**POS system for a food place**

**Group: 405! found**

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# 1.Motivations and Goals:

The motivations behind developing the Point of Sale (POS) is to address several challenges and enhance the overall efficiency of the Restaurant. The primary goals were shaped by the desire to overcome these challenges and improve various aspects of business operations.

* **Streamlining Order Processing**

Goal: user-friendly interface design for quick order entry, minimizing errors and reducing the time taken to process customer orders.

* **Efficient Employee Management**

Goals: Implement a clock-in/clock-out system to track working hours of the employees, and facilitate efficient management of employee data and salaries.

* **Insightful Sales Reports**

Goals: Develop a reporting system that provides comprehensive insights into sales performance, helping in strategic decision-making and inventory management.

* **Scalability and Adaptability**

Goals: Design the system architecture to be scalable, allowing for easy integration of new features and adaptation to evolving business needs.

* **Ease of Maintenance and Updates**

Goals: Design the system with modular components, making it easy to update and maintain without disrupting daily operations.

# 2.Detailed Description of Design and Implementation:

**1. System Architecture:**

The POS System follows a modular architecture, separating functionalities into distinct components. The key functionalities include:

**Menu Management:** Handles the addition, removal, and modification of menu items.

**Order Processing:** Manages the creation and processing of customer orders, including item selection, quantity, and checkout.

**Employee Management:** Tracks employee clock-in/clock-out, manages employee data, and calculates work hours.

**Sale Reports:** Generates various reports, including sales reports and employee performance metrics.

**2. Data Model:**

The system uses Array Lists to store dynamic data such as menu items, order history, employees, employee codes, and clock-in times. The use of Array Lists allows for flexibility in managing and updating data during runtime.

**3. User Interface:**

The user interface is text-based, utilizing the Scanner class for user input. The menu-driven interface guides users through various functionalities such as creating new orders, viewing order history, clocking in/out, managing employees, menu management, generating sales reports, and exiting the system.

**4. Exception Handling:**

The system incorporates robust exception handling to ensure the smooth execution of functionalities. It prompts users to enter valid inputs and provides clear error messages in case of input discrepancies.

# 3.Use Case Diagrams:

A screen shot of a black and white screen

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# 4. System components and functions: activity diagram, sequence diagram (for some functionality).

**Activity diagram for Order Processing**

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**Activity Diagram for Clock – in**

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**Sequence Diagram for Order Processing**

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# 5.Team Responsibilities:

**Venkata Sandeep Reddy Sabbella**

* Order Processing: Add or remove the items to/from the order, checkout.
* Clock-In: Employees do clock in with their 4-digit code.
* Clock-Out: Employees do clock in with their 4-digit code after they are done with their work.

**Pavan Kumar Reddy Vuyyuru**

* Menu Management: Adding new items to the menu, removing existing items , update the prices of existing items.

**Rithvik Varma Thotakura**

* Employee Management: Add new employee details and assign a 4-digit code for the employees for clocking functionality. Calculate salaries based on numbers or hours and days worked.

**Rajesh Jyoti Samrat**

* Order History: See the past orders that has been completed in from of receipts.
* Sale Reports: Generate sale reports showing the total sales of all the items and displaying the item that is our most selling and the item that is least selling , which will help in improving the items and inventory management.

# 6.Results:

**Employee Management:**

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**Clock-In :**

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**Order Processing:**

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**Clock – Out:**

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**Sale Report:**

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# 7. What did you learn?

* We Learned the Basic Concepts of java Programming.
* How to use array lists
* Learned how to use object-oriented programming.
* Learned and used exception handling to handle errors.
* Team collaboration using GIT.
* Modular approach to the problem.