

Smart Mess System

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ABSTRACT

The main aim of any canteen/mess is to provide clean and fresh food to the students/employees of the organization. In many organizations, entire mess management and billing calculations are done manually till date. It is very time consuming and increases the chances of performing calculation mistakes. It would be possible to do the same work within a short period of time and without using much efforts and manpower if there existed a software for the same. Thus, there arises a need to create a software for the same. Such a software would make the entire Mess related management an automated system. The software is not only restricted to food items and their billing manipulations, but handling the information of the cadets seeking training in the PTC is also possible in the software. Thus, such a combination in a single software is of great benefits.

In Today's world the entire Mess Management and costing calculations are done manually to date. It is very time consuming & increases the chances of performing calculation mistakes. Thus, there arises a need to create software that will make the entire Mess Management an automated system. This website will be used by the students at institute of engineering sciences and technology to maintain a mess. The main aim of this project is that students can pay and view their bills online and choose the days they want to eat at the mess. Similarly, students can choose to mess in or mess out anytime, and also enable the student to view the menu, provide feedback on their attended meals, register the complaint, and update their personal information. This system will be utilized by the administrator as after enrollment they authenticate the student id to use the mess management system. The institute needs to implement a mess management system as it provides a range of benefits by streamlining and automating several features of food service, increasing efficiency and finance management, and enhancing security.

Keywords: - Online services, Rating system, mess services, k-means.

1. INTRODUCTION

A Smart Mess System is a software application designed to manage meal ordering and delivery for institutions such as schools, colleges, and hospitals. The system typically includes features such as menu planning, order management, inventory management, and delivery tracking. Angular, Node.js, and MySQL are three popular

technologies used to build web-based applications, including Smart Mess Systems. Angular is a front-end JavaScript framework that allows developers build dynamic, single-page web applications. It provides features such as data binding, component-based architecture, and dependency injection. Node.js is a back-end JavaScript runtime environment that enables developers to build scalable, high-performance applications using JavaScript. It provides features such as an event-driven architecture, non-blocking I/O, and a rich set of libraries and modules.

MySQL is a popular open-source relational database management system (RDBMS) that is widely used for web-based applications. It provides features such as ACID compliance, scalability, and high availability. When building a Smart Mess System, Angular can be used to create the user interface and handle user interactions, while Node.js can be used to handle the business logic and communicate with the MySQL database. The system can be designed to allow users to view the menu, place orders, and track their delivery status. Overall, building a Smart Mess System using Angular, Node.js, and MySQL can result in a highly scalable and performance application that can handle large volume of orders and users



2. LITERATURE SURVEY

The overall goal of this project was to firstly study and understand the existing mess/canteen management softwares, then identify the limitations and contribute in the same topic with greater benefits. The main advantage of our proposed system over other existing systems is the GUI in Marathi language. This has enabled complete understanding and convenience for the user. Also, complex calculations are done within seconds and bills are generated on the single click of a button. As the name suggests, it is a software for maintaining any mess/canteen but it also enables handling of the information related to the students/employees who are a part of the organization. Another attractive feature in our software which is lacking in the existing softwares is the Backup and Recovery option. All data can be stored as a copy, that is, taking backup is also possible on a single click, plus recovery of lost data in case any failure occurs is also possible on a single click.



Thus, this system with great added features will serve beneficial to the people. In order to analyze the background of current system, material surveys are mainly done, which help in detecting existing system flaws and the problems that can be solved are not problematic. Therefore, the following topics not only describe the background, but also offer problems and flaws to offer solutions and problems and motivate them to work on this project.

3. OVERVIEW OF THE SYSTEM

Architecture will simplify the system in such a way that every user will get benefits of mess system as shown in figure, there Figure show the System architecture of our system. Here, there are two users as Customer the one who takes the services of mess application & Mess owner the person who does their business using our system. User name and password is also provided to the customer for login of mess system. Our system will interact with user's location with the help of GPS if not set then will set manually and provide information of active mess services to their location. The system with detailed information includes gender and food type Veg, non-Veg. When the employee login to the system it having the options includes add recipes, view recipes, message to the owner about the requirement food.

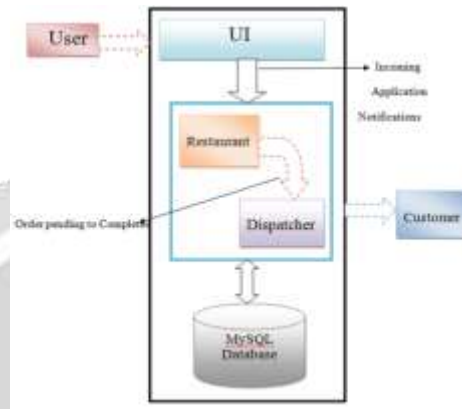


Fig 1 : System Architecture



Fig 2 : Flow Chart

3.1 System Module

Table System Modules

Components	Description
User Information	In these profile management module contains the information regarding to the customer name and also the mess profile including location of customer and its detailed. Mess owner must register

