FoodSquare

CSE 326 Report

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February 15, 2019

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1 Introduction

Being able to pick the best restaurant from thousands of choices isn't quite an easy task. Not all restaurants can provide foods and environments after your choice. So to help all those foodies out there, we have aimed to build a system that would let you choose the best restaurant based on the numerous reviews and ratings provided by our users. Also, our system gives you the options to order food online, review and rate restaurants, book restaurants in advance.

We are trying to implement a restaurant management system both for Android and web platform

In our system, there will be three major stakeholders. One is the restaurant manager, one is the customers of the restaurants and the other one is the delivery-man. Restaurant managers will have access to edit or update their restaurant's info. Customers will be able to browse a list of menus from which they can pick ones for online delivery or simply check out the review and rating section. They can provide reviews and feedback which help other users to make their choices. Also, these reviews help the restaurant managers to upgrade their quality.

There are some apps/websites that have some of these facilities. Some have online food delivery, some have location/preference based restaurant search facilities, some social media groups have a review system. But neither of them are organized. We want to bring all these under the hood of our system for the simplicity of the users. Both the customers and restaurant managers can be benefited by such a system.

2 System Overview

As mentioned already in the introduction part, three major actors in this system are the restaurant managers and customers and delivery man. There will be system-admin as well, who will be moderating the system. New restaurants may contact the admin to put up their information on the system.

Major subsystems:

2.1 Order subsystem:

Any customer can order foods and get delivery easily through the app. Also, he/she can submit review of delivery and restaurant easily. Restaurant can also be easily booked online interacting with the manager.

2.2 Offer subsystem

All three major types of offers have been considered from any perspective. Restaurants, App, Regular all sorts of offer can easily be accessed by customers from one single place. Moreover, subscription to favorite restaurants have also been brought under this subsystem.

2.3 Restaurant Management subsystem

This subsystem primary deals with the management of restaurant, menu and responding to bookings. This subsystem manages how food items will be stored into our system's database.

3 Use case

3.1 Order

Any customer who has signed into our app can order for foods providing the required information. In order to submit an order, at first customer has to enter create order UI and then s/he has to select item(s) to order for and provide a delivery address to place the order into the restaurant's database. Moreover, customers can book restaurants online. In the latter case, the restaurant manager will be notified and respond to the request. On confirmation customer will have to pay some amount in advance online with cards.

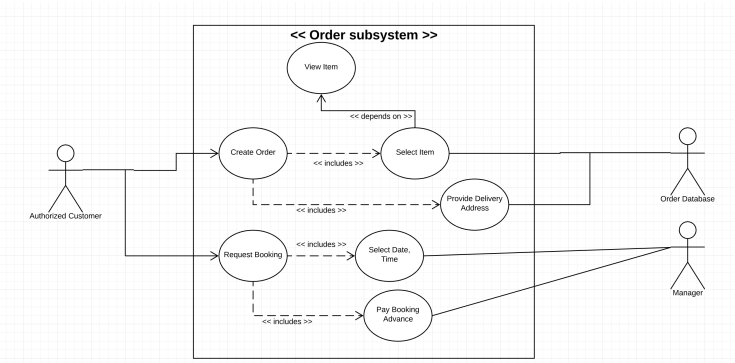

Figure 1: Order Use Case

3.2 Restaurant Management

Managers of the restaurants will respond to the requests for restaurant booking. They can update the restaurant's information and also a menu (adding a new item, editing price of an item etc.), food picture, other generic information. They would respond and confirm restaurant booking depending upon the restaurant's current capacity etc.

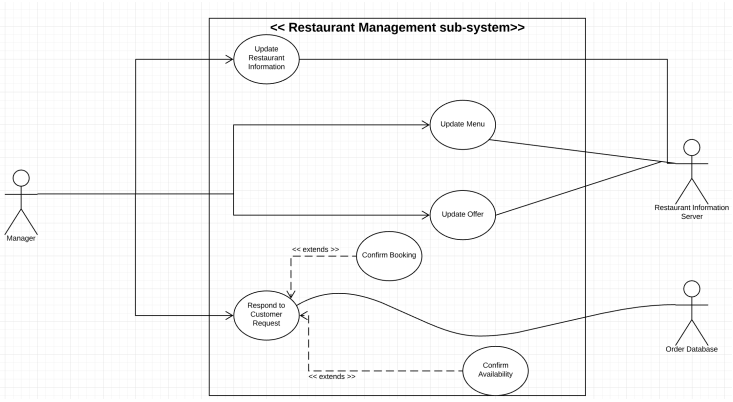

Figure 2: Restaurant Management Use Case

3.3 Review

In our system, two-way review and rating system have been taken into consideration for both customers, restaurant pair and customer, delivery man pair. The customers can rate/review a restaurant, share a public review of any particular item. Also, the restaurant authority can rate a customer. In the case of rating/review of the delivery man, the rating can be provided after the parcel has been delivered.

