

Business Analysis Capstone Project Submission: Restaurant Management System

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RESTAURANT MANAGEMENT SYSTEM

Project Overview

Celebrity chef, James Oliver has his chain of restaurants, *The Grill House*, across different cities in the USA. He wants to install a new Restaurant Management System (RMS) to track the day-to-day management of his restaurant.

Currently, they are operating under a paper-based system which has many issues. The orders are taken by the waiters on paper and a paper-based bill is presented to the customers.

All the bills are entered into an Excel sheet by the manager at EOD to know the total sales and item-wise sales for the day. Then reports were generated in Excel to know trends and details like daily, weekly, and monthly sales. Which dishes were popular, and which weren't doing so well?

Restaurants need a system that will allow them to easily update their menu. The clients currently do not have a system that recognizes the different types of users such as managers, waiters, etc. and they would like to be able to limit the access of some options of the system to certain users.

CONTEXT

Currently, the Grill House restaurant uses a paper-based system for managing its operations. Orders are taken by waiters who record them on paper.

Customers are presented with bills on paper. The restaurant manager manually enters all bills into a spreadsheet at the end of each day to determine sales and items sold. Reports are produced to ascertain patterns in the popularity of the dishes as well as daily, weekly, and monthly sales.

NEED/PROBLEM STATEMENT

A more effective and contemporary restaurant management system is required by The Grill House so that employees can simply update the menu, compute sales and trends to generate reports, handle reservations, and restrict user access.

SOLUTION

Provide a restaurant management system that runs on software and can be used for creating menus, creating bills, booking tables, processing payments, and reporting.

CHANGE

By upgrading to a software-based restaurant management system, The Grill House will be able to handle bookings and seating, enter orders, ring up bills, run reports, and manage user access. The Grill House was previously operating on a paper-based billing system.

VALUE AND ADVANTAGES

For the business, adding a software-based management system will generate a value stream. The new system will not only update the outdated paper-based method but also improve workflow throughout the restaurant. The restaurant will be able to maintain customer connections, identify popular food products and trends, turn over tables more quickly and efficiently, and calculate restaurant revenues and margins with increased operational efficiency.

STAKEHOLDERS

Supplier - Payment system host, Data Storage Facility

Sponsor - James Oliver

Customer - Restaurant patrons

End User - The Grill House management and staff.

Regulator - Credit card companies

Business Analyst

Domain Subject Matter Expert - Restaurant Software Consultant

Tester - QA Analyst

Operational Support - Operations Analyst

Implementation SME - Java Engineer

Project Manager

TABLE 1. Stakeholder Roles and Responsibilities

Describes roles and responsibilities of those who interact with the Canteen Ordering system.

STAKEHOLDER LIST	
Roles	Responsibilities
EXTERNAL	
Suppliers: Payment system host	The restaurant management system's designated payment system host will make it easier for customers to make cash and credit card purchases.
Data Storage facility	Data from the restaurant management system will be stored by a data storage facility under contract with James Oliver and the executive team.
Sponsor: James Oliver / Corporate Office	James Oliver authorized The Grill House restaurant management system based on business needs; He has set the project budget and business objectives.
Customer: Restaurant patrons	Customers of the restaurant will gain indirect advantages from the restaurant management system since they will be able to submit surveys into the system and obtain computer-generated bills.
End User: The Grill House management and staff	Each member of the restaurant crew and management will have their own login to access the system at different user levels. The management group intends to utilize the system for table reservations, menu creation and editing, report generation, and survey data entry from customers. The system will be used by the restaurant employees to process payments, check reservations for tables, and create invoices.
Regulator - Credit cards and banks	When using the restaurant management system, The Grill House and its customers must abide by credit and banking requirements.

INTERNAL	
Business Analyst	Including planning and monitoring, elicitation and collaboration, requirements life cycle management, strategy analysis, requirements analysis and design, and solution evaluation, I will supervise and carry out business analysis tasks.
Domain Subject Matter Expert - Restaurant Software Consultant	James Oliver plans to appoint a group of people with prior expertise to supervise the development of features and applications for restaurant management systems. Most business analysis tasks, such as strategy analysis, requirements analysis and design, planning and monitoring, elicitation and collaboration, and solution evaluation, will involve them.
Tester: QA Analyst	A QA analyst confirms that the solutions adhere to the specifications and quality benchmarks. They'll check the answers. They'll try to pinpoint dangers and cut down on system malfunctions.
Operational: Operations Analyst	The operations analyst will supervise system maintenance as needed and make sure the restaurant management systems function properly every day at all locations.
Implementation Subject Matter Expert	Java engineers will implement the restaurant management system in compliance with the business and solution specifications provided by stakeholders involved in the business analysis. They will share their knowledge to create a software solution that is effective, affordable, and user-friendly.
Project Manager	By managing scope, budget, time, resources, quality, and risks, a project manager guarantees that business objectives are reached.

