

Wardroom Victualing Management System

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Wardroom Victualing Management System

**A thesis submitted for the Degree of Master of
Information Technology**

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University of Colombo School of Computing
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Declaration

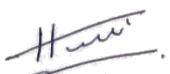
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Preface

I am delighted to present this master's thesis, the culmination of my academic journey in pursuit of a Master of Information Technology degree at University of Colombo. This research represents a significant undertaking that would not have been possible without the support, guidance, and inspiration of numerous individuals and resources.

The genesis of this research project stems from my deep seated interest in Wardroom Victualing Management System for Sri Lanka Navy. As I progressed through my master's program, my fascination with Wardroom Victualing Management System deepened, driving me to delve into the complexities and challenges inherent in this area of study.

I extend my heartfelt gratitude to my thesis advisor, Prof.G.K.A.Dias, for their unwavering support, scholarly insights, and constructive feedback throughout the research process. Their mentorship has been pivotal in shaping the direction and quality of this thesis. I am also grateful to my husband P.W.Ashan and daughter P.W.T.Okithmi for their valuable contributions and encouragement.

Further, I extend my sincere thanks to my friends and Director Naval Information Technology Department (DNIT) of the Sri Lanka Navy (SLN) staff for their enduring support and understanding during the demanding process of completing a master's thesis. Their encouragement and patience have been indispensable.

Undertaking this research presented various challenges, from methodological intricacies to unexpected obstacles. Each challenge, however, served as a learning opportunity, fostering resilience and refining my research skills. The reflections shared in this thesis encapsulate not only the triumphs but also the growth that accompanied the challenges encountered.

I invite readers to engage with this thesis as a scholarly exploration, recognizing its limitations and considering the potential avenues for future research in Information Technology field. May this work serve as a catalyst for continued inquiry and contribute to the ongoing dialogue within the academic community.

Abstract

The Sri Lanka Navy, considered the golden fence around the country, has performed a tremendous service to its motherland over the past three decades. It is essential for the organization to be highly effective in order to achieve its goals as a unified team. Many in-house information technology solutions have been provided to address pressing issues in various administrative areas and to improve the efficiency of existing organizational practices. These solutions have had a positive impact on current administrative functions. However, there are still areas requiring improvement that need proper attention. Managing victualing has become a time-consuming task, requiring considerable man-hours due to the large number of personnel in the Sri Lanka Navy. It has been identified that a web solution is needed to handle such tasks, increasing the productivity and efficiency of the organization. The solution was developed using a web development tool, Microsoft Visual Studio, and a database tool, Microsoft SQL Server 2008, to create an optimized system for the identified problem. The Wardroom Victualing Management System was proposed to address all issues associated with the existing manual system. The system manages all victualing-related functions for officers, such as victualing in/out, menu customization, final recovery handling, and summary reporting. The development of the system followed all phases of the software development life cycle. It is guaranteed that the Victualing Management System will address all pressing issues, easing the demanding workload of those involved in victualing management on a daily basis. The system has been accepted as a sophisticated solution by end users, based on the feedback from a recent evaluation.

Acknowledgements

The successful conclusion of this project is thankful to the dedication and contributions of numerous individuals who have profoundly shaped the trajectory of my research. At the forefront, I extend my deepest appreciation to Prof. G.K.A. Dias, my project supervisor, whose invaluable guidance and counsel have been pivotal. His encouragement has been a constant source of inspiration, and I am grateful for the insights and solutions he has provided related to the research topic.

Furthermore, I extend my thanks to the Director Board of the University of Colombo School of Computing (UCSC) for fostering a supportive environment and providing the necessary resources for the completion of this project.

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List of Acronyms

CA	Catering Assistance
DNIT	Director Naval Information Technology Department
HRMS	Human Resource Management System
MIT	Master of Information Technology
NHQ	Navy Head Quarters
SA	Supply Assistance
SDLC	Software Development Life Cycle
SLN	Sri Lanka Navy
UCSC	University of Colombo School of Computing
UML	Unified Modeling Language

Chapter 1 – Introduction

This report is the result of an extensive thesis study conducted as part of the Master of Information Technology (MIT) program at the University of Colombo School of Computing (UCSC). The author of this report holds a professional position in the Director Naval Information Technology Department (DNIT) of the Sri Lanka Navy (SLN) and has undertaken a thorough examination of the existing work requirements in light of the academic expertise acquired during the pursuit of the master's program. As a direct result of this exploration, the "Wardroom Victualing Management System" was conceived and developed to address the identified demands effectively.

