guest book anymore. The managers can see who is coming and at what time. In that they are aware about which tables have been booked. This method also makes it easy to change the status of a reservation once your guests walks in. Time management becomes simple. You can also inform your restaurant staff about who has arrived as you have the information about the customer from the database and how to take care of them. It also makes it easy to let them know in case of cancelled reservations or no shows.

Stakeholder Management

Stakeholder Management is an important discipline that successful architecture practitioners can use to win support from others. It helps them ensure that their projects succeed where others fail. It is essential in any initiative to identify the individuals and groups within the organization who will contribute to the development of the architecture, identify those that will gain and those that will lose from its introduction, and then develop a strategy for dealing with them.

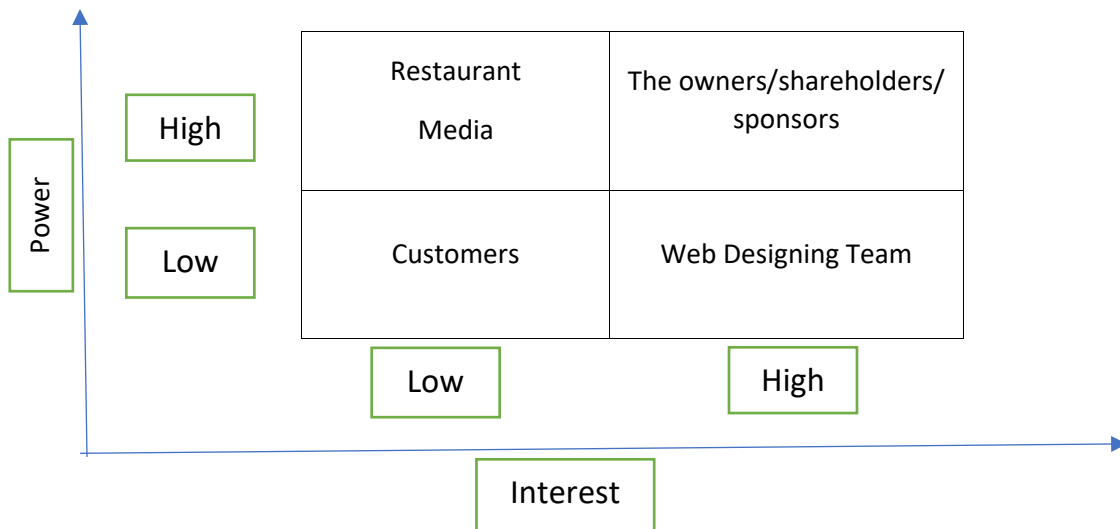
The following table provides a stakeholder map for an online seat reservation system

STAKEHOLDERS	KEY CONCERNS	COMMUNICATION SYSTEM		
		WHAT	WHEN	HOW
The owners/shareholders/sponsors	Creating an environment leading to successful projects in which performance quality, completion time and final costs are within prescribed limits and tolerances or eliminate lengthy delays	Information that they want in on project status, issues and risks	Every Month	Meeting / Report
Customers	Testing the new service to see if it meets their expectations in term of quality and price and if it really satisfy their needs.	The restaurant name, seat availability, price, and services.	Weekly	Through phone, website and personally visit and through regular advertising and commercials
Restaurant	Ensuring the work is done according to the policies and standard quality to meet the mission statement.	Quality of the service and the accurate data about the seats availability.	Weekly	Formal requisition through E-mails, phones and any documents
Web Designing Team	Maintaining the website, update records, online cancellation, maintaining regular	To review detailed plans (tasks, assignments,	Every Day	Meeting/ Reports

	list of customers, keep track of guest customers reservation, response to email and receive feedback	and action items).		
Media	Revealing the quality of service and type of the customers who deal with the restaurant besides gaining extra money from the advertising and promotion	Inform about progress and organizational change impacts	Monthly, or as identified in Communication Plan	Electronic or paper newsletters, reports, or video/ podcasts

Stakeholder Analysis

Stakeholder Analysis is a process of systematically gathering and analyzing qualitative information to determine whose interests should be considered when developing and/or implementing a policy or program. A common method of stakeholder analysis is a Stakeholder Matrix. This is where stakeholders are plotted against two variables. The Stakeholder matrix for this online reservation system is:



Target Actor

1. Name of the Actor: Customer

Responsibilities:

- Making table reservation using the existing account or membership.
- Making payment for the table reservation by using existing credit/debit credentials filled while signing in for membership.
- Managing his/her profile if any, for example: change in credit/debit card details, change in demographic information, etc.

2. Name of the Actor: Admin

Responsibilities:

- Managing transactions and payments from customer.
- Managing the account and membership of the new and old customers.
- Manage and update restaurant information.
- Managing the database and software requirements for table reservation system.
- Uploading the deals including discount coupons, update in rates and special festive offers.

3. Name of the Actor: Restaurant Manager

Responsibilities:

- Managing his/her profile.
- Providing confirmation of the booking.
- Providing details about the booking.
- Adding free lots
- Adding free lots to the customer's account as per the need.
- Removing occupied lots from the customer's account and make it available for other customers.

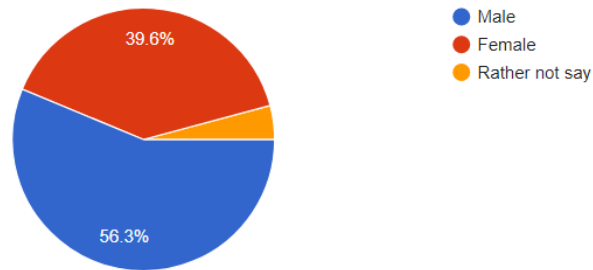
User Requirement

1. What is your age group?
2. What is your gender?
3. What kind of restaurant do you prefer?
4. On what days do you visit a restaurant?
5. How many people visit along with you?
6. Will you prefer payment for booking?
7. On an average how long do you spend in waiting for your turn for your table?
8. For what meal of the day do you prefer to go to a restaurant?