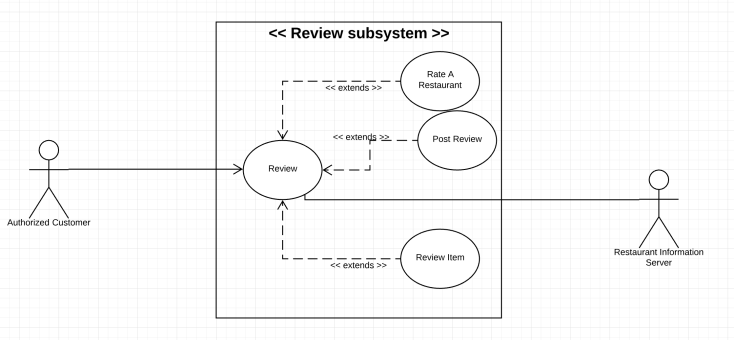

Figure 3: Review Use Case

3.4 Offer

In our system, three types of offers have been taken into consideration.
1. Regular offers on items of a restaurant
2. Discount for selected regular customers (from Restaurant authority)
3. Promo for regular app users (from our management service)
Again, any customer can subscribe to any restaurant to get notified first about any offers from his/her favourite restaurant. Our system will automatically send the promo to selected users.

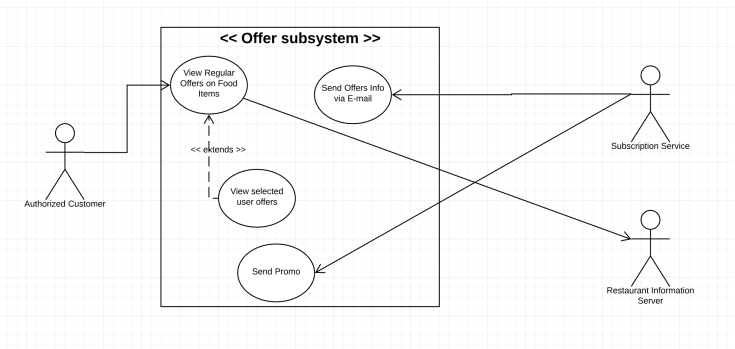

Figure 4: Offer Use Case

3.5 Payment

One can pay with cards or in cash when the delivery is completed and delivery man will receive the payment and acknowledge it.
A customer can apply promo/use discounts in case of any sort of payment like receiving the parcel from delivery man or paying with cards online.

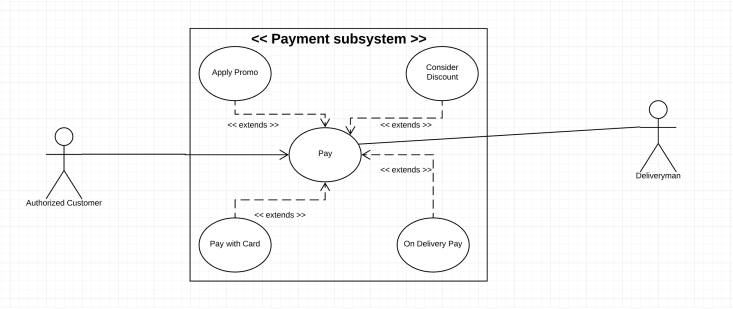

Figure 5: Payment Use Case

4 Entity Relationship Diagram

ER diagrams of our project are given below:

