# Project overview

Celebrity chef James Oliver, who owns a chain of restaurants called *The Grill House* across various cities in the USA, has initiated the development of a new Restaurant Management System (RMS) to modernize and streamline daily operations.

Currently, the restaurant operations rely heavily on a manual, paper-based system, leading to inefficiencies and data management challenges. Waitstaff take customer orders on paper, and bills are also manually written and presented. At the end of each day, managers enter billing details into an Excel sheet to calculate total sales and analyse item-wise performance. Reports for daily, weekly, and monthly sales trends are also generated manually, making it time-consuming and prone to error.

Additionally, the current system lacks essential features such as role-based access control and dynamic menu management. The client seeks a solution that allows for easy menu updates and supports different user roles—such as managers, waiters, and kitchen staff—with appropriate access permissions for each.

This project aims to address these limitations by implementing a comprehensive, user-friendly, and scalable digital Restaurant Management System to support efficient day-to-day operations and strategic decision-making.

# Business analysis core concept model(Baccm)

|  |  |
| --- | --- |
| **Need** | Solve inefficiencies in menu, billing, reservations, and reporting |
| **Change** | Transition to an automated and integrated restaurant management system |
| **Solution** | Implement a secure, scalable, feature-rich restaurant management system |
| **Stakeholders** | Address the goals of managers, waiters, owner, customers and support team |
| **Context** | Support a multi-city, multi-location restaurant chain with scalability and adaptability |
| **Value** | Achieve efficiency, insight, customer satisfaction and business growth |

# Stakeholder List

|  |  |
| --- | --- |
| **Roles** | **Responsibilities** |
| **Internal** | |
| James Oliver (CEO) | Review reports, strategic decision-making |
| Managers | Create/edit menu, reserve tables, generate reports, enter feedback forms |
| Waiters | Generate bills, check menu, view reservations |
| Development Team | Build and maintain the application |
| **Business Analyst-** Mediate internal and external stakeholders to ensure proper collaboration and fulfillment of stakeholders needs | |
| **External** | |
| Customers | Use restaurant services, provide feedback and make payments |
| Payment Gateway Provider | Enable digital card payment functionality in the system |
| Regulator | Ensure all compliance metrics and privacy related measures are taken |

## Onion diagram

Figure 1: Stakeholder Onion Diagram

**Business Analyst**

**Managers**

**Waiters**

**Development Team**

**CEO**

**Customers**

**Payment Gateway Providers**

**Regulator**

## Raci matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Roles** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| James Oliver (CEO) |  |  | C | I |
| Managers | R |  |  | I |
| Waiters |  |  |  | I |
| Development Team | R |  |  |  |
| Business Analyst | R | A |  |  |
| Customer |  |  |  | I |
| Payment Gateway Provider |  |  |  | I |
| Regulator |  |  | C | I |

# Current As-Is state

The Grill House paper-based system-

A diagram of a customer order

Description automatically generated

Figure 2: Current As-Is map

# Future State

The Grill House Restaurant Management System

A diagram of a flowchart

Description automatically generated

Figure 3: Future State map

# Scope of the REstaurant management system

A diagram of a restaurant management system

Description automatically generated

Figure 4: Scope of RMS using Context Diagram

# Main features that need to be developed

1. Menu management
   * Menu management (CRUD) is restricted to managers
   * Categorisation of menu items into section like starters, soup, main course, dessert and drinks
   * Storage of menu items along with their respective price
2. Search functionality
   * Allow waiters and managers to search for items in the menu
3. Table reservation
   * Table reservation features restricted to managers only
   * Integration of table layout in the system
   * Preventing waiters from seating customers at reserved tables
4. Billing system
   * Generation of bill by waiters for each table tagged with their ID and table number
   * Acceptance of card and cash payments
   * Integration of digital payment gateway
5. Reporting
   * Total sales of the day by dine-in and home delivery customers separately
   * Total consolidated sales of the day
   * Top 10 most sold dishes of the day
   * Total sales by period day/week/month (by inputting the dates)
   * List of dishes not sold in the current month
   * Total sales across all cities and each city
6. User authentication and access control
   * Login functionality for waiters, managers and CEO
   * Change password feature
   * Accessibility restriction based on user
7. Feedback form
   * Manual addition of feedback details by managers into the system

# Out of scope items

* Mobile app for customers
* Real-time ordering from customers directly
* Loyalty/rewards program
* Automated feedback collected
* Integration with third-party delivery platforms

# Business Requiements

## Functional requrements

* Managers can add/delete/update menu items and reserve tables
* Waiters can generate bills tagged to their ID and table number
* System can generate reports for top dishes, total sales, unsold items and city-wise sales
* Payment gateway supports cash and card transactions
* System must support login/logout with role-based permissions
* Feedback form details can be stored in the system
* System must allow search within the menu

## non-fucntional requirements

* System should support concurrent users(scalability)
* System should ensure data security and encrypted storage
* User interface should be user-friendly and accessible
* System should be available 99.9% of the time
* Menu must load within 2 seconds
* Reports must be generated within 5 seconds for 10k+ records

# Wireframing

A screenshot of a menu

Description automatically generated

Figure 5: Menu

A screenshot of a computer

Description automatically generated

Figure 6: Table Reservation

# Product backlog-user stories and acceptance criteria

|  |  |  |
| --- | --- | --- |
|  | **User Story** | **Acceptance Criteria** |
| 1 | As a manager, I want to add, edit, and delete menu items so that I can keep the menu updated for customers. | * A form is available to input item name, category, and price * Items can be edited and deleted * Only managers have access to modify the menu |
| 2 | As a waiter, I want to view and search menu items so that I can inform customers and generate accurate bills. | * Waiters can access menu without edit permissions * Search bar filters items by name or category |
| 3 | As a manager, I want to reserve tables so that I can manage seating efficiently. | * Managers can mark tables as reserved with date/time * Reserved tables are shown as unavailable to waiters |
| 4 | As a waiter, I want to see which tables are reserved so that I can avoid seating customers there. | * Waiters see a clear visual status of each table (e.g., Reserved, Available) * Reserved tables cannot be selected |
| 5 | As a waiter, I want to generate bills table-wise so that I can provide printed receipts for each order. | * Bills include table number, waiter ID, itemized list, total * Bills are saved in the system for reporting |
| 6 | As a manager, I want to generate daily, weekly, and monthly sales reports so that I can monitor business performance. | * Reports are generated by selecting date range * Include dine-in, delivery, top 10 dishes, city-wise sales |
| 7 | As a manager, I want to view a list of dishes not sold in a month so that I can consider removing unpopular items. | * System lists unsold items by selected date range * Can filter by category |
| 8 | As a customer, I want to pay by cash or card so that I can choose my preferred payment method. | * Bill can be closed with cash or card selection * Card payments are processed through a secure gateway |
| 9 | As a manager, I want to input customer feedback manually so that I can store customer preferences and improve service. | * A form allows entering customer name, DOB, anniversary, contact info, and feedback * Data is saved for CRM use |
| 10 | As the CEO, I want to access high-level reports across all cities so that I can monitor overall business performance. | * Dashboard shows city-wise and consolidated sales * Filters for time period and customer type |
| 11 | As a user (waiter, manager, CEO), I want to log in with my role so that I can access only the features I’m authorized for. | * Login screen authenticates by role * Each role sees only their permitted features |
| 12 | As a user, I want to change my password so that I can keep my account secure. | * Change password option available post-login * Password must meet security criteria |