TABLE 2. RACI Matrix - Responsible, Accountable, Consulted, Informed

Task	BA	DSME	Tester	Ops	ISME	PM
Requirements Gathering and Analysis	R	C	C	I	C	A
Software Design and Prototype	C/I	R/C	C	I/C	R	A
Coding/ Development	I	I	C	I	R	A
Review and Testing	R/C	C	R	C	C	A
Production Implementation	A	I	R	R	R	A
Maintenance	C	C	I	R	C	A

Requirements Classification Schema

BUSINESS REQUIREMENTS

1. The Restaurant Management System shall generate daily reports on restaurant performance.
2. James Oliver would like a feedback form (paper) to be given to every customer.
3. The restaurant management system shall have levels of user access.

STAKEHOLDER REQUIREMENTS

1. The menu should be categorized into the following sections:
 - Starters

- Soups
 - Main Course
 - Desserts
 - Drinks
2. Every menu item shall be categorized into any one of the five menu headers noted above.
 3. Each item shall be saved in the system along with its price.
 4. This menu shall be created and edited by the managers only.
 5. Every waiter and manager shall have access to the software.
 6. Waiters shall use this system for generating the bill table-wise.
 7. Every bill shall be tagged to the waiter generating it and the table number.
 8. Waiters cannot edit the menu. Waiters shall use the system only to generate bills.
 9. Managers shall only have access to the table reservation system.
 10. The waiters shall not seat anyone at reserved tables.
 11. The waiters shall be able to look into the software to determine which tables are reserved.
 12. Management shall be able to configure and generate system reports.
 13. Restaurant staff, managers, and James Oliver shall have login access to the system.
 14. James Oliver would like a feedback form (paper) to be given to every customer. This form shall capture details like name, address, mobile number, email, date of birth, anniversary dates of the customers, and their feedback. These details shall be added by the manager manually into the system.

SOLUTION REQUIREMENTS

Functional:

1. The system shall be able to create a menu and menu sections.
2. Users shall be able to add new items, delete existing items, as well as create new menus from scratch.
3. The system shall create and assign user roles.
4. Managers shall only have user access to creating and editing menus.
5. The system will have a search facility that shall allow waiters and managers to have user access to search items in the menu.
6. Waiters shall have user access to generate table bills.
7. The system shall tag bills and table numbers to the assigned waiter.
8. The system shall have a feature to reserve tables with access reserved for restaurant managers only.
9. The system shall provide an interface displaying the restaurant table layout and reservation status of each table.
10. The system shall be configured to generate the following reports:
 - a. Total sales of the day by dine-in customers.
 - b. Total sales of the day by home delivery customers

- c. Total sales of the day (home delivery and dine-in customers consolidated)
 - d. Name the top 10 most sold dishes for the day
 - e. Total sales every weekend (to be done by inputting the dates)
 - f. Total sales every month (to be done by inputting the dates)
 - g. List of dishes not sold in the current month (this is to phase out dishes that customers are not ordering)
 - h. Total sales across all cities
 - i. Total sales for each city
- 11. The system shall create a unique login for each user.
 - 12. The system shall offer a change password function.
 - 13. The system shall have a payment gateway that can process cash and credit cards.
 - 14. The system shall be able to generate a bill per table and split bills.
 - 15. Managers shall be able to enter data into the system manually, like customer feedback and demographics and run reports on such information.

Nonfunctional:

- 1. The system shall be created and maintained in Java. We chose Java because it will not change much over time, and if we do it well, there will be very little maintenance to be done on the code.
- 2. The reservation system interface shall be user-friendly and have a simplistic design.
- 3. The reporting system interface shall be robust and intuitive.
- 4. Security: The RMS development team should extend end-to-end encryption
- 5. features, protecting user and customer personal and financial details.
- 6. Compliance: The RMS Payment system shall comply with banking and financial regulations.
- 7. Availability: The RMS should be available for use 100% of the time during high-peak usage periods.

TRANSITION REQUIREMENTS

- 1. Restaurant staff and management shall be trained on how to access and use the new Restaurant Management system.