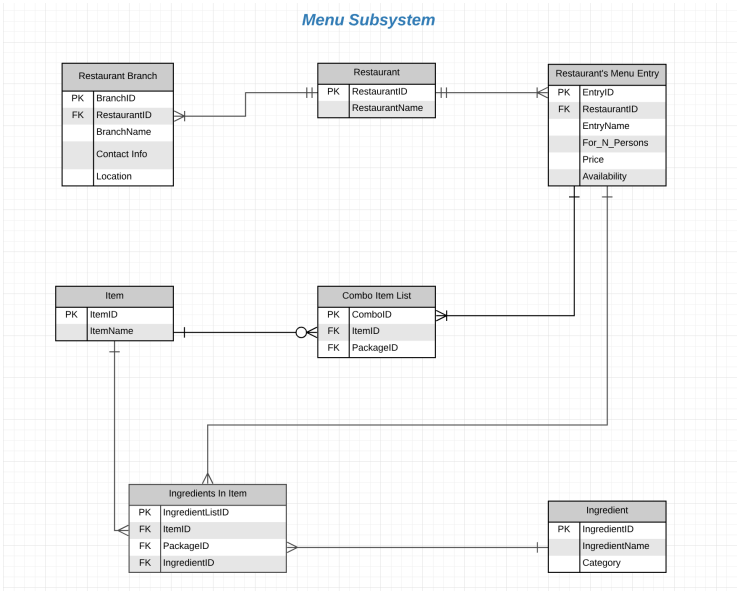

Figure 6: ERD for Menu sub-system

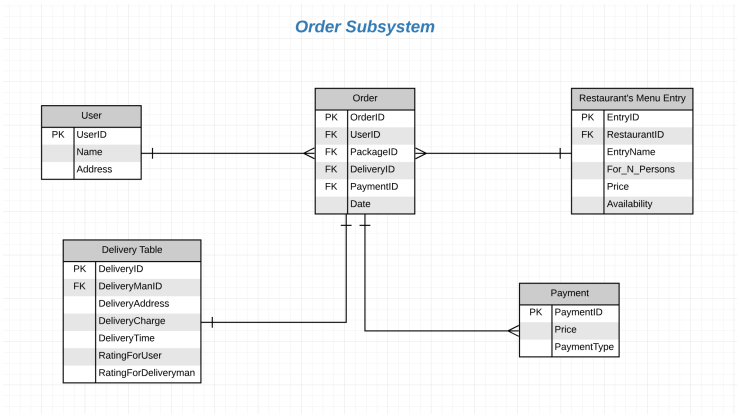

Figure 7: ERD for Order sub-system

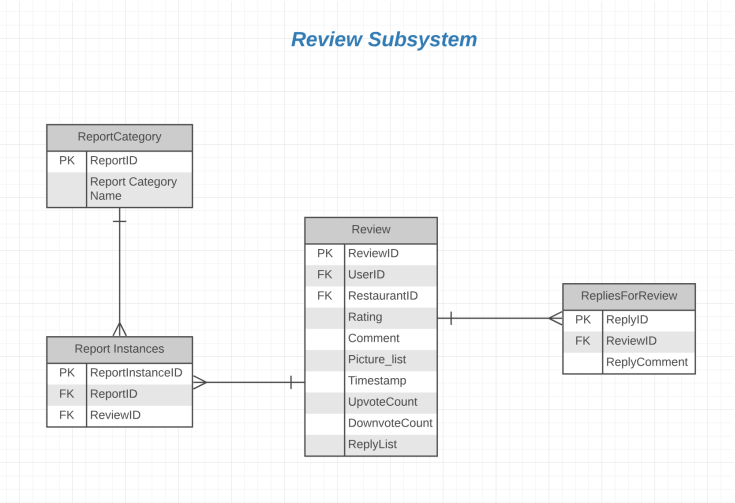

Figure 8: ERD for Review sub-system

5 Class Diagram

Class diagrams of our project are given below.