Survey Results

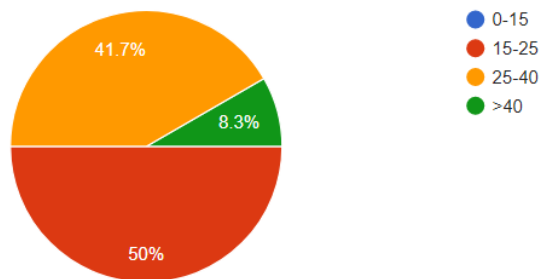
Gender?

48 responses



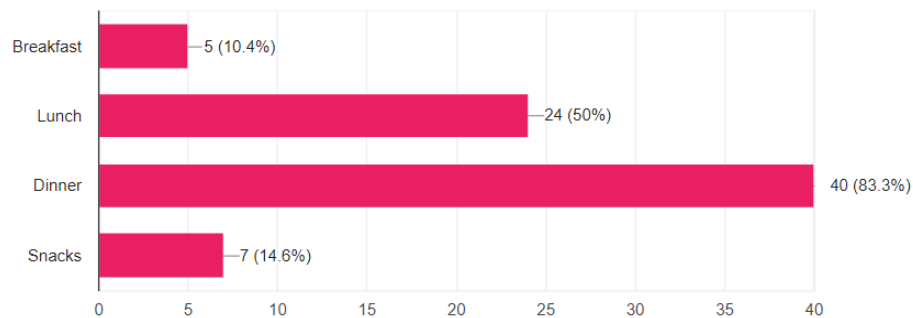
What is your age group?

48 responses



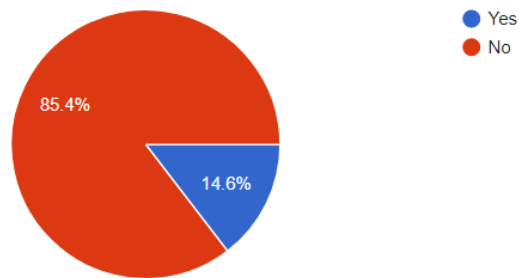
For what meal of the day do you prefer to go to a restaurant ?

48 responses



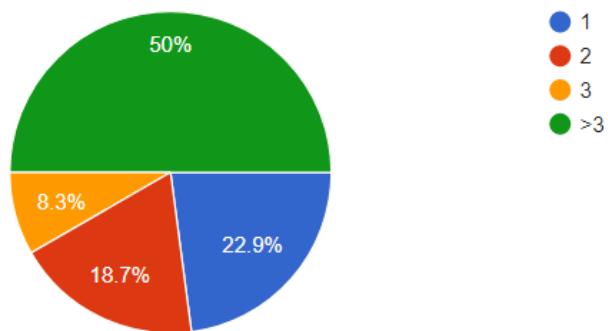
Will you prefer payment for booking?

48 responses



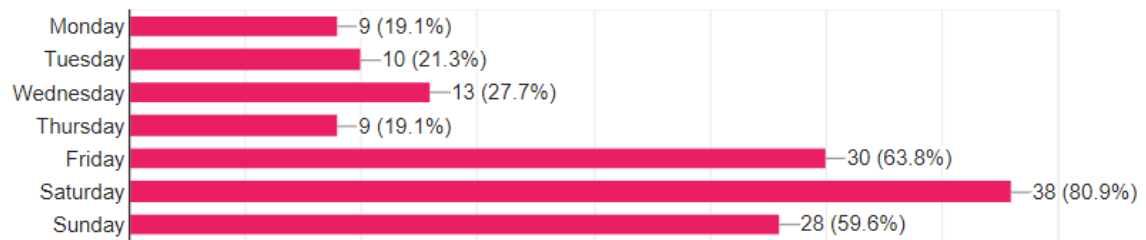
How many people visit along with you?

48 responses



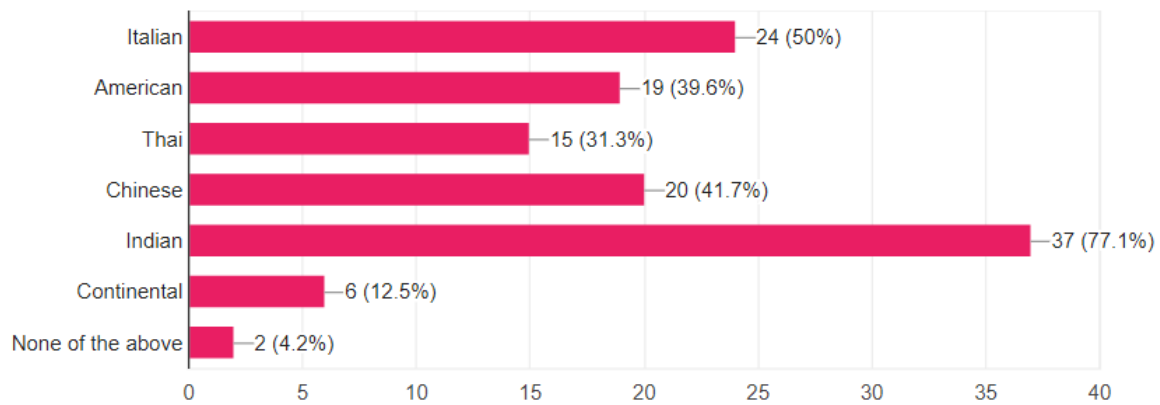
On what days do you visit a restaurant?

47 responses



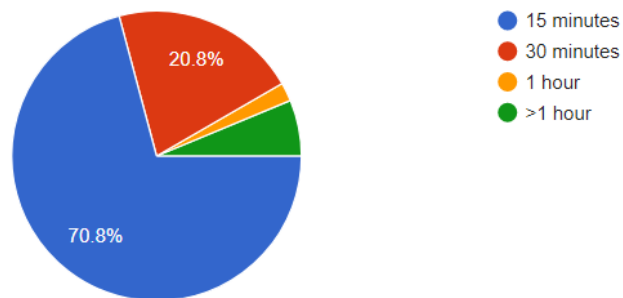
What kind of restaurant do you prefer?

48 responses



On an average how long do you spend in waiting for your turn for your table?

48 responses



Requirement Analysis

A high-level requirements specification is required. The purpose of the requirements analysis is to identify requirements for the proposed system. The emphasis is on the discovery of user requirements. Each requirement (or problem) must be defined and documented.

Functional Requirements

Functional requirements deal with what the system should do or provide for users. They include description of the required functions, outlines of associated reports or online queries, and details of data to be held in the system.