	<p>himself/herself through our application then only they are permitted to make their profile by uploading mess pictures, details, location, menu items with price, etc Users of the system, namely restaurant customers, must be provided the following functionality:</p> <ul style="list-style-type: none"> • Create an account. • Manage their account. • Log in to the system. • Navigate the mess menu
Network Ordering System	<p>Customers of the Web Ordering system will interact with the application through an easy to use top navigation menu.</p> <ul style="list-style-type: none"> • “Home” menu option: allows the users to see all food items offered with nice images as well as select an item to place an order. • My Cart menu option: - Allows users to see details of the items placed in cart. Details include Item #, food Name, food, food Description, Quantity, Unit Price, Total per item and final Total of the order.. User can then use a „Proceed to checkout“ button to proceed further.
Payment Portal	<p>Payment issued to users as a system of payment. It allows the cardholder to pay for goods and services based on the holder' promise to pay for them.</p>
Customer Workflow Process	<p>Initially to visit the food categories or food menu, users don't need to login/register an account. After checking out the categories and menu items, if the user finds his/her desired menu and if they want to order that particular item they can go to order page. During placing any order the customer needs to provide his/her required information mentioned the order section.</p>
Tools & Techniques	<p>Front End: Angular JS HTML CSS Back End:Node.js DB:My sql</p>

▪ Frontend :

➤ Angularjs

AngularJS is a JavaScript-based open-source front-end web application framework that was originally developed by Google in 2010. It is designed to simplify the development of dynamic, single-page web applications by providing a framework for building reusable components, managing application state, and facilitating data binding between the view and the model.

➤ Html

HTML, or HyperText Markup Language, is a markup language used for creating and structuring content on the web. HTML allows you to create web pages and other documents that can be displayed in a web browser. Some common HTML tags include <html>, <head>, <title>, <body>, <h1>-<h6> (for headings), <p> (for paragraphs), <a> (for links), (for images), and <div> (for dividing content into sections). Overall, HTML is a powerful tool for creating websites and sharing information on the internet.

➤ Css

CSS stands for Cascading Style Sheets. It is a stylesheet language used for describing the presentation of a document written in HTML or XML. CSS separates the presentation style from the content of a web page, allowing developers to create consistent and visually appealing designs for websites.

▪ Back End:

➤ Nodejs

Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that allows developers to run JavaScript code outside of a web browser. It uses the V8 JavaScript engine from Google Chrome and is built on top of the Chrome DevTools Protocol.

➤ Mysql

MySQL is a popular open-source relational database management system (RDBMS) that is used to store and manage data. It was first released in 1995 and is now owned by Oracle Corporation. MySQL uses a client-server model where a client application can connect to the server to request data or perform other operations on the database. The server processes these requests and returns the results to the client.

3.2 ALGORITHMS

Input P- the number of clusters Q:a data set containing n objects

Output: A set of P clusters

Steps: 1. Randomly select P data objects from dataset Q as initial cluster centers.

2. Repeat.

3. Calculate the distance between each data object Q_i ($1 \leq i \leq n$) and all P cluster center sc_j ($1 \leq j \leq P$) and assign data object Q_i to the nearest cluster.

4. For each cluster j ($1 \leq j \leq P$), recalculate the cluster center.

5. Till no change in the clusters center. The computational complexity of the algorithm is $O(nPs)$

n: the total number of objects

P: the number of clusters

s: the number of iterations

3.3 ADVANTAGES

Smart Mess Systems, also known as smart cafeteria systems, are automated systems that use technology to simplify the process of ordering and paying for food in a cafeteria or mess hall. Some advantages of using a Smart Mess System include:

1. Increased Efficiency: Smart Mess Systems eliminate the need for customers to stand in long lines to order and pay for food. This saves time and reduces the workload for cafeteria staff, resulting in a more efficient operation overall.
 2. Reduced Wait Times: With a Smart Mess System, customers can quickly order and pay.
 3. Improved Accuracy: By automating the ordering process, Smart Mess Systems reduce the chances of errors in orders or payments. This leads to higher customer satisfaction and fewer complaints.
 4. Increased Convenience: Smart Mess Systems allow customers to order and pay for their meals from anywhere, at any time. This is especially helpful for people with busy schedules who need to grab a quick meal on-the-go.
 5. Cost Savings: Smart Mess Systems can help reduce the cost of operating a cafeteria by streamlining operations..
- Overall, Smart Mess Systems provide a more efficient, convenient, and cost-effective way of managing a cafeteria or mess hall.

4.Result



A "smart mess system" could refer to various things depending on context, but assuming you mean a system for managing mess or clutter in a space using smart technology, the results could vary depending on the specific system and its implementation.

Here are some potential benefits and outcomes that could result from a smart mess system:

- Improved organization: A smart mess system could help users keep track of their belongings and ensure that everything has a designated place, reducing clutter and making it easier to find what they need.
- Time-saving: By automating certain tasks like sorting and organizing items, a smart mess system could save users time and effort.
- Reduced stress: A cluttered environment can be stressful for many people, and a smart mess system could help alleviate this by creating a more organized and relaxing space.

- Increased efficiency: By optimizing storage and reducing waste, a smart mess system could help increase efficiency in various settings, such as offices, warehouses, or homes.
- Cost savings: A smart mess system could help users save money by reducing the need to purchase unnecessary items or replacing lost items.

Overall, the results of a smart mess system could be highly beneficial for individuals or organizations looking to improve their productivity, reduce stress, and optimize their space.

5. CONCLUSIONS

The conclusion of a smart mess system would be that it is a highly efficient and effective solution for managing mess halls in various settings, such as military bases, schools, universities, and corporate campuses. The system utilizes advanced technologies such as IoT, sensors, and artificial intelligence to automate various aspects of the mess hall operation, including food ordering, inventory management, meal preparation, and payment processing. Smart mess systems have several benefits, including reducing food waste, improving the dining experience for customers, reducing wait times, and increasing operational efficiency. These systems also provide valuable data insights that can help administrators make informed decisions about menu planning, inventory management, and resource allocation.

Overall, smart mess systems are a promising solution for streamlining mess hall operations and improving the overall dining experience for customers. As technology continues to advance, we can expect to see even more sophisticated and innovative smart mess systems in the future.

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