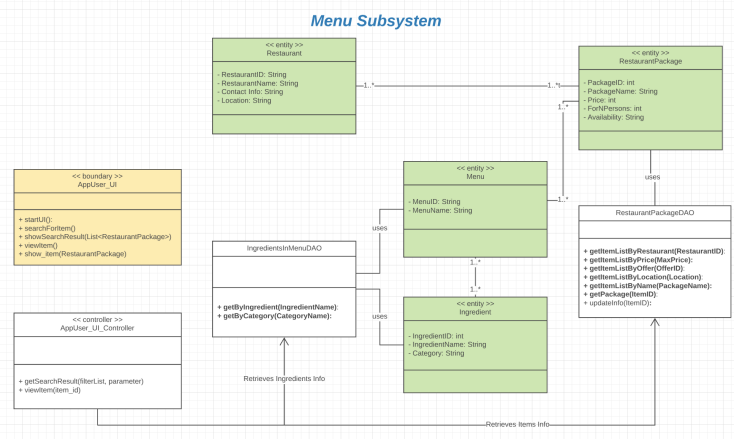

Figure 9: UML Diagram for Menu subsystem

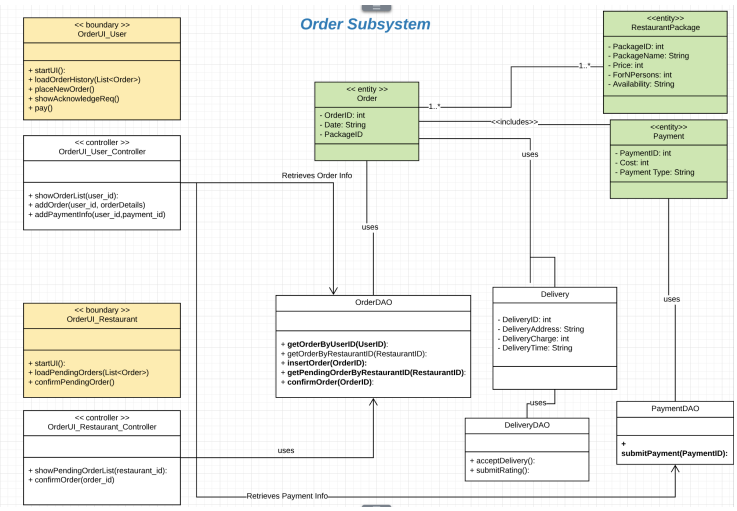

Figure 10: UML Diagram for Order subsystem

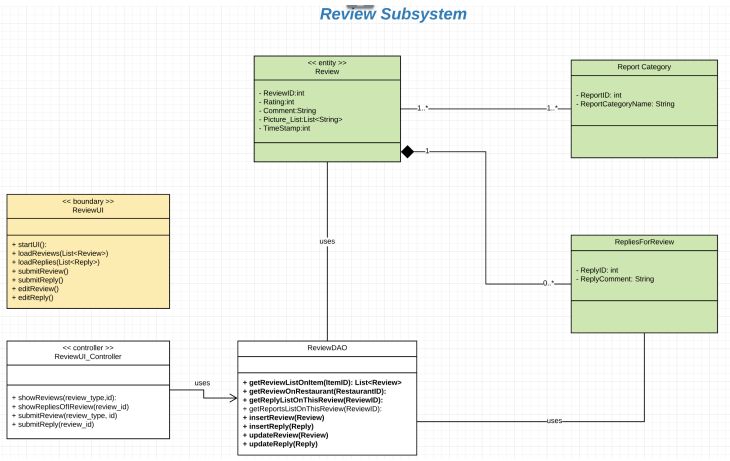

Figure 11: UML Diagram for Review subsystem

6 Sequence Diagram

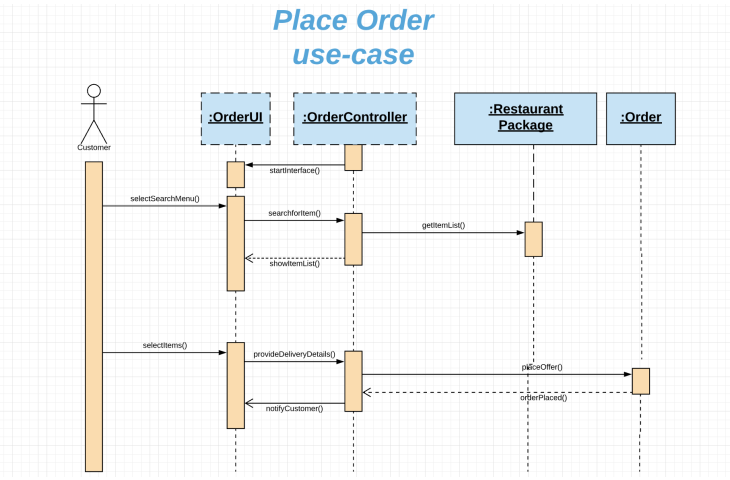

Figure 12: Sequence Diagram for Placing Order

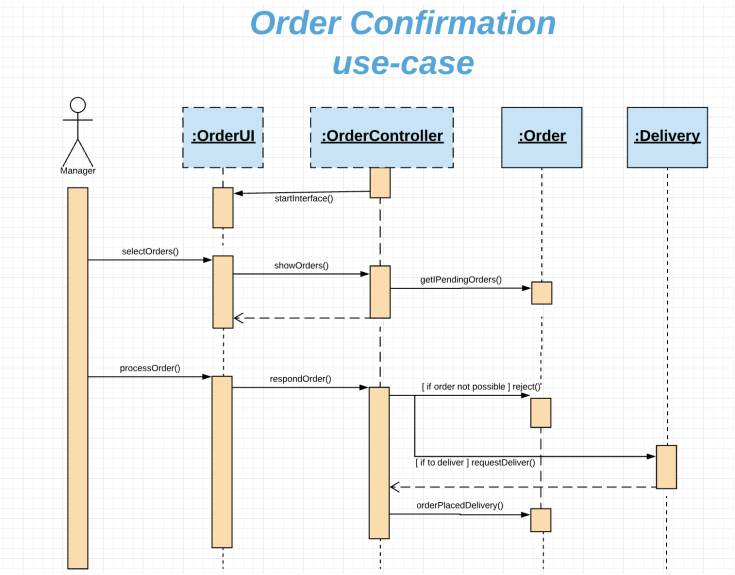

Figure 13: Sequence Diagram for Order confirmation

7 Data Flow Diagram

7.1 Order Subsystem:

Entities: Customer, Restaurant, Delivery Man
Data flow: Item info, Order info, Rating details, Delivery details, Payment info

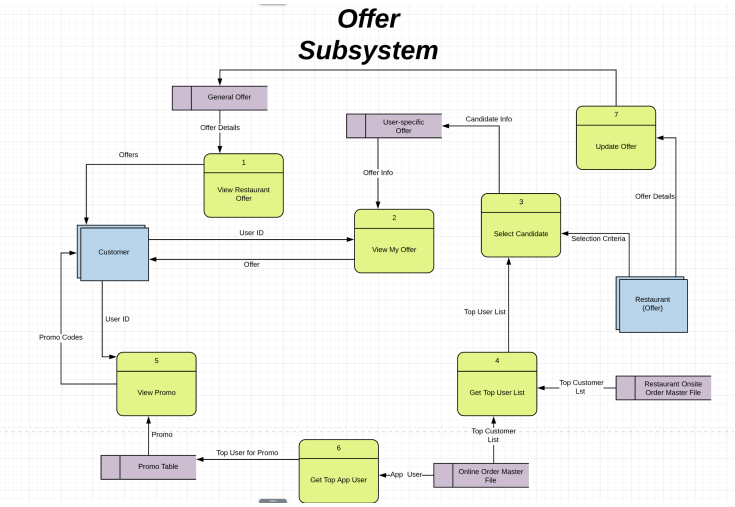

Figure 14: DFD for Offer sub-system

7.2 Offer subsystem:

Entities: Customer, Restaurant