DIAGRAM. 1 Current State Flowchart

The Grill House Current State:

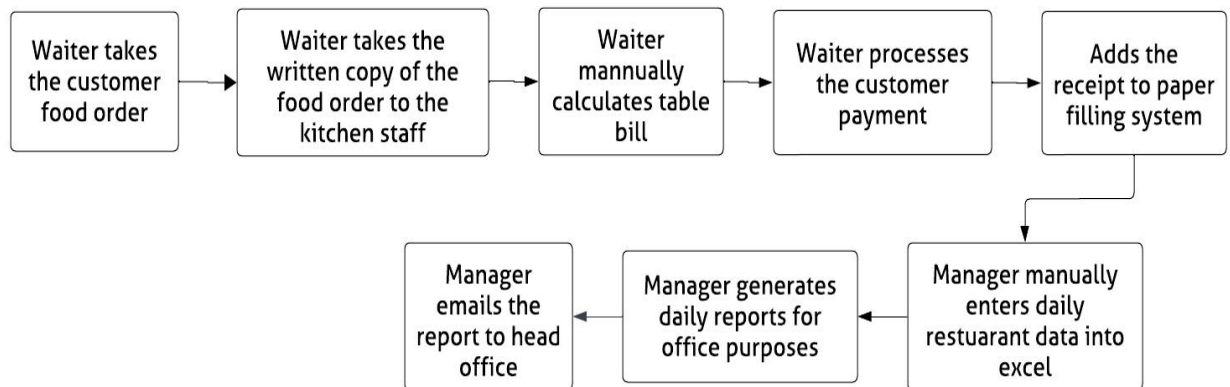
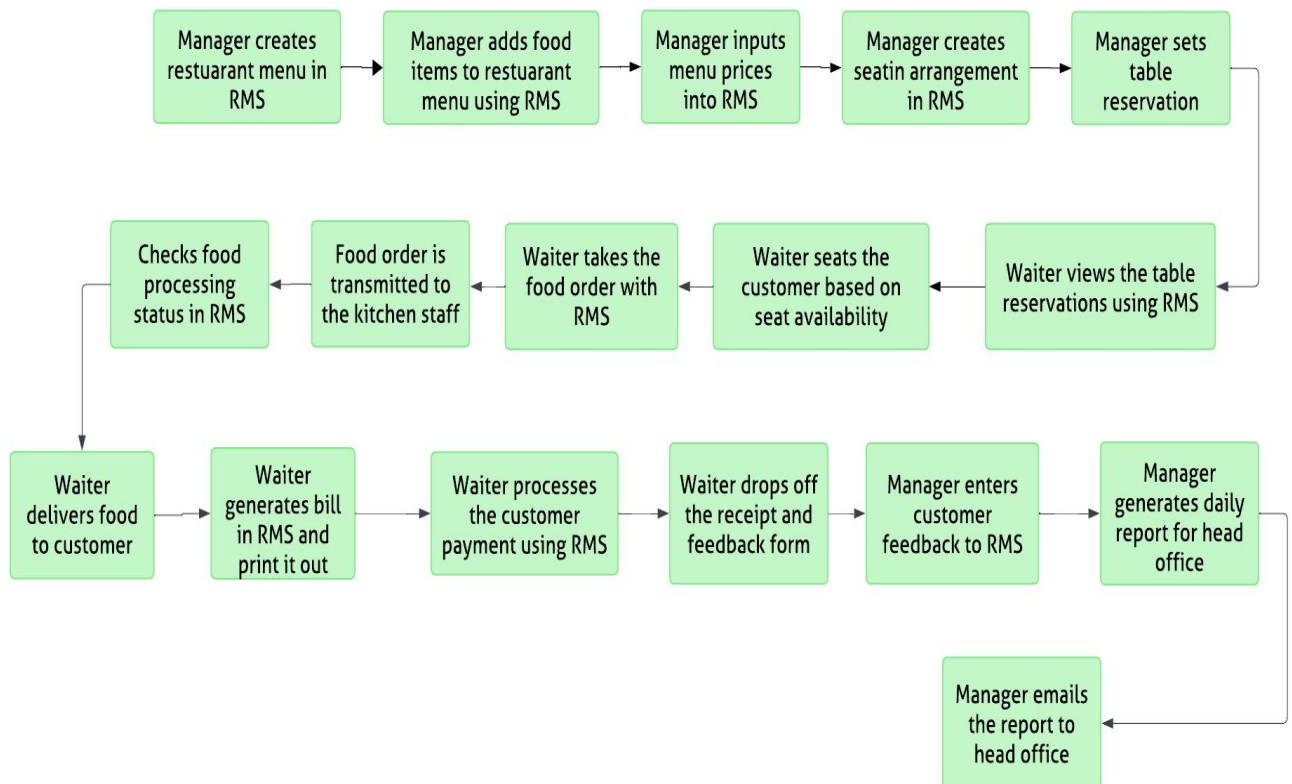