- The system supports customers booking and able to modify them. Customers can modify/update or delete their reservation.
- When a customer search for restaurant, the search result must contain full information (Address, Ratings, and Price) and as well as the reviews given by the previous customers.
- Only admin has the authority to add and remove the restaurant manager. Unlike Customer, Restaurant Manager cannot register through online site.
- Each Guest Customer should be linked with a guest id and the reservation made by the guest should be linked with this id.
- Restaurant Manager externally should be able to edit customers booking information (even cancel booking) on the request of the customer.
- Different time-zones should be considered. System should consider time zone synchronization when accepting bookings from different time zones
- System should only allow users to move to payment only when mandatory fields such as restaurant name, reservation date, and reservation time has been mentioned.
- System should accept all kinds of credit or debit card. It should also have the facility of paying through PayPal and e-wallets. System should also be flexible enough so that any other forms of payment gateways can be added in the future.
- Customers can write reviews about hotels and apartment and rate them. System should display these reviews transparently.
- One account cannot be associated with multiple users. There should be only one user per account.
- Customers able to check their booking status either from their account or through the reservation id.
- Search results should enable users to find the most recent and relevant booking options

- The system must send booking confirmation email after successful payment.
- Even reservation should be associated with the reservation id.

Non-Functional Requirements:

Non-functional requirements detail constraints, targets or control mechanisms for the new system. They describe how, how well or to what standard a function should be provided



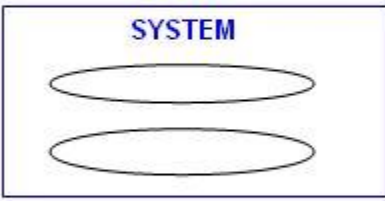
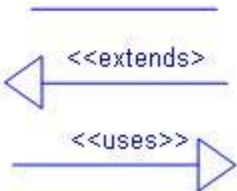
- System should be able to handle multiple transactions at one time asynchronously.
- The system must ensure that all the transferable data as for examples customers credit or debit card number, e-payment should be done in secured connection. SSL certificates must be use.
- The system should support all types of browsers. This system support should be extended to mobile and tablets also.
- System should send promotional coupons or vouchers to its registered customers.
- System should use captcha and encryption in order to avoid bots from making reservations.
- Search system should fetch results within the acceptable time limit.
- User should be helped appropriately to fill in the mandatory fields, in case of invalid input
- Customers need to cancel the booking before 24hrs for full refund.
- System should be easy to use and navigate through.
- The down time of the site should be limited to only to that of the server.
- Online site should look pleasant and attractive, often promoting confidence in use. There should be ease of operating an implemented design.
- All the stored payment details of the users should be usable only in authorized ways by authorized users.
- There should be no lag in the site due to the volume of users and data.

Use Case Diagrams

Use case diagrams are usually referred to as **behavior diagrams** used to describe a set of actions (**use cases**) that some system or systems (**subject**) should or can perform in collaboration with one or more **external users** of the system (**actors**). Each use cases provide some observable and valuable result to the actors or other stakeholders of the system

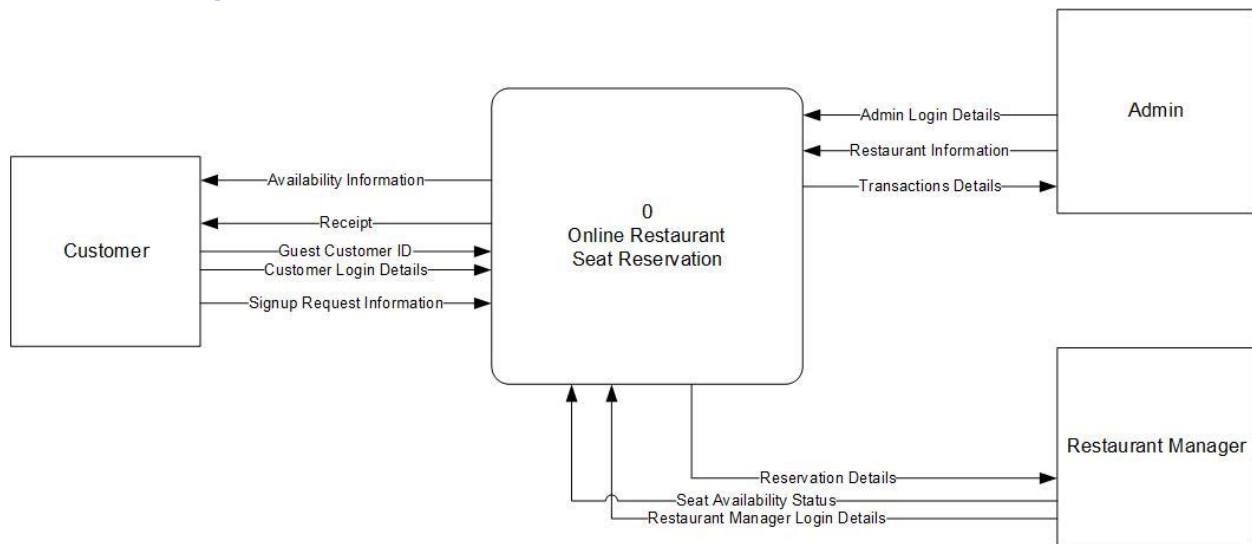
Use Case diagram symbols:

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Symbol	Reference Name
	Actor
	Use Case
	System
	Relationship