Data flow: Restaurant specific offer,User specific offer, Promo details, Top user info, Candidate selection info

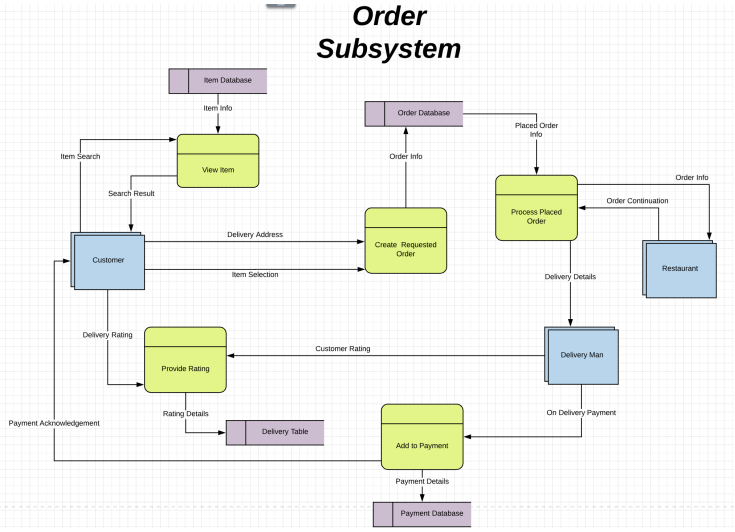

Figure 15: DFD for Order sub-system

8 Gantt Chart

We are going to implement our project module by module, using our use case diagram. Thus, our sub tasks will be based on our use cases. The final Gantt chart will be the following:

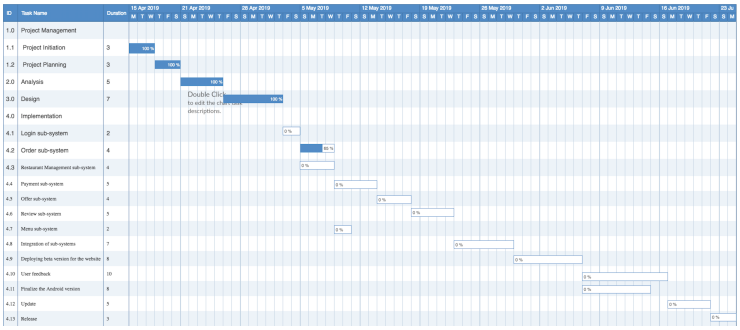

Figure 16: Gantt Chart for the System

9 Implementation Examples

So far, we have tried to implement the order sub system for the web version of our project. At the current state of implementation, as a user one can place an order by browsing the list of available food items and restaurants in our website.