DIAGRAM. 2 Future State Activity Diagram / Flowchart

THE Grill House – Future State



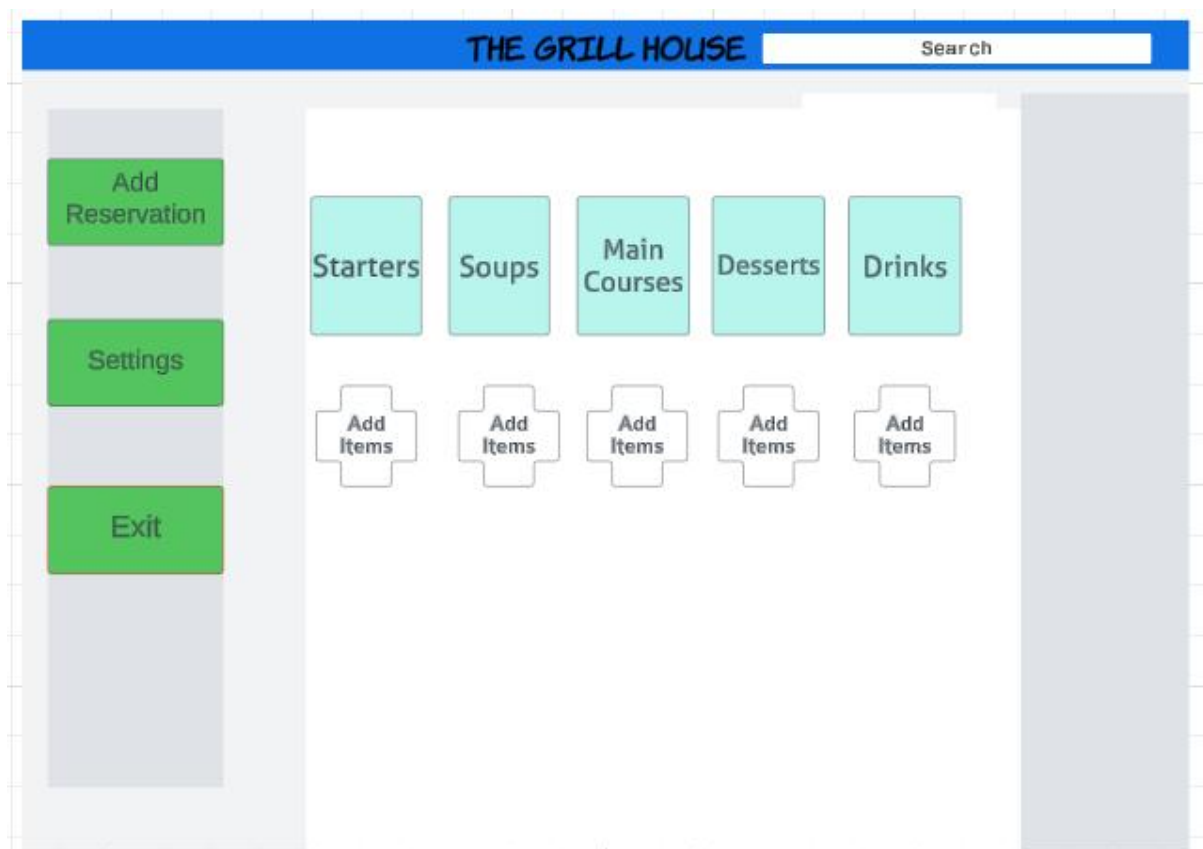
Restaurant Management System Scope: Main Features to be developed:

- Menu creation feature
- Menu editing and deleting functionality
- Menu item creation feature
- Menu item editing and deleting functionality
- Menu pricing functionality
- Menu search option
- User Roles with levels of permissions
- Login ID creation
- Change the password feature
- Table reservation functionality
- Table seating interface
- Reporting tool within software that generates reports and exports into various file formats.