1.1. Project Overview

1.1.1. About SLN

The SLN is an esteemed institution renowned for its well-balanced and cohesive nature. It demonstrates exceptional effectiveness in navigating the waters surrounding Sri Lanka while diligently safeguarding our nation's vital interests. Moreover, the Navy has witnessed significant growth in its operational capacity on land in recent times. This remarkable expansion can be attributed to the invaluable support rendered to the Sri Lanka Army, Sri Lanka Air Force and Police in their joint efforts to uphold law and order during operational and emergency scenarios on land.

Currently, the Sri Lanka Navy (SLN) has grown into a substantial organization with a workforce of approximately 47,100 personnel, including 3,114 officers. In accordance with directives from the Supply Branch, the SLN ensures the provision of daily meals for all its members. Meal preparation is conducted separately for officers and sailors, with particular attention given to officers' meals. This careful focus allows for the collection of preliminary data required for meal planning and cost estimation, ensuring accurate assessments of overall food consumption at the end of each month. This diligent approach supports efficient resource management and sustains the nutritional well-being of Navy personnel.

1.1.2. Current wardroom victualing process

Officers within the SLN enjoy certain privileges when it comes to their meals. Apart from the planned wardroom menu, officers have the option to order additional food items according to their preferences. This flexibility allows them to customize their meals based on personal choices. Furthermore, officers have the liberty to skip breakfast, lunch, or dinner as they deem fit for any given period. They also have the freedom to order various food items at any time, catering to their specific requirements.

Moreover, officers have access to dry food items stocked in the respective wardroom victualing stores. This provision enables them to procure essential non-perishable food items as needed. Additionally, officers can procure any type of alcoholic beverage from the respective wardroom bar.

Notably, the wardroom also serves as a venue for hosting parties. Officers have the privilege of organizing gatherings in the wardroom at any time, complete with food and a selection of alcoholic beverages. This facility extends to officers exclusively, allowing them to foster camaraderie and socialize in a designated and controlled environment. Presently, all the aforementioned tasks are managed through manual processes.

1.2. Motivation

At present, the SLN employs a manual system known as the "meal book" to meticulously record and monitor pertinent information pertaining to food consumption. This process involves marking entries such as "IN" for reserved meals and "OUT" for meals that have been reserved but not consumed. Individual officers' meals are meticulously logged, with each entry linked to a specific date and official number.

Additionally, each officer has a dedicated page in the meal book, overseen by the supply staff, where any additional food items and liquor purchases made by the officers are recorded. Furthermore, the cost of individual parties is calculated manually and added to the respective officer's page. This entire process is executed manually by a team of approximately 15 staff members assigned to each of the 29 wardrooms. Regrettably, this system demands a considerable

amount of time and effort, with staff dedicating approximately one week to the preparation of the recovery process.

Consequently, this manual approach consumes a significant number of man-hours and impinges upon overall productivity levels. Given the labor-intensive nature of these tasks, there is a pressing need to explore more efficient alternatives that can enhance productivity and streamline administrative processes.

In accordance with government regulations, each officer within the SLN is entitled to a daily victualing allowance of Rs. 1161.56. As per this allowance, it becomes necessary for the supply staff to calculate the credit and debit for each officer at the end of the month. This calculation is based on the officer's consumption of food and liquor items.

Once the account sheet is prepared, it is forwarded to the pay department. The pay department then proceeds to deduct the respective amount from each officer's salary, reflecting the officer's expenses incurred beyond the provided victualing allowance.

The improper tracking of food items in the current system has led to significant wastage and discrepancies in the accounts, as well as challenges in maintaining accurate stock balances within the relevant month. Furthermore, the existing wardroom victualing process has encountered various problems and instances of malpractice. These issues highlight the pressing need for a smooth, accurate, and less human-dependent automated system across all 29 command wardrooms within the SLN.