Following are some snapshots of our implemented sub-system:

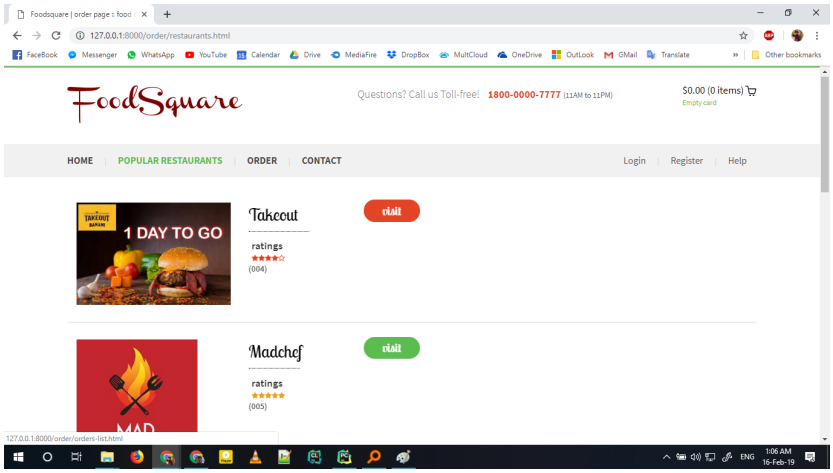

Figure 17: Visiting Restaurants Page

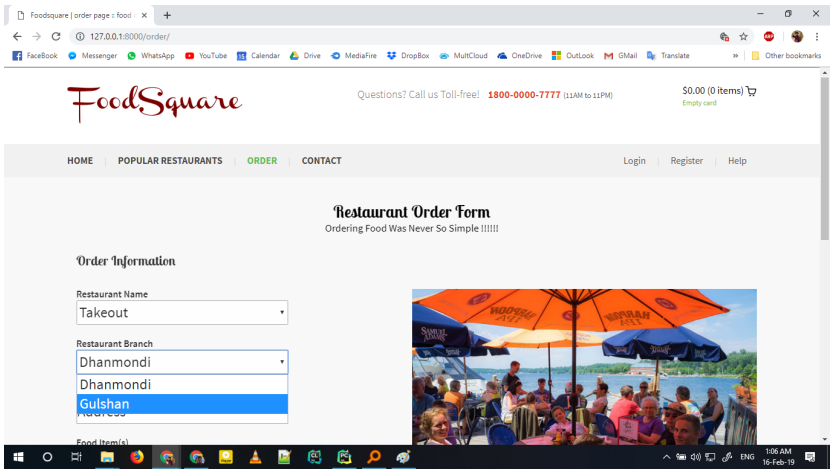

Figure 18: Selecting restaurant's branch

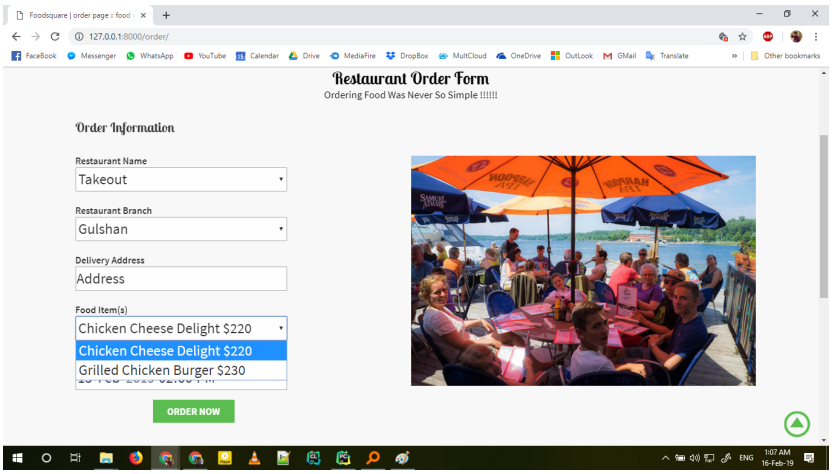

Figure 19: Selecting food item

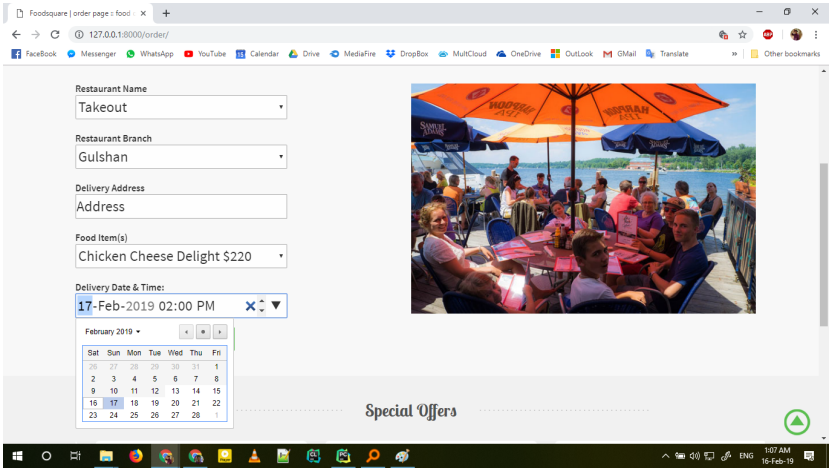

Figure 20: Selecting date of delivery

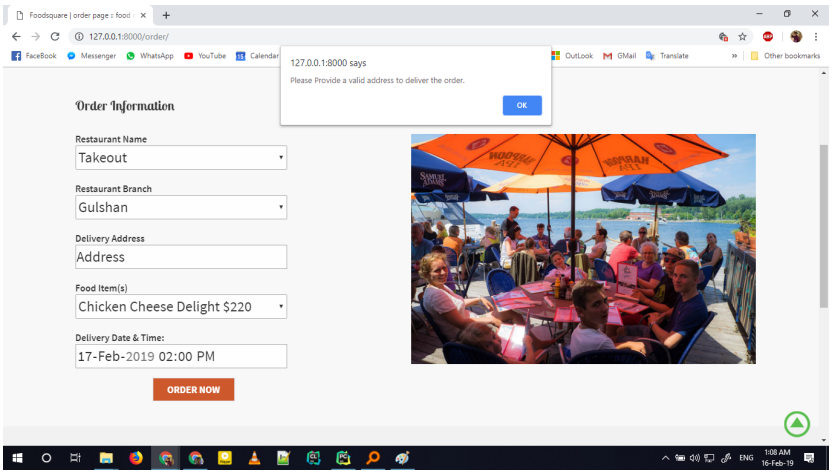