² Source: <http://umltutorials.blogspot.com/>²

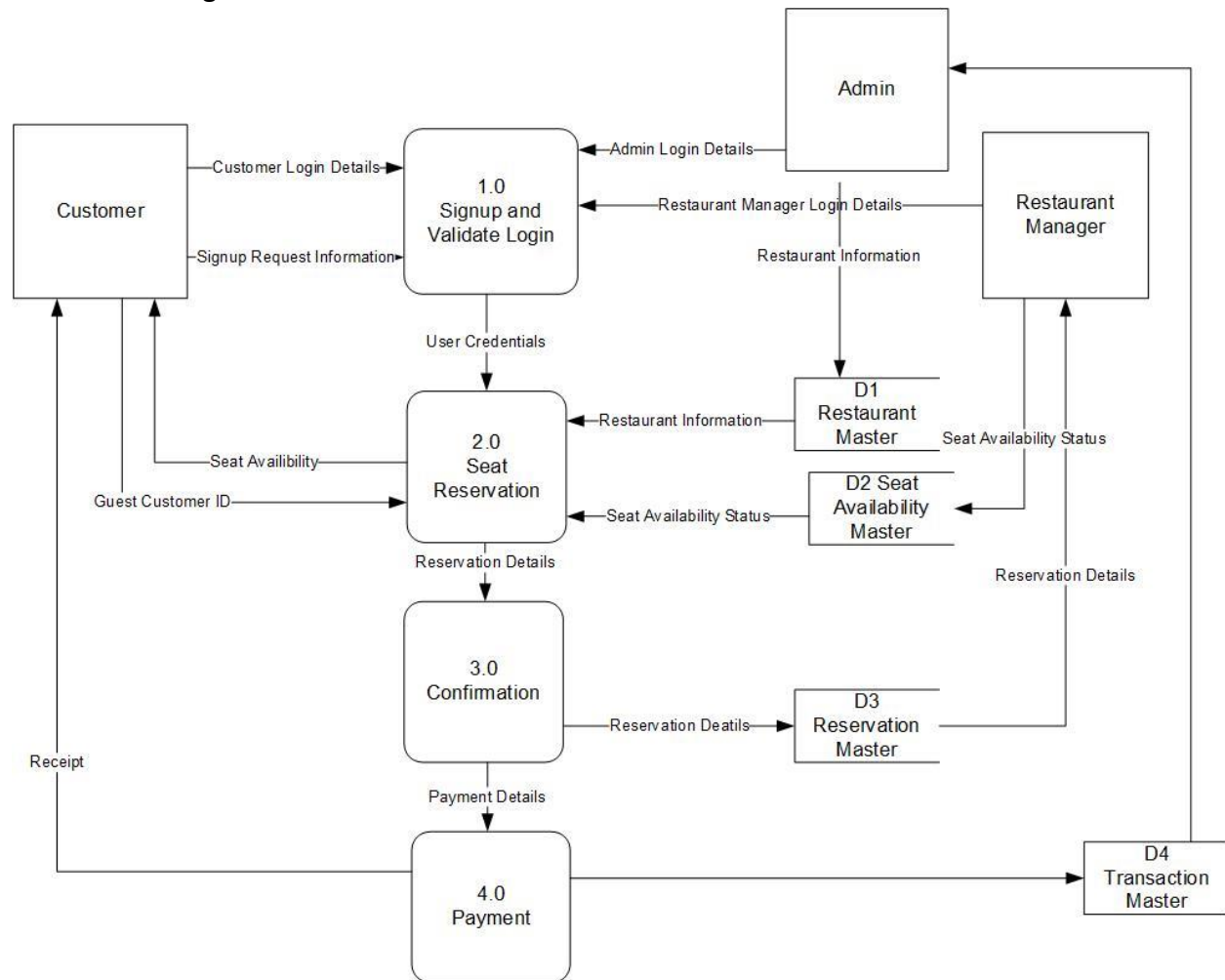
Context Diagram



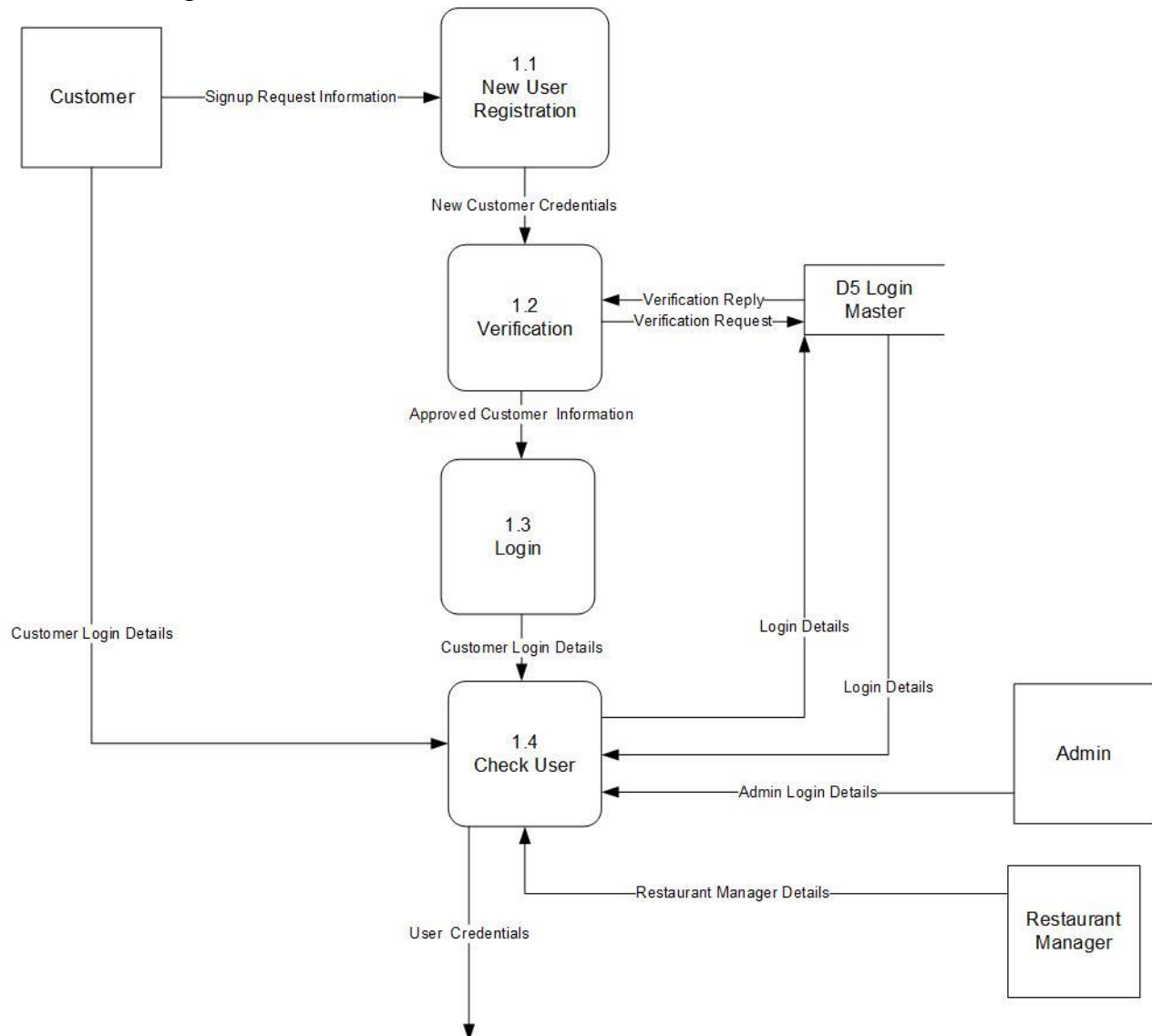
It defines the boundary between the system, or part of a system, and its environment, showing the entities that interact with it. This diagram is a high-level view of a system.

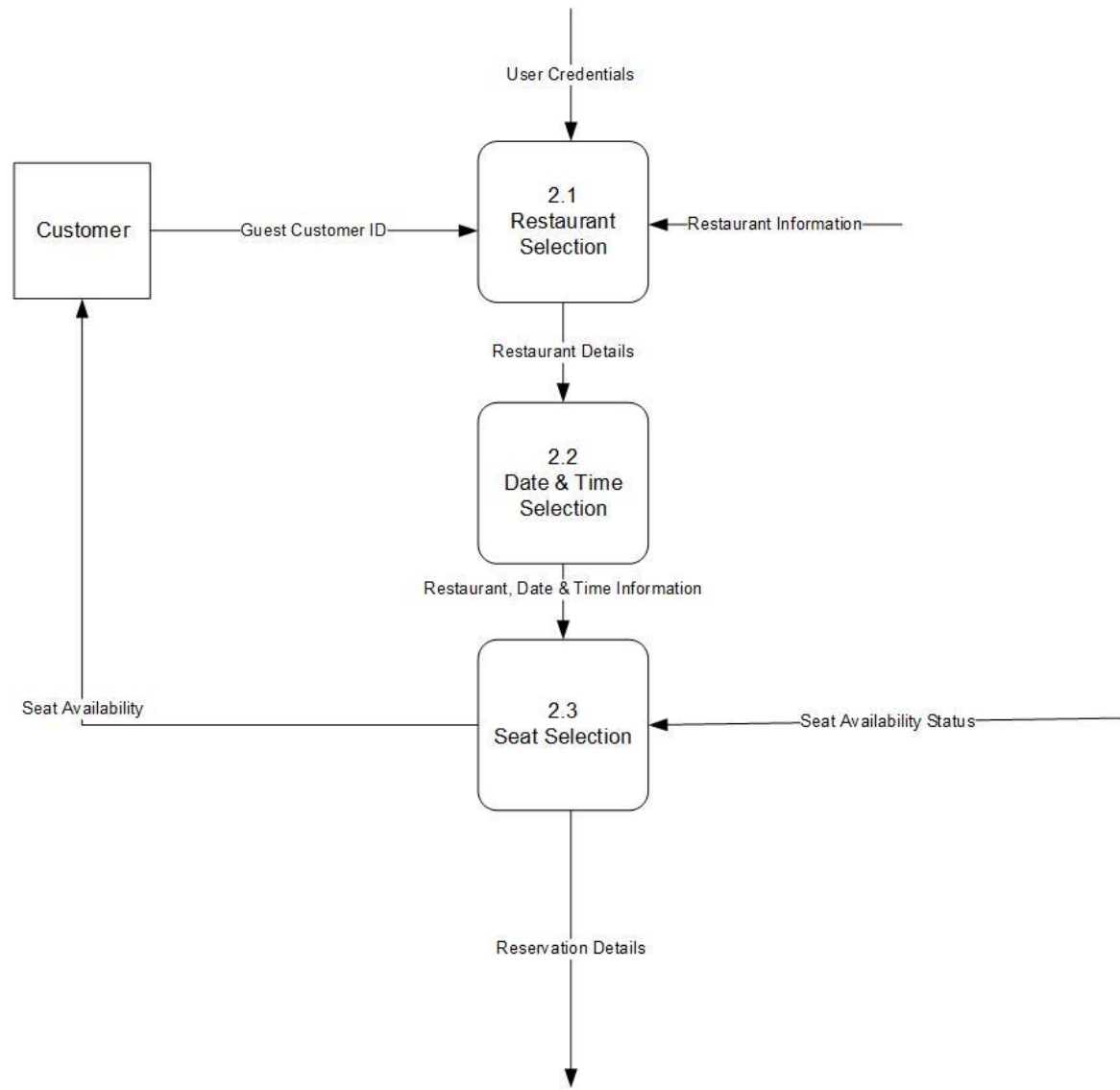
Data Flow Diagrams

DFD level 0 Diagram

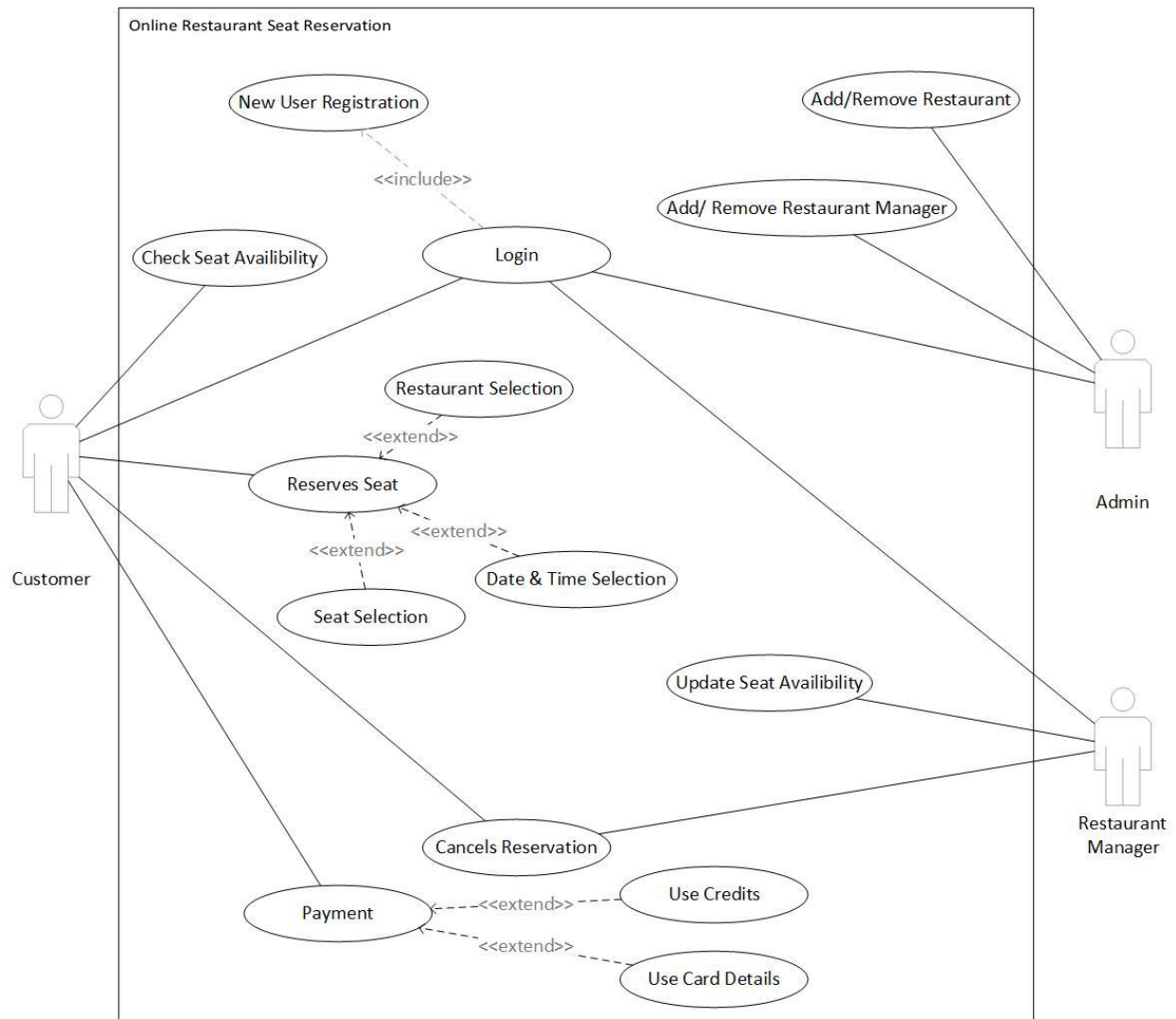


DFD Level 1 diagram





Use Case Diagram



Use Case Scenarios

Use Case Name	Making Table Reservation
Area	Reservation Planning
Description	The table reservation system will allow the customer to make table reservation in advance to save his time from waiting in long queues at the restaurant. The customer can be an existing or a new user can create an account. Two types of payment options are available i.e., using credit/debit card.
Actors	Customer, Admin, Restaurant Manager
Triggering Event	Customer uses Registration Web site, enters UserID and password, and clicks the login button
Trigger type	External and Temporal
Steps Performed (Main Path)	Information for Steps
1. Customer logs in directly to the system. [Includes: new customer creates an account and logs in]	Customer ID, Password
2. The customer will choose the table and requests to reserve it.	Customer Record, UserID, Password
3. The system will book the table requested by the customer and ask for the payment only if it is a weekend or high rush day.	Confirmation Web Page
4. The customer will make the payment (if applicable). [Extends: choose the payment option; Extends: cancel the reservation]	Secure Credit Card Web Page
5. The system verifies the account information. [Includes: Denial of confirmation due to non-availability of credit in the card; Includes: Invalid card information]	Confirmation Web Page, Session Record
6. The system provides the confirmation of the reserved table. [Extends: Ask for the method to provide confirmation number]	Confirmation Web Page, Customer Record
7. The customer gets the confirmation number.	Registration Record Confirmation Number
Variations in success flows	
1. Old customer can update the account information such as his demographics, card details and membership status (returning or new). 2. Payment can be made using credit card or debit card. 3. Customer can also cancel the reservation, if not needed any more. 4. Confirmation can be available through text and e-mail.	
Extensions or Alternative Scenarios	
1. Denial in log in due to wrong information.	

<ul style="list-style-type: none"> The system will ask for putting correct information. The old customer will provide the correct information. The system will allow the log in. 	
2. No free table available. <ul style="list-style-type: none"> The system will provide alternative timings or location for making table reservation. The customer will select new time and new location. The system will book the new reservation. 	
3. Denial of confirmation due to non-availability of credit in the card. <ul style="list-style-type: none"> The system will ask to add some credit in the card to proceed for the payment. The customer will credit some money into the card. The system will validate the payment and provides confirmation. 	
4. Invalid card information. <ul style="list-style-type: none"> The system will notify for wrong information of the credit/debit card. The customer will update the correct information of the card. The system will validate the card information and provides confirmation. 	
Pre-Condition	The customer has a valid account information and card credentials.
Post-Condition	Customer got the confirmation for the reservation.
Assumptions	Customer has a browser and a valid UserID and password.
Success Guarantee	Customer has registered for the table reservation.
Requirements Met	Allow customers to be able to register for the reservation using a secure Web site
Outstanding Issues	How should a rejected credit card be handled?
Priority	High
Risk	Medium

Use Case Name	Update Table Status
Area	Table availability
Description	This use case is defining the steps for updating the table availability which will be seen by the customer when they login in their portal.
Actors	Restaurant Manager
Steps Performed (Main Path)	Information for Steps
1. The Manager will log in to the system.	UserID, Password
2. Search for available table in the restaurant.	List of all the tables with their location in an interacting web page
3. Update the status of the table.	
4. Confirm the status of the table.	Confirmation Web Page
Extensions or Alternative Scenarios	
1. Denial in log in due to wrong information. <ul style="list-style-type: none"> The system will ask for putting correct information. The old customer will provide the correct information. The system will allow the log in. 	