TABLE 3. In Scope vs. Out of Scope

IN SCOPE	OUT OF SCOPE
<ul style="list-style-type: none">• Menu• Menu items/categories• Menu pricing• User roles• Login IDs• Bill generation• Table reservation feature• Table seating interface• Report generation• Search feature• Change password feature	<ul style="list-style-type: none">• Paper feedback survey• Credit card companies• Payment company facilitating money transfer• Data storage

Model - Interface



PRODUCT BACKLOG

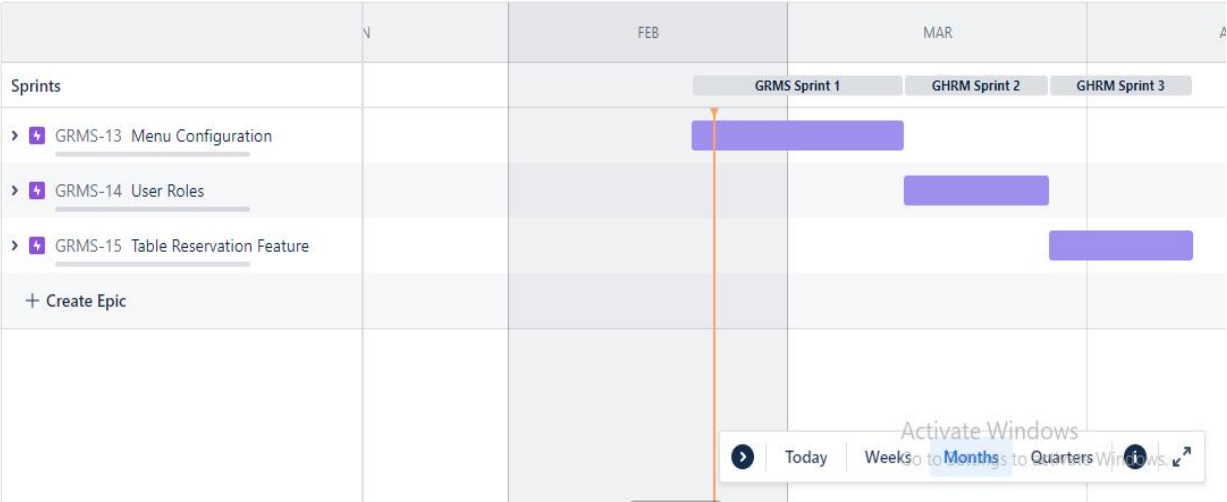
Projects / Grill House Restaurant Management System

Timeline

Give feedback Share Export

Status category

Epic



Backlog



Epic ▾



▼ GRMS Sprint 1 20 Feb – 12 Mar (5 issues)

11 Start sprint ...

GRMS-1 Menu Creation	MENU CONFIGURATION	TO DO ▾	3	
GRMS-2 Menu edit,delete and update function	MENU CONFIGURATION	TO DO ▾	1	
GRMS-3 Menu-item adding,editing and deleting function	MENU CONFIGURATION	TO DO ▾	3	
GRMS-4 Menu pricing function	MENU CONFIGURATION	TO DO ▾	3	
GRMS-5 Menu search feature	MENU CONFIGURATION	TO DO ▾	1	

+ Create issue



5 issues | Estimate: 11

▼ GHRM Sprint 2 13 Mar – 27 Mar (3 issues)

0 Start sprint ...

GRMS-6 User role creation feature	USER ROLES	TO DO ▾	-	
GRMS-7 User role permission feature	USER ROLES	TO DO ▾	-	
GRMS-8 Change Password feature	USER ROLES	TO DO ▾	-	

Activate Windows
Go to Settings to activate Windows.



3 issues | Estimate: 0

▼ GHRM Sprint 3 28 Mar – 11 Apr (4 issues)

0 Start sprint ...

GRMS-9 Table reservation functionality	TABLE RESERVATION FE...	TO DO ▾	-	
GRMS-10 Interface to view table reservations	TABLE RESERVATION FE...	TO DO ▾	-	
GRMS-11 Feature to customize and generate restaurant reports	TABLE RESERVATION FE...	TO DO ▾	-	
<input type="checkbox"/> GRMS-12 Feature to manually enter data	TABLE RESERVATION FE...	TO DO ▾	-	...

+ Create issue

Menu Creation

Attach Add a child issue Link issue ...

Description

As a restaurant manager, I want a feature within the restaurant management system (RMS) to create a new menu

Acceptance Criteria:

1. Managers should have access to RMS.
2. Managers should be the only users who have access to menu creation in RMS.
3. Managers should be able to create up to 30 unique menus and view them.
4. The RMS should be able to save up to 30 unique menus.
5. A save button will allow the user to save the menu.

Activity

SS Add a comment...

Pro tip: press **M** to comment

To Do Actions

Pinned fields
Click on the ✨ next to a field label to start pinning.

Details

Assignee SS Sphuran Spooky
Labels None
Parent NEW GRMS-13 Menu Config...
Sprint GRMS Sprint 1
Story point estimate 3
Releases Activate Windows
Go to Settings to activate Windows.
Reporter SS Sphuran Spooky

Menu edit,delete and update function

Attach Add a child issue Link issue ...

Description

As a restaurant manager, I want a feature that allows me to edit and delete menus in the restaurant management system(RMS) so that I can iterate on the menu at any time. The delete feature will prompt the restaurant manager to confirm whether they want to delete the menu or not to ensure the selection is intended.

Acceptance criteria:

1. Managers should have access to the RMS.
2. Managers should be the only users who have access to edit or delete menu buttons in RMS.
3. The delete feature will prompt the restaurant.

Activity

Show All Comments History Newest first 17

SS Add a comment...

Pro tip: press **M** to comment

To Do Actions

Pinned fields
Click on the ✨ next to a field label to start pinning.

Details

Assignee SS Sphuran Spooky
Labels None
Parent NEW GRMS-13 Menu Config...
Sprint GRMS Sprint 1
Story point estimate 1
Releases Activate Windows
Go to Settings to activate Windows.
Reporter SS Sphuran Spooky

Menu-item adding,editing and deleting function

📎 Attach 🧩 Add a child issue 🔗 Link issue ▼ ...

Description

As a restaurant manager, I want the functionality in the RMS to create, edit, and delete menu items and categories so that the menu is organized and can be adjusted at any time.

1. Managers should have access to RMS.
2. Managers should be the only users that have access to create, edit, or delete menu items in RMS.
3. The menu item delete field will prompt the restaurant manager to confirm they want to delete the menu item

Activity

Show: All Comments History

Newest first ↕



Add a comment...

Menu pricing function

📎 Attach 🧩 Add a child issue 🔗 Link issue ▼ ...

Add attachment

Description

As a restaurant manager, I want a feature in the RMS to add and edit the pricing of each menu item in the menu so that users can accurately tabulate customer restaurant bills and allow for fluctuation in product pricing

Acceptance Criteria:

1. Managers should have access to RMS.
2. Managers should be the only users who have access to add and edit the pricing of the menu in RMS.
3. A save button will allow the user to save the pricing changes in the menu.

Activity

Show: All Comments History

Newest first ↕

To Do ▼

⚡ Actions ▼

Pinned fields



Click on the 📌 next to a field label to start pinning.

Details



Assignee Sphuran Spooky

Labels None

Parent **NEW** GRMS-13 Menu Config...

Sprint GRMS Sprint 1

Story point estimate 3

To Do ▼

⚡ Actions ▼

Pinned fields



Click on the 📌 next to a field label to start pinning.

Details



Assignee Sphuran Spooky

Labels None

Parent **NEW** GRMS-13 Menu Config...

Sprint GRMS Sprint 1

Story point estimate 3

Menu search feature

[Attach](#) [Add a child issue](#) [Link issue](#) [v](#) [...](#)

Description

As a restaurant manager or staff member, I want a search feature in the RMS that allows me to search for the availability of menu items so I can easily view available options and add them to a customer's tab.

Acceptance Criteria:

1. Managers and staff members should have access to RMS.
2. Managers and staff members should have access to the RMS menu item search function.
3. The search feature will have an autocomplete option in the field.

Activity

To Do [v](#) [⚡](#) Actions [v](#)

Pinned fields [x](#)

Click on the [📌](#) next to a field label to start pinning.

Details [^](#)

Assignee	SS Sphuran Spooky
Labels	None
Parent NEW	GRMS-13 Menu Config...
Sprint	GRMS Sprint 1

User role creation feature

📎 Attach 🧑 Add a child issue 🔗 Link issue ▼ ...

Description

As a restaurant manager, I want a feature in the RMS that will allow me to create login IDs and user roles so that each user can utilize the RMS as an individual only the authenticated part.

Acceptance Criteria:

1. Managers should have access to RMS.
2. Managers should be the only users who have access to creating login IDs and assigning user roles in the RMS.
3. The RMS will have an "Add user" function that allows the restaurant manager to input a new user login id and assign a user role.

To Do ⚡ Actions ▼

Pinned fields

Click on the 📌 next to a field label to start pinning.

Details

Assignee  Sphuran Spooky

Labels None

Parent **NEW**  GRMS-14 User Roles

Sprint GHRM Sprint 2

User role permission feature

📎 Attach 🧑 Add a child issue 🔗 Link issue ▼ ...

Description

As a restaurant manager, I want a feature in the RMS that will allow me to create levels of permission per user role so that limits are placed on the amount of control each user has over the system.

Acceptance Criteria:

1. Managers should have access to RMS.
2. Managers should be the only user that have access to establishing user role permissions.
3. The RMS will provide user permission at varying levels of control over the RMS.
 - a. Manage : Complete access
 - b. Staff member: partial access

To Do ⚡ Actions ▼

Pinned fields

Click on the 📌 next to a field label to start pinning.

Details

Assignee  Sphuran Spooky


Labels None

Parent **NEW**  GRMS-14 User Roles


Sprint GHRM Sprint 2

Story point estimate None

Change Password feature

 Attach

 Add a child issue

 Link issue





Description

As an RMS user, I want a feature that allows me to change or reset my passwords so that if a user is locked out of their account or forgets their password, they can easily access their account with a low level of intervention.

Acceptance Criteria:

1. All RMS users should have access to change or reset their password.
2. If an RMS user forgets their password upon logging in, the user can select a "Reset password" link on the login screen.
3. A password reset link will be sent to their email ID through which they can reset their password.

Activity



 1








To Do ⚡ Actions

Pinned fields

Click on the  next to a field label to start pinning.

Details

Assignee	 Sphuran Spooky
Labels	None
Parent	 GRMS-14 User Roles
Sprint	GHRM Sprint 2
Story point estimate	None

Table reservation functionality

Attach Add a child issue Link issue

Description

As a restaurant manager, I want the functionality to create and edit table reservations within the RMS so that the restaurants can predict the number of guests per day and customers can be seated at their desired time.

Acceptance Criteria:

1. Managers should have access to RMS.
2. The RMS will have a table reservation interface along with a timetable.
3. The interface will have reservation functionality.

Activity

Show: All Comments History

Newest first

Add a comment...

Pro tip: press M to comment

Interface to view table reservations

Attach Add a child issue Link issue

Description

As a RMS user, I want the ability to view table reservations within the restaurant management system interface so that I know where to seat a customer and how many tables are open at a given time.

Acceptance Criteria:

1. All RMS users will have the user permission to view the table reservation interface, including the layout and timetable.
2. When a customer is seated at their table, the restaurant manager will confirm the table as booked.

Activity

Show: All Comments History

Newest first

Add a comment...

Pro tip: press M to comment

To Do Actions

Pinned fields

Click on the next to a field label to start pinning.

Details

Assignee Sphuran Spooky

Labels None

Parent NEW GRMS-15 Table Reserva...

Sprint GHRM Sprint 3

Story point estimate None

Releases Activate Windows
Go to Settings to activate Windows.

Reporter Sphuran Spooky

To Do Actions

Pinned fields

Click on the next to a field label to start pinning.

Details

Assignee Sphuran Spooky

Labels None

Parent NEW GRMS-15 Table Reserva...






Sprint GHRM Sprint 3

Story point estimate None

Releases Activate Windows
Go to Settings to activate Windows.

Reporter Sphuran Spooky

Feature to customize and generate restaurant reports


 Attach  Add a child issue  Link issue  

Description

As a restaurant manager, I want the ability to generate restaurant reports and customize them within the RMS so that I can provide a financial record and status of the restaurants to the head office.

Acceptance Criteria:

1. Only the restaurant manager will have access to the reporting feature in the RMS.
2. The restaurant manager will have the ability to customize financial reports in the RMS based on data points requested from leadership. Available data points will be:
 - a. Total sales of the day
 - b. Total sales through delivery
 - c. Total sales by week.
 - d. Total sales by month




Pro tip: press **M** to comment

To Do ▾

 Actions ▾

Pinned fields



Click on the  next to a field label to start pinning.

Details

Assignee  Sphuran Spooky

Labels None






Parent **NEW**  GRMS-15 Table Reserva...

Sprint GHRM Sprint 3

Story point estimate None

Releases **Activate Windows**
Go to Settings to activate Windows.Reporter  Sphuran Spooky

Feature to manually enter data

 Attach  Add a child issue  Link issue  

Description


As a restaurant manager, I want the ability to manually enter and edit data into RMS so that I can add customer feedback surveys into the system understand trends, and implement necessary changes within the restaurant.

Acceptance Criteria:

1. The RMS reporting feature will offer the option for manual data entry.
2. The manual data entry option is accessible by the restaurant manager only.
3. The manual data entry option can be integrated into the daily financial reporting

Activity

Show: **All** **Comments** HistoryNewest first 




Pro tip: press **M** to comment

To Do ▾

 Actions ▾

Pinned fields



Click on the  next to a field label to start pinning.

