

# CS432 Databases

## Dinewell: Mess Management System

### Team MessQL

Neerja Kasture

*22110165*

`neerja.kasture@iitgn.ac.in`

Anura Mantri

*22110144*

`anura.mantri@iitgn.ac.in`

Sumeet Sawale

*22110234*

`sumeet.sawale@iitgn.ac.in`

Yash Patkar

*22110296*

`yash.patkar@iitgn.ac.in`

February 21, 2025

## 1 Introduction

The Dinewell Mess Management System is designed to streamline meal planning, inventory management, and payment processing in mess facilities. This system enables easy meal planning with real-time updates, maintains inventory records, processes payments both from and to the mess, and generates analytics for the profit/loss of the mess. The goal is to enhance operational efficiency by making meal planning, inventory management, and accounting easier.

## 2 Objective

- To manage meal planning and scheduling for the mess council.
- To track inventory levels in real-time and ensure stock updates through helpful reminders.
- To manage payment processing and maintain transparent billing.
- To generate detailed reports on meals served, inventory usage, and financials.
- To enforce data integrity through strict referential constraints.

### 3 Software Stack

- **Database:** MySQL
- **Backend:** Flask (Python), NodeJS
- **Frontend:** HTML, CSS, JS, React

### 4 Functionalities

#### 4.1 Meal Planning

- Define weekly menu through a helpful frontend accessible to mess council members.
- Allow dynamic and real-time menu updates visible to all mess users.

#### 4.2 Payment Processing

- Generate bills based on meals consumed.
- Process payments via cash, credit, debit, or online methods.
- Keep track of meals consumed via QR scanning.
- Maintain record of payments made by the mess to suppliers.
- Maintain daily detailed transaction history.

#### 4.3 Inventory Management

- Track inventory usage, including date of purchase, expiry date, supplier details, and cost of each item.
- Implement an alert system for low stock or out-of-stock items.

#### 4.4 User Management

- Register mess users with name, email ID, roll number/ employee ID, allotted mess name and payment plan and user role
- Define user roles such as mess user who can view the meal plan, mess council members who can create and update the meal plan as well as mess administration who will use inventory tracking and payment accounting.

## 4.5 Reporting & Analytics

- Generate reports on the number of mess users, total revenue, total expenditure, etc., on a monthly basis.
- Provide insights into the mess account balances, spending trends, food waste and inventory usage for each mess.