2. The manager does not have privileges to update the table status.	
Pre-Condition	The Manager has a valid account information and privileges.
Post-Condition	Customer got the confirmation for the reservation.
Assumptions	Manager has a browser and a valid UserID and password.
Success Guarantee	Manager has updated the table availability.
Requirements Met	Allow Restaurant Manager to be able to update the availability of the tables in the Manager portal.
Priority	High
Risk	Medium

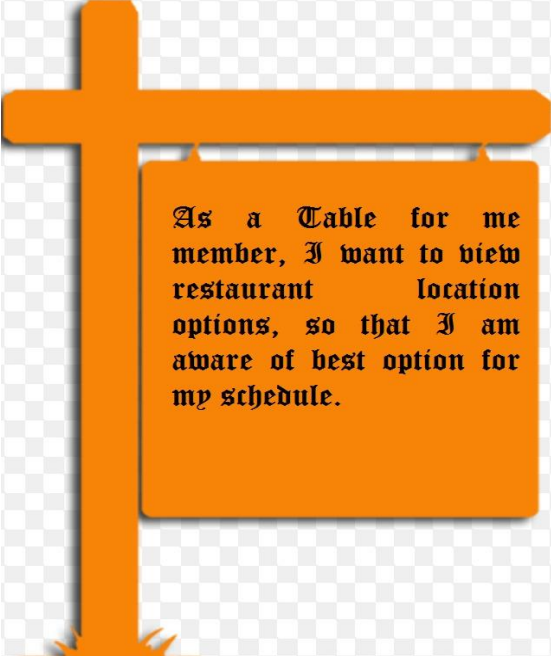
Use Case Name	Create Account
Area	Account
Description	This use case describes how the Customer will create an account for the system through which he will be able to log in.
Actors	Customer
Steps Performed (Main Path)	Information for Steps
1. This use case starts when the customer wishes to create a new and unique account for the system.	Functioning web browser
2. The system requests the customer to enter his identity details.	Valid UserID and Password
3. The actor enters the name, address, city and date of birth.	
4. The system validates the entered details and if they do not exist already, it creates a new entry for that customer.	Email
5. The user is redirected to the main website to the user dashboard.	
Extensions or Alternative Scenarios	
1. If in the basic flow, the actor tries to create an account with details that has already been created for some other customer then; the system does not let the actor do so and redirects him to the same page again. 2. If in the basic flow, the customer tries to create account with details that are not possible say DOB 2050 when it is year 2017, the system does not allow submitting the form.	
Pre-Condition	The customer does not create two accounts for himself and no fake accounts because system will not accept fake payment details.
Post-Condition	Customer got the confirmation in his e-mail.

Assumptions	Customer has a browser and a valid UserID and password.
Success Guarantee	Customer creates an account.
Requirements Met	Customer gets a valid UserID and account.
Priority	Medium
Risk	Medium

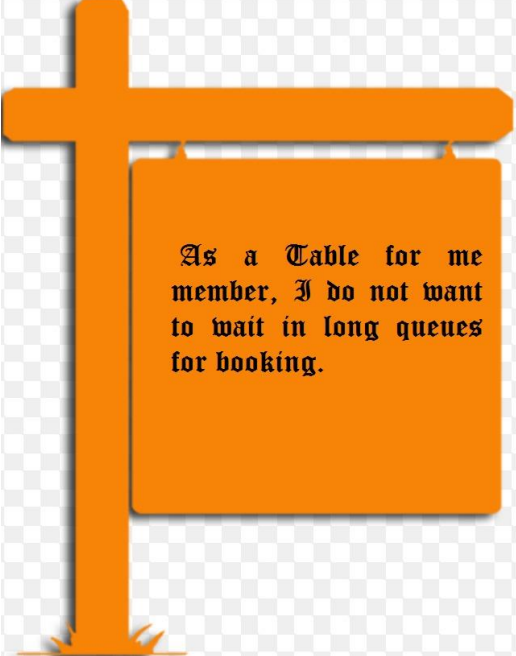
Use Case Name	Cancel Reservation by Customer
Area	Cancelling booked reservation
Description	This use case describes how the actor (Customer) cancels the reservation.
Actors	Customer, Manager
Pre-Condition	The customer has a valid account and he also has a confirmation number.
Post-Condition	The customer cancels the reservation.
Steps Performed (Main Path)	Information for Steps
1. Customer logs in using the secure Web server.	UserID, Password
2. Customer clicks on My Bookings button on his dashboard.	Customer record, Session Record
3. Customer clicks on the Cancel button next to his booking (Confirmation number) he wishes to cancel.	Cancellation web page
4. Cancellation webpage is displayed to confirm the cancellation along with the list of reasons for cancellation.	Cancellation web page
5. The Customer and Manager gets a cancellation confirmation on their respective emails.	
Extensions or Alternative Scenarios	
1. If in the basic flow, the actor has not mentioned required details, the system will prompt to enter those before clicking Login. 2. The actor might click on the wrong booking.	
Pre-Condition	The customer has a valid booking.
Post-Condition	Customer and Manager got the cancel confirmation in their e-mail.
Assumptions	Customer has a valid booking.
Success Guarantee	Customer has successfully cancelled the booking.
Requirements Met	Allow Restaurant Manager to be able to update the availability of the tables in the Manager portal.
Priority	High
Risk	High

Use Case Name	Cancel Reservation by Manager
Area	Cancelling booked reservation
Description	This use case describes how the actor (Manager) cancels the reservation if the customer does not show up in 15 minutes after the booking time.
Actors	Manager, Customer
Pre-Condition	The Manager has a valid account and he also has a confirmation number.
Post-Condition	The Manager cancels the reservation.
Steps Performed (Main Path)	Information for Steps
1. Manager logs in using the secure Web server.	UserID, Password
2. Manager clicks on Current Bookings button on his dashboard.	Booking record
3. Manager clicks on the Cancel button next to the booking (Confirmation number) he wishes to cancel.	Cancellation web page
4. Cancellation webpage is displayed to confirm the cancellation along with the list of reasons for cancellation.	Cancellation web page
5. The Customer and Manager gets a cancellation confirmation on their respective emails.	
Extensions or Alternative Scenarios	
1. If in the basic flow, the actor has not mentioned required details, the system will prompt to enter those before clicking Login. 2. The actor might click on the wrong booking.	
Pre-Condition	The customer did not arrive and has a valid booking.
Post-Condition	Customer and Manager got the cancel confirmation in their e-mail.
Assumptions	Customer has a valid booking.
Success Guarantee	Manager has successfully cancelled the booking.
Requirements Met	Allow Restaurant Manager to be able to update the availability of the tables in the Manager portal.
Priority	High
Risk	High