Details

Assignee  Sphuran Spooky

Labels None

Parent **NEW**  GRMS-15 Table Reserva...

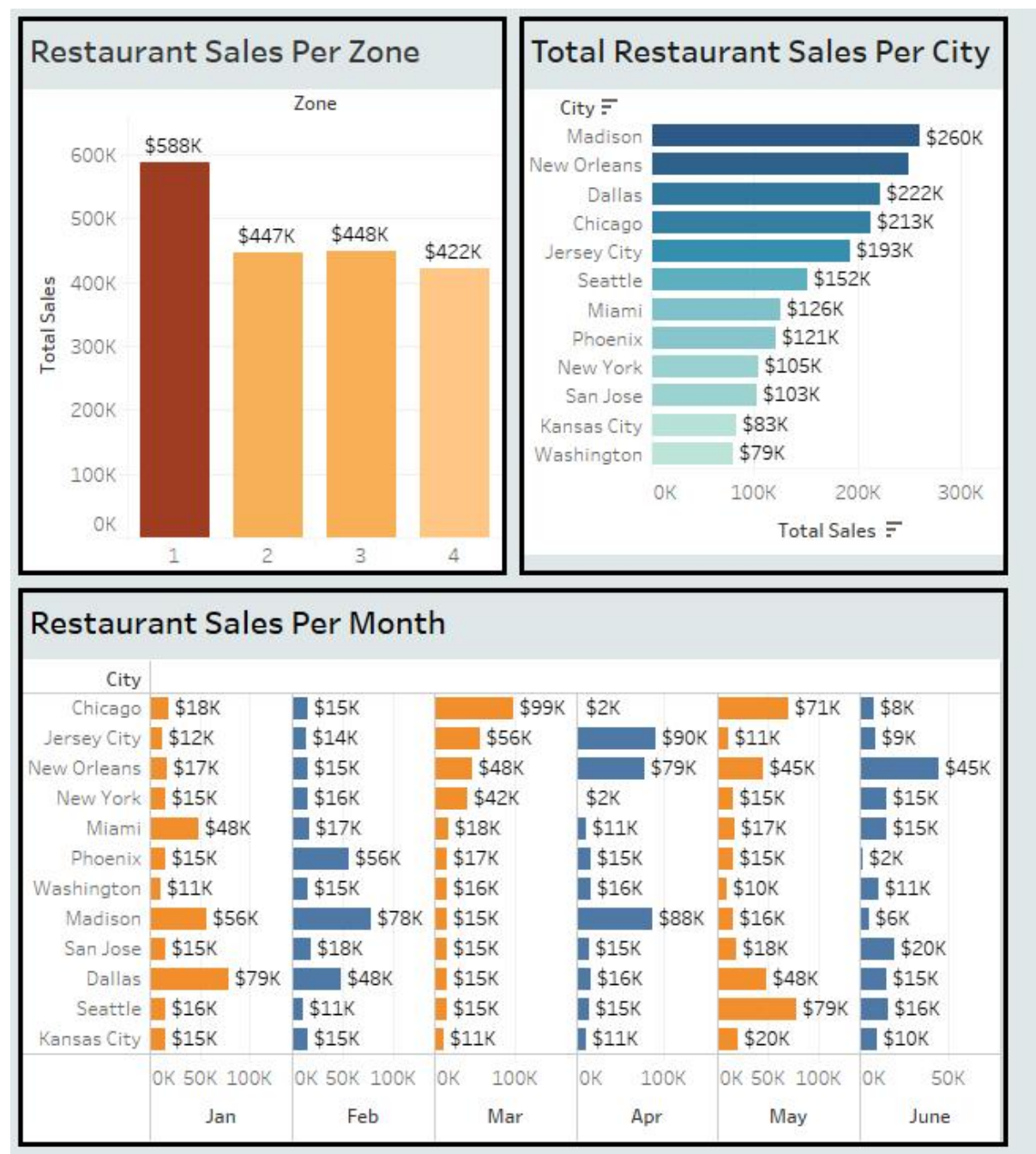
Sprint GHRM Sprint 3

Story point estimate None

Releases **Activate Windows**
Go to Settings to activate Windows.Reporter  Sphuran Spooky

TABLEAU DASHBOARD REPORT

https://public.tableau.com/views/GRMS-Project/Dashboard1?:language=en-US&:sid=&:display_count=n&:origin=viz_share_link



Sales Comparison- Excel

