University of Puerto Rico Mayagüez Campus

Faculty of Engineering

Department of Computer Science and Engineering

Proposal: Reserve and Dine

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1. Domain description:

A restaurant or food establishment can be overpacked of customers at certain or most of the times. The host, waiters, chefs and cooks feel pressured and stressed by the overwhelming requests of the customers which can often lead into mistakes and even loss of earnings. A customer or a multitude of customers are greeted and seated by the host of the restaurant or can freely choose their seats depending of the food establishment. Where then they will be attended by a specific waiter, sometimes the waiter will reach the end of their turn and another waiter will start their turn, letting the customers know that the previous waiter was attending has completed s/he's shift. The waiter offers refreshments, proceeds to take the customers' orders and delivers the order to the chef and cooks for them to prepare. As the dishes are done the waiter proceeds to bring them to the table in the order of appetizers, main course and dessert, with bringing refreshments, necessary refills and any other service the customers require. Time is a major factor since it will influence the patience and satisfaction of the customers. When the customers decide to leave the establishment, they will request the bill to the waiter, choose the method of payment and how to distribute the bill (one, split or separate) and, have the option to tip the waiter for their service.

2. Current situation:

The restaurant industry right now gets overwhelmed during their lunch hours/rushes. These types of rushes create a problem for the staff as they must scramble about to have everything ready and for the customers as they might need to wait for their food to be served. The waiters must also keep in mind everything and this can cause orders to be mixed up. This would cost the restaurant time and money if the customer leaves or returns the plate.

3. Needs:

There is therefore a *need* to speed up the process of taking orders, having customers seated, and sending out food to conclude with payment from the customers. The application contributes to the administrative side of the operations as well as the customer service aspects of the operations.

4. Stakeholders:

- **Users:**
  - Costumers

- **Administration:**
  - Staff:
    - Waiters
    - Chefs/cooks
    - Manager
    - Owner
    - Bartender
    - Host

5. Ideas:

Sales and Reporting:

- User can reserve a place at the restaurant with their earned credit if reservations are allowed at the current time.
- The software should perform basic transactions without internet service. *only cash*
- The Software on the administration side allows the waiter to take the customer order and keep track of the account's activity.
- Reports of table activity are available for the stake holder.
- Table reservations use a Priority Queue implementation: “first in, first out.”

Customer Management:

- The software is capable of sorting tables as the customers come in.
- The software is capable of tracking of the restaurant’s activity.

Provider Management:

- Based on the creation of a customer profile containing the following information:
  - Name
  - Age
  - Birthday
  - Phone Number
  - Email

  These are used for both contact the user if necessary, check if the user can consume alcoholic beverages and keep track of activity.

User Management / Reporting:

- The software is capable of tracking waiter's tips and summarizing it at the end of the shift.
- Add items to the menu, employees and inventory to the application.
- It should be capable of creating detail reports on sales.
- It should project profits. By this we mean to understand the total value and retail value

6. Concepts:

The main idea of our software is to implement this tool seamlessly in the restaurant business and into our costumer's life. By proving an easy to use and personalize experience for our customers by reducing wait times and providing a hands-on customer service experience.

On the administration side of the software tool; we benefit from a detailed oriented and easy to use user interface in which one can create, edit and pay orders. While also being able to handle inventory and profit earning. By this we mean being able to keep track of items sold, how many where sold, and how much did we earn that certain day. The customers will leave, the waiter will clean and clear out the table for the next customers to visit.

7. Requirements:

- System will reserve a table for the customers in a manner of 'first come, first served.'
- All tables will have a display screen mounted that will let the customers choose and order their food.
- The system will have access of the tables, menu and employee information to provide knowledge to the customers that choose to visit the establishment.

8. Main Features:

- Reservations:
    i. Setting a request for a table. Sets them as they come in, much like a Queue.
    ii. The user can have the option to reserve a table at the food establishment with the implemented system.
- Order food:
    i. Waiters can take the table's orders.

ii. The user can choose from the menu whatever s/he wants to eat in the categories of appetizers, entrees, dessert, sides and drinks. The order is assigned to the table identifier and the system will let other stakeholders (chefs/cooks and waiters) know about the placed order.

- Payment:
  i. Capable of returning a detailed receipt and/or divide it.
  ii. The user will have a list of all the items ordered on that table and have the option to add as many receipts (1, 2, …, n; n=number of seats on the table), add the items to each receipt, names and specify payment option (cash, credit card, other). When all items have been included to the receipts, the system will print out each individual receipt. Also, can have the option to move all ordered items to a single receipt.

9. Scope, Span and Synopsis:

- Scope: The problem is handling the logistics and behind the scenes work in the food service industry.
- Span:
  - When managing a restaurant, the environment can be described as chaotic at time. Where each member of the staff is focused on which ever task needs to be done by priority. Customers come in and out of the establishment and usually must wait for either to be checked in or out. To later be taken care of by the waiter, that settles them in, offers drinks and takes their order. At times these waiters handle multiple accounts per table and must keep track of their request which is quite tedious by itself.
- Synopsis:
  - Payment: Since implementing online and credit card payments could be trouble some nice that would require a more secure and tedious approach. We have decided to purse to only take cash payments.
  - Restaurant Layout: Implementing a fixed restaurant layout that allows us to perfectly place customers as they come in.
  - Receipts: The software details the customer order with both quantity and price.

10. Goals:

The implicit goals for the domain would be faster service from the staff, a faster payment option that's also safe for the customer, easier reservation system that would alleviate the workload on the host (s), and a better system to order and for the chefs/cooks to see.