Implementing an automated system would address these concerns and streamline the victualing process. By reducing human interaction and incorporating efficient tracking mechanisms, such a system would significantly minimize wastage and ensure precise accounting of food items and stock balances. Additionally, this automated solution would alleviate the burden on the 15 wardroom staff members currently involved in the victualing process, allowing them to be assigned to other duties within the SLN.

The introduction of an automated system would not only enhance operational efficiency but also foster transparency, mitigate malpractices, and optimize resource allocation. As a result,

the SLN can better utilize its resources, improve productivity, and strengthen overall organizational effectiveness.

Another significant issue pertains to the difficulty officers' face in accessing their final wardroom recovery information. Presently, officers are required to physically visit the wardroom recovery office and manually search for their recovery breakdown. This cumbersome process can be time-consuming and inconvenient for the officers.

To address this problem, it is crucial to implement a more accessible and user-friendly system that allows officers to readily access their wardroom recovery details. A digital platform or an automated system can be developed to provide officers with convenient and secure access to their recovery breakdowns. By providing officers with online access to their recovery information, they can easily review and track their expenses, ensuring transparency and ease of administration.

This technological solution would significantly enhance the user experience, providing officers with the ability to monitor their wardroom recovery at their convenience, without the need for physical visits to the recovery office. It would empower officers to stay informed about their financial obligations and facilitate better financial planning and management.

Implementing a digital platform for accessing wardroom recovery breakdowns would not only streamline the process but also enhance officer satisfaction and overall efficiency within the SLN.

Therefore, introduce web based “Automated Wardroom Victualing System” for all naval command wardrooms as the solution for the wardroom victualing process. The system initiates a paperless environment and enhances the efficiency and accuracy of the wardroom victualing process while ensuring maximum utilization of allocated funds, available resources of SLN.

1.3. Objectives

The primary objective of the proposed project is to enhance the existing manual wardroom victualing management process by introducing a system that offers additional value to both officers and wardroom staff. The project aims to address the limitations and challenges of the current system while leveraging technology to provide various benefits and improvements.

The successful implementation of the Victualing Management System is expected to achieve the following objectives:

- a. To facilitate proper communication between Mess Assistants, Catering Assistants, Store Assistants and Account handling staff.

The system will enable seamless communication between these personnel and officers through features such as adding, editing, deleting, and viewing data. This will enhance coordination, information sharing, and collaboration among the various roles involved in the victualing management process.

- b. Officers and wardroom staff will experience enhanced convenience, efficiency, and accuracy in their day-to-day operations. The system will streamline processes, reduce manual errors, and save valuable time for both officers and staff members involved in the victualing management.

- c. Improve transparency and accountability by providing officers with easy access to their victualing details and facilitating better financial planning and tracking. Additionally, the system will promote resource optimization, reduce wastage, and ensure the effective utilization of allocated funds, ultimately benefiting the SLN as a whole.

- d. To enhance the quality of the Wardroom Victualing Management process by introducing a web-based online solution. The system will transform the entire Wardroom Victualing Management process into a web-based solution, yielding several benefits.

- (1) Efficient stock management: The system will enable better monitoring and management of stock levels, reducing wastage and ensuring timely replenishment.
 - (2) Creation of different menu plans: The system will allow for the creation of distinct menu plans for Main menus, Party menus, and Group menus, with appropriate authorization. This will enhance menu variety and cater to different occasions or dietary requirements.
 - (3) Efficient meal attendance management: The system will streamline the process of managing meal attendance, ensuring accurate tracking of officers' presence and meal preferences.
 - (4) Expedited creation of final wardroom victualing recovery: The system will automate and expedite the creation of the final recovery breakdown, reducing the time required for this task.
 - (5) Enhanced accessibility for officers: Officers will have the convenience of accessing their final recovery details anytime and anywhere through the system, providing transparency and convenience.
- e. The system will enable officers, Mess Assistants, Catering Assistants, Store Assistants, and Supply staff to access the system remotely from any location, at any time, and retrieve the necessary information based on their access levