CS307 - Team A

Point of Sale System

Topics

- Introduction
 - Purpose
 - Domain
- Constraints
 - Scalability
 - Cost
 - Computation Complexity

Topics Continued

- Solutions
 - Solutions to Scalability
 - Solutions to Cost
 - Solutions to Computation Complexity
- System Overview
 - Special Features
- Summary
 - Meeting Stakeholders' Needs

Purpose

- Design a Point of Sale(POS) delivery system for a fast food restaurant:
- Necessary Abilities:
 - Take/place orders from front counter and pickup windows
 - Display orders to kitchen areas
 - Exception handling for special orders
 - Handle Cash and credit/debit card transactions
 - Customer order display in drive-through and at front counter

Purpose Continued

- Necessary Abilities Continued:
 - Inventory tracking and re-ordering
 - Accumulating daily sales results by shift and batching the results to the corporate HQ

Domain

- Fast Food Restaurant
 - Different Locations
 - Register System
 - Kitchen System
 - Back Office System
 - User Types:
 - Managers
 - Employees

Constraints

Scalability

- Multiple Registers
 - Exact Number is Not Statically Defined
- Multiple Kitchen Displays
 - Exact Number is Not Statically Defined
- Single Back-Office Server
 - Import/Export Relevant Data

Cost

- Financial Design, Installation and Maintenance Costs
 - Financial Costs Should be Limited
- Time Based Design, Installation, Operation and Maintenance Costs
 - Installation Should be Relatively Quick
 - Operations Should Execute Near Instantaneously

Cost Continued

- Human Resource Costs
 - Should not require extra employees
 - Should not overly complicate any single employee's job

Computation Complexity

Restaurant Menu is a Tree

Modified Order

Menu Updates

Multiple Nodes on Single Database

Solutions

Solutions to Scalability

- Multiple Registers, Multiple Kitchen Displays and Single Back-Office Server
 - Have a single point of contact
 - MYSQL DB
 - Implement Rules for Notification of DB Changes

Solutions to Cost

- Financial Design, Installation and Maintenance Costs
 - Design built on Java and MYSQL
 - Maintenance Does not Pose any Immediate
 Costs
- Time Based Design, Installation, Operation and Maintenance Costs
 - All Relatively Cheap

Solutions to Cost Continued

- Human Resource Costs
 - Fairly Self Explanatory Design
 - Touch Screen Implementation for all but Back-Office
 - Minimal Human Interaction Required

Solutions to Computational Complexity

- Restaurant Menu is a Tree
 - MenuOffering -> FoodItemOption -> FoodItem -> Ingredient
- Modified Order
 - Adding and Subtracting Ingredients
- Menu Updates
 - CSV Reading and Backup
- Multiple Nodes on Single Database
 - Frugal database controllers

Special Features of the POS

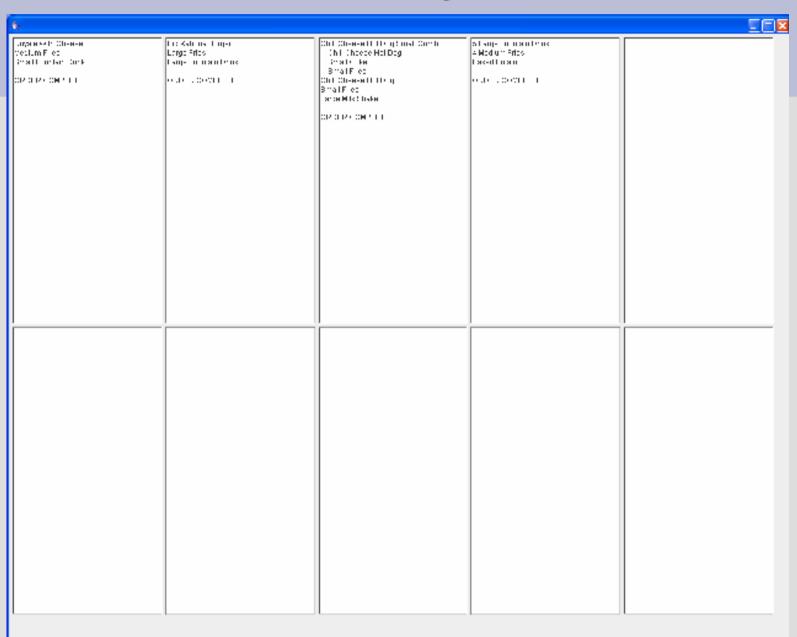
- Dynamic Button System
- Live Feed To Kitchen System
- Daily, Monthly, Yearly Sales Analysis
- Employee Information List

Summary

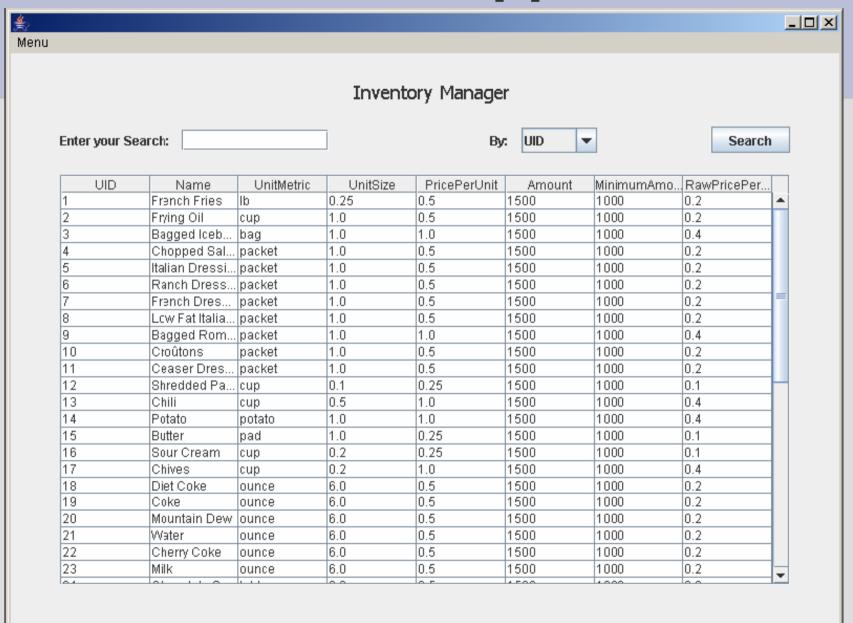
Clients/Users

- Cashiers
- Managers
- Restaurant Owners
- We tried to cater to the fact that this system had to be relatively easy and intuitive to use.
- This would make it cost less and be easier to train new employees which would also cut costs for the owners.
- We believe we have generated a system that is both simple to use while also being a very powerful system

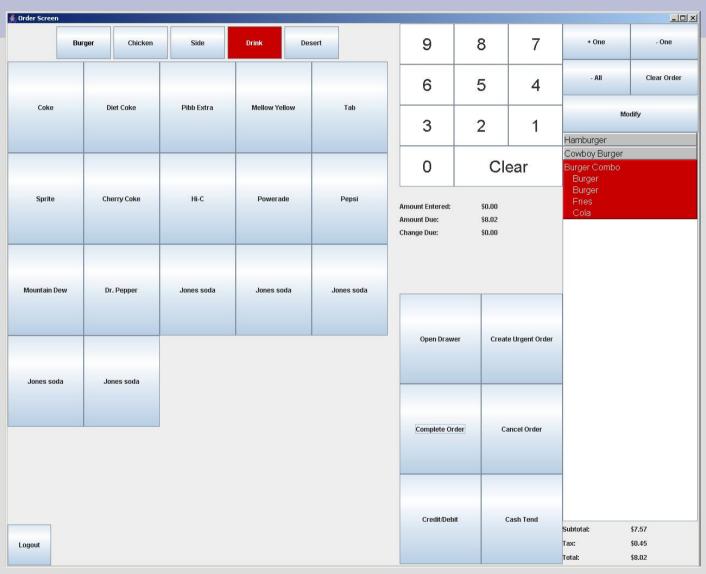
Kitchen System



Back Office Application



Register



CS307 - Team A - Final Presentation