CSCI 441-A

Restaurant Automation

Team B

https://github.com/ivanvelocastaneda/CSCI441_A-Team-B-Project.git

Team Profile

Project Personnel's Qualification and Strengths

Bjarni Jonsson: Database design, SQL, Programming.

Cheikh Abdoulaye Faye: Programming, Front-end, communication, organization.

Sokhna Khady Mbacke: Design, documentation, management and organization.

Ivan Velo Castaneda: Programming, design, documentation, management and organization.

Overview

Project Description

This proposal is based on the idea of automating restaurant operations, from the book's project ideas. The traditional restaurant operations, which rely heavily on manual processes, have been identified as inefficient and prone to errors. The goal for this project is to develop a computerized system for small-to medium-sized establishments. This system aims to facilitate the coordination of personnel activities, enhance service quality, and enable management to monitor business growth while also formulating future plans.

Problem Diagnosis

Many restaurants across America use little to no automation and rely on pen and paper methods. Examples include:

· Host has to rely on a dry-erase diagram of the tables and can only see the status of the tables based on whether they or someone else physically updates the diagram.

· After customers have been seated, a waiter/waitress will attend to the table, writing down their beverage and food order, and subsequently bringing the order to the kitchen for preparation. It's crucial to emphasize that the waiter/waitress should always have a pen and notepad on hand to record orders. Additionally, they should ensure that each bill is well-organized and matches the corresponding table accurately.

· The waiter/waitress must periodically check on the table's order, having to constantly ask the kitchen about the progress of the meal.

· After the meal is ready, the kitchen staff must let the waiter/waitress know and the piece of paper is saved for record keeping by management.

While this traditional system works, it has become antiquated. The primary concern with this approach lies in the management of records, as the responsibility for storing and arranging all information falls on the management, a task that is far from easy. Daily tabs are collected, demanding data organization and staff compensation. This demands a significant amount of time and focus from managers.

Proposed Solution

This project aims to computerize restaurant operations so that all information pertaining to table orders and staff activity is shared and stored digitally. With a simple click, hosts will be able to view the status of tables, while waiters/waitresses can efficiently record customer orders and transmit them electronically to the kitchen for preparation. Kitchen staff will be able to view incoming orders and can inform servers when the food is ready. Cleaning personnel will also have the ability to check table statuses, enabling them to spot clean, occupied, and dirty tables. Most importantly, all restaurant information is systematically organized and archived in a database accessible to management. This system also streamlines data handling and allows management to concentrate on data analysis instead of manually calculating it.

Functional

- Touch screen ordering system.
- Floor status visualization.
- Role-based access and task management.
- Customer device ordering through QR codes.
- Real-time coordination of food preparation and delivery.

Non-Functional

- Replace pen-and-paper methods with touch screen terminals.
- Provide a floor status screen for waiters to efficiently manage tables.

- Support roles such as Host, Waiter, Cook, Busboy, and Manager.
- Coordinate food ordering, cooking, and delivery seamlessly.

On-screen (UI or UX) requirements/specifications

- A clean design with easily recognizable icons and buttons
- Show the totals and allow modification before finalizing the order, just in case the customer needs a discount or a financial accommodation of some sort.
- Include a feedback form for suggestions or complaints.
- Provide an overview of order statuses (pending, cooking, ready).
- Track which tables have paid and which have not.

Plan of Work

Tools

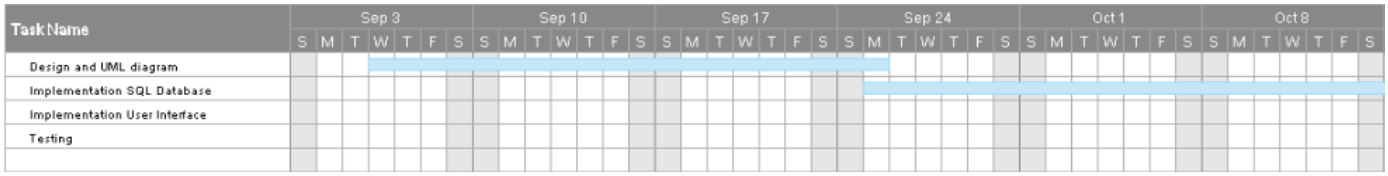
- Java, JavaScript, PHP, SQL, HTML, CSS

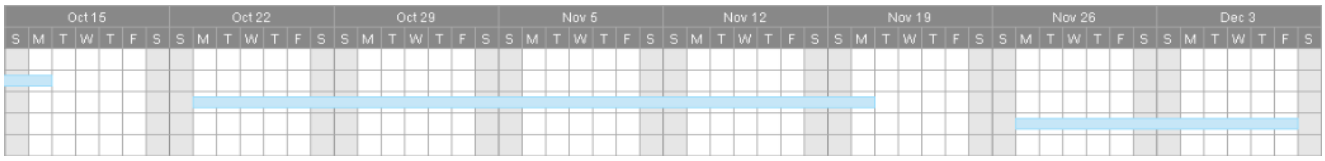
Success

Efficiency is key in the proposed system. We'll measure its success by comparing order processing times and accuracy before and after its introduction. Feedback from both staff and customers will be vital. Staff, including waiters and managers, will share their experiences with the system, while customer feedback will focus on the QR code ordering and overall dining experience.

Financial success will be gauged by the Return on Investment (ROI), comparing project costs to financial gains from increased efficiency and sales. We'll also monitor sales growth, system performance in terms of uptime and speed, especially during busy hours. Adoption rates, both by staff and customers using the QR code, will be tracked. The system's ability to handle more customers and add new features is crucial. Finally, the success of staff training and the quality of technical support will be assessed, aiming for fewer user errors and efficient problem resolution.

Scheduled Work Plan





References (if any)

https://www.ece.rutgers.edu/~marsic/books/SE/projects/Restaurant/RestaurantAutomation.pdf