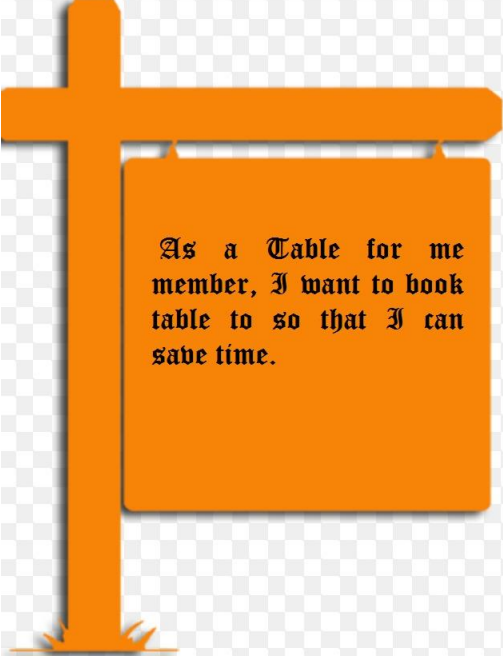
User Story

An orange user story card with a vertical post and a horizontal header bar, set against a grey and white checkerboard background. The card has a small shadow and a small orange tab at the top.

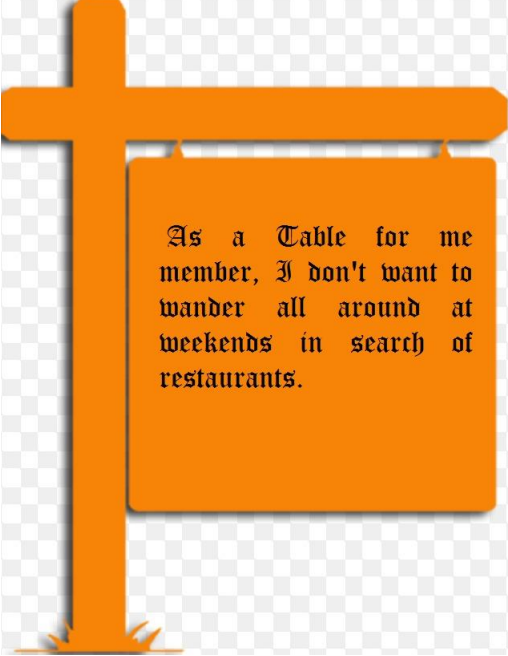
As a Table for me member, I want to view restaurant location options, so that I am aware of best option for my schedule.

An orange user story card with a vertical post and a horizontal header bar, set against a grey and white checkerboard background. The card has a small shadow and a small orange tab at the top.

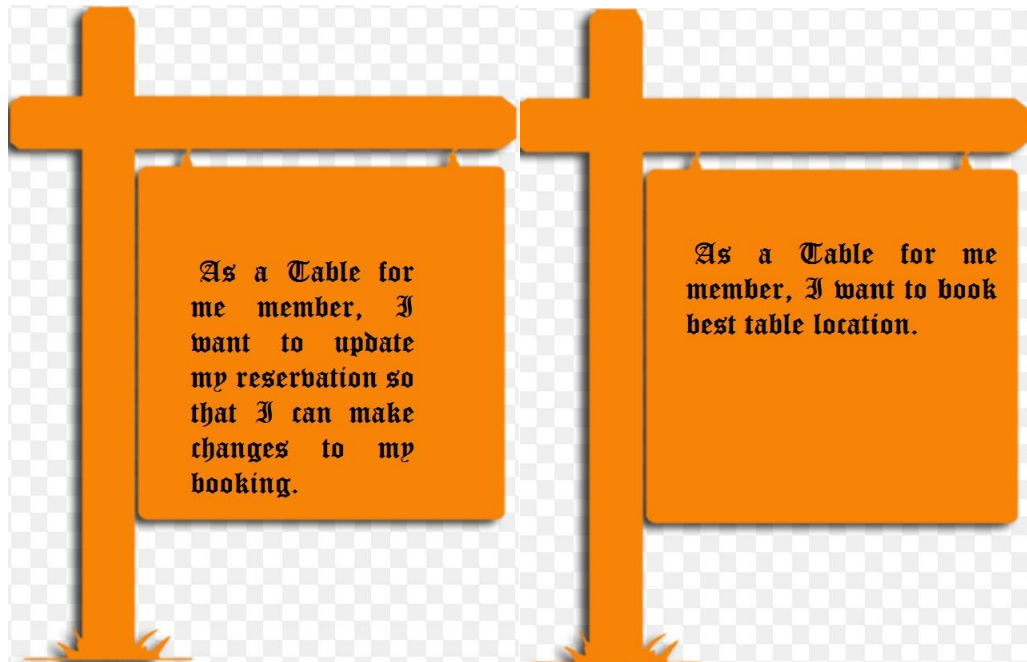
As a Table for me member, I do not want to wait in long queues for booking.

An orange user story card with a vertical post and a horizontal header bar, set against a grey and white checkerboard background. The card has a small shadow and a small orange tab at the top.

As a Table for me member, I want to book table to so that I can save time.

An orange user story card with a vertical post and a horizontal header bar, set against a grey and white checkerboard background. The card has a small shadow and a small orange tab at the top.

As a Table for me member, I don't want to wander all around at weekends in search of restaurants.



Future Scopes

After taking the survey, we found out following observations:

- 83.3% of the people prefer dinner time and 50% lunch time as the best time to go to the restaurant.
- 80.9% of the people prefer to go to a restaurant in Saturday followed by 63.8% on Friday.
- 70.8% of people surveyed do not want to wait more than 15 minutes for their table.

Keeping these things in perspective our project targets these audiences and provide following enhancements:

- We can add more restaurants that offers a dining and lunch.
- Adding special offers on Saturday and Friday to get more customers.
- In case there is any requirement of shifting a booked table to some other time due to high influx of people or some other circumstances, the new booking time should shift by not more than 15 minutes.