Figure 21: Orders can't be processed without giving address

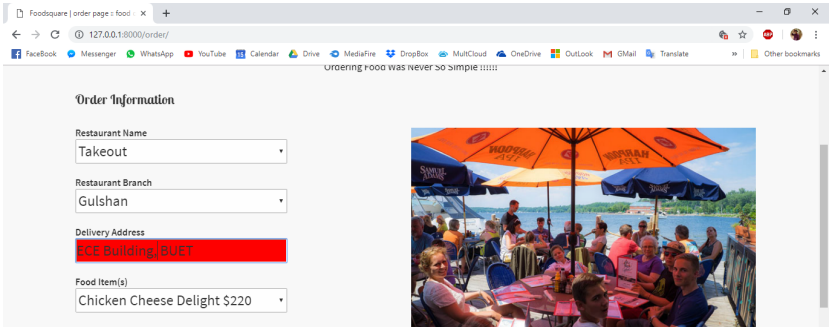

Figure 22: Providing appropriate delivery address

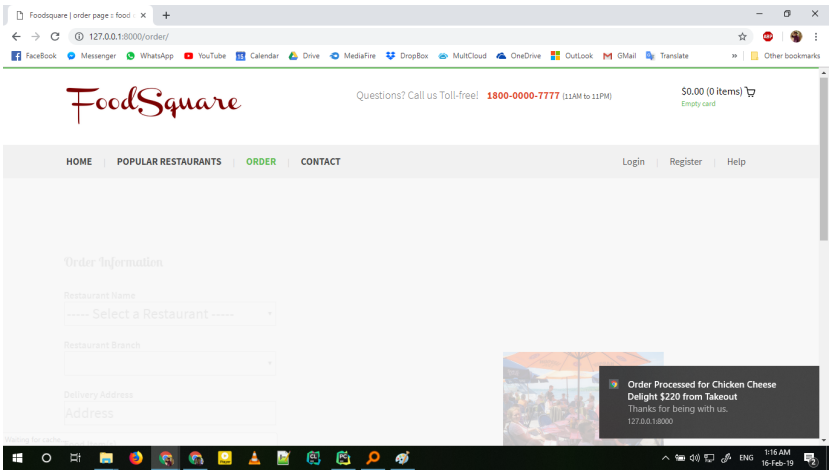

Figure 23: Users are notified once the order has been placed

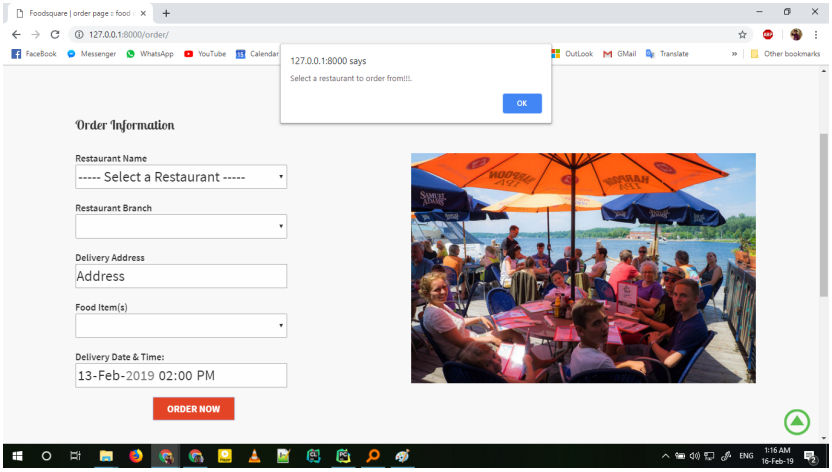

Figure 24: Order can't be proceeded with keeping fields blank

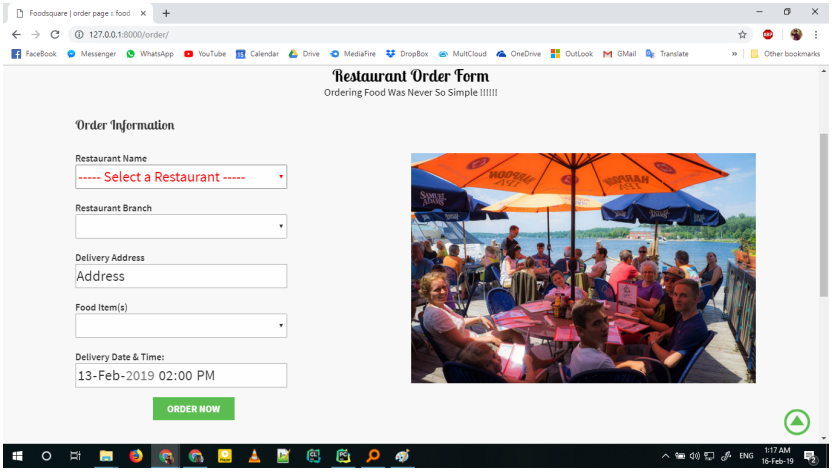

