Find our GitHub repository at: https://github.com/wongkristen/SE\_RestaurantAutomation

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EasyEats

A Restaurant Automantion Proposal January 29, 2017

**Proposal:**

We would like to increase the efficiency and profitability of a restaurant by creating a single application that could handle every task the manager, customers, and employees need to run the business. Customers should be happier with the experience they have with our application than without. The system we design will help restaurant personnel coordinate their activities and improve their services, and for the management to track business growth and create future plans. We are modeling our design on the strengths and weaknesses in the Ziosk system that popular chains like Red Robin currently use. The Ziosk company boasts 85% Ziosk usage in their restaurants, >50x increase in customer surveys, and reports on sales, server performance and guest satisfaction. Our system can be customized for not only large chains like Red Robin, but privately owned restaurants, like Meemon’s Diner in Monmouth County.

**What strengths we each have and why we as a group will be successful:**

We have complete confidence that our team will be able to complete this project both effectively and efficiently. Each of our individual team members possess their own different strengths that will enhance the quality of the project while complementing the abilities of the other members. Elizabeth has worked in the agile process before, has responsive web development experience in AngularJS, and database query experience with mySQL. Her primary coding language is Java because she has completed the computer science courses up to and including software methodology courses. Having created mobile applications on teams in the past, Kristen has a great amount of experience with full stack development. Brett has experience with a variety of software, experience coding from software methodology, and previous restaurant experience. Prithvi has experience from previous small programming projects using C++ and is knowledgeable about object-oriented analysis and design and time management. Tejas also has experience working on small programming projects in C++ and has a good understanding of data structures and algorithms. Mithulesh has experience coding in both C++ and Java and has worked on software projects in both languages in the past. With our combined qualifications, we form a well rounded team to successfully complete the given project. Our team of six members is easily divided into three subgroups of two so the large responsibilities of this project can be adequately divided so that no member of the team will become overwhelmed with their workload. On the other hand, our team is small enough that communication with each other and holding group meetings will not be an issue.

**Problem diagnosis:**

1. As a potential customer, I want a platform to know if a table is available before I get to the restaurant and to view times of the current day that are busy or not. I also want an interface that allows me to reserve tables in advance (and potentially request a waiter if the waiter is available). I would also like to look at the menu so I can decide if I want to eat there. On the menu, I want to select allergies that I have to narrow down the menu to have only dishes that don’t conflict with my allergies. Placing reservations and looking at the menu through a smartphone are features borrowed from previous projects.
2. As a diner, I want to call a waiter over to my table so I can have my needs met faster. In addition, I would like to be able to order my food and pay my bill at my own leisure without having to wait for the assistance of a waiter. I would also like to be able to customize my order at the table. I would like to be able to describe my satisfaction with the service of the waiter by being able to select the waiter that served our table through a list of pictures and names and rate their friendliness and helpfulness (additional information for the manager to have access to). I would like to be able to rate each dish on a rating from 1 to 5. I would be able to pick a song from a playlist selected by the host. I would also like to be able to select allergies that I have to narrow down the menu to have only dishes that don’t conflict with my allergies. Ordering food through a smartphone without the assistance of a waiter and paying my bill at the table (through a tablet) are features taken from previous projects.
3. As a chef, I want to know the orders once diners have placed them, to prepare the necessary staff and ingredients. Additionally, I would like to be able to notify waiters when meals are ready to be delivered to tables. I would also like to be able to remove items from the menu if the ingredients are no longer available, and add the day’s specials. All these features are being reused from previous projects.
4. As a host, I want to know the status of the tables without having to walk through the restaurant to check. I also want to be able to view and edit any reservations made as well as the queue of parties waiting to be seated. I would like to know the time remaining for a table reservation before the reservation expires. I would also like to be able to select a playlist that will play through the restaurant. Viewing the status of tables and reservations are features being reused from previous projects.
5. As a bartender, I would like to know what drinks have been ordered so I can make them, and would like to be able to notify the waiter of drinks that are ready for specific tables. I would also like to be able to remove items from the menu if the ingredients are no longer available. I would like to be able to view my ratings/reviews to improve my performance. The queue, and altering menu capabilities are reused features. The menu capabilities have been simplified to no longer show inventories, but to instead only allow the bartender to make drinks invisible on the menu.
6. As a waiter, I want to know when a customer is asking for service. I would also like to know the most efficient way to handle service. I would need to know the orders made at each table and when they can be served. I also would like a system that will notify me when tables have paid through the tablet at the table, and a way I can notify the host of when tables have left. I would like to be able to see the tip received from each customer/party as well as see the total tips received for the day and see the total tips received for any given month. I would like to be able to see my ratings/reviews from customers to be able to improve my performance. I would also like to know when a takeout order is ready to be taken from the kitchen to the customer. Knowing the orders of each table, when orders can be served, and seeing the number of tips received are all features borrowed from previous projects.
7. As a manager, I want to have full access to any records for the restaurant for a given period of time which would include inventory of supplies, capabilities to edit the menu, most popular orders, hours worked by individual staff members, the customer’s average wait time, and the most popular days and times people come in to eat. I would also like to grant and remove user access to the restaurant’s data interface as needed. I would like to be able to see the revenue produced each day and what items are creating a loss in order to adjust prices or remove the item altogether. I would be able to see the shifts of all staff members. I would also like to be able to view ratings of individual dishes that the customers have provided to see which dishes should be kept or taken out.

**Proposed treatment:**

* 1. We will make a website that gives customers information they want to know before going to the restaurant. The website will allow potential customers to know if a table, for their party size and time, is available. Customers will be able to see the availability of tables both in real time, and in the future. Through the latter feature, customers will also be able to make reservations in advance for their party. A reservation will require a name, time and party size. An additional criteria potential customers can use to choose a table is searching for a specific waiter who is clocked in. Customers can view the relevant day’s menu and be able to place an order for takeout but to prevent orders with no intent to pay, we will require payment for the order to be made prior to picking up (only credit/debit cards accepted) as well as any relevant information of the customer. \*(the ability to make a reservation was taken from the 2015 Restaurant Automation Group #3)
  2. We will designate an application that belongs on a tablet on each table that will have various options for the customer such as asking the waiters for a refill, extra utensil, or anything else they might need. Diners will be able to browse the menu and order their meal. The only items on the menu will be items the chef has ingredients to make, as well as daily specials, and the menu filter selections based on diet restrictions. The table will allow the customer to select a preferred song from a playlist of songs. \*(the ability to order a meal from the table
  3. We will have a tablet with a chef interface to allow the chef to see orders as they come in, notify waiters of finished orders, and access to hide menu items when/if ingredients become unavailable. There will be a backend database that the manager will update when food is shipped to the restaurant. \*(The ability to see a queue of the orders, mark orders as “completed”, hide menu items due to ingredient limitations, and update the database of supplies was taken from the 2015 Restaurant Automation Group #3)
  4. We will have the host have their own tablet which will have access to the floor plan of the restaurant that will display all tables and their status (empty, occupied, or reserved) and the wait times for a party of any common size. We will also show how much time is left before a table reservation expires and the table becomes available to other customers.
  5. We will have one tablet available for any bartenders to see drinks ordered and notify waiters when drinks for specific tables are ready. The bartender will also be able to see his/her ratings. \*(the ability to see the queue of drinks needed to be made and mark the order as completed was taken from the 2015 Restaurant Automation Group #3)
  6. The wait staff will each have a tablet to organize their priorities. They will have a priority queue of what tasks they need to do, and where they need to be. For instance, when an order is completed by the chef, the waiter will be notified and told which table to go to. Waiters will also be notified when they receive tips, which the system will automatically split with the chef and bartender (as appropriate). Waiters will be able to view statistics on their tips and ratings for the month.
  7. The manager will be the administrator to the whole system. There will be one database for inventory, one for employee records, and one for payroll. The manager will also be able to assign and remove restaurant employees access or work schedules to their respective portals and interfaces. The manager will be able to view all statistics collected from diners, including ratings of waiters and dishes. \*(the ability to modify the menu, track the inventory of supplies, view employee records, view customer feedback, and change an employee’s status to access the application were taken from the 2015 Restaurant Automation Group #3)

**Plan of work:**

It makes the most sense for the user stories and our coding team to be split into 3 parts. This way, each member of the team will have a partner to collaborate with for similar solutions. The user stories will be divided by employee roles, so that each interface can be more object oriented, and lend itself to reusable code.

Manager: Elizabeth and Prithvi

Our plan is to make all the functionality for a manager of the restaurant. From the manager’s interface, he/ she will have all the functionality of an employee, plus access control over other employees, scheduling control, and inventory control. We will make the manager able to see the current statistics of the restaurant. Since the customers and employee interfaces will be collecting important and personal information, the manager will be the only one able to view these statistics. Our goal is to make an intuitive platform that will handle organization of all these aspects for the manager.

Chef/bartender, waitress, hostess: Kristen and Brett

Our team will tackle the problems encountered by the chefs/bartenders, waitresses, and hostesses. We plan to create an organized database that will take data inputted by the customers and send it to the chefs, bartenders, waitresses, and hostesses. We will also create interfaces for the chefs/bartenders, waitresses, and hostesses so they will easily be able to view data being sent to them as well as input their own data into the interface. Our goal is to create a user-friendly interface and a well-organized database for our application to run smoothly. In addition, we will need to communicated to the Manager and Customers team to integrate our work to one central database with linked interfaces.

Customers (potential + takeout, dine in): Tejas Bhoir and Mithulesh Kurale

Our goal is creating a web application that potential customers can use in order to view current table availability, have access to the data for the busiest times for the restaurant, as well as make a reservation for a table. The interface will also include a menu of the restaurant as well as an option to reduce the menu list to foods that don’t conflict with their dietary needs (i.e. allergies). There will be a sub-interface to order food for takeout and that data must be communicated to the manager as well as the chef and waiters. There will also need to be an interface for the tablets at each of the table which will have the menu and various options such as food ordering, requesting the service of a waiter, selecting a song from a playlist, and paying the bill. The relevant data will be sent to the waiters, chefs/bartenders, host, and manager. Our goal is to have an easy to use interface that will give customers various options as well as allow the waiters, chefs/bartenders, host, and manager to keep track of all information and avoid any issues.