Figure 25: Once order is placed,Fields are reset to place new order

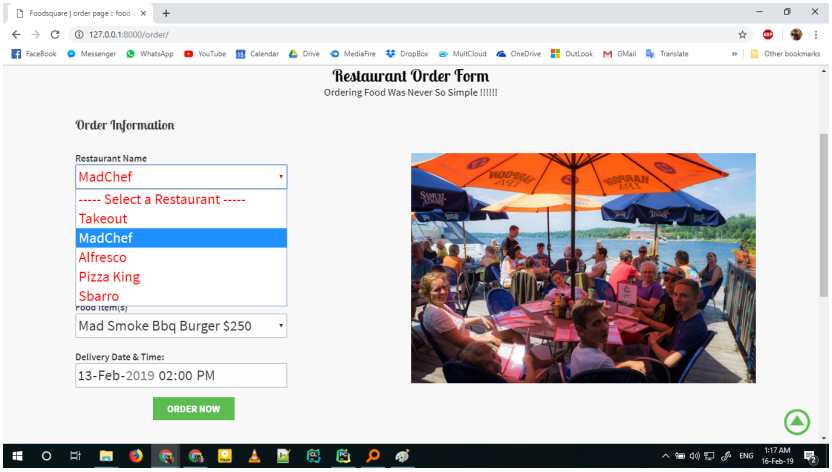

Figure 26: Place another offer

10 Conclusion

Currently we are working with restaurants only in Dhaka city. We have future plans to extend our project to work with all the major cities of Bangladesh. We have plans to improve our recommendation system by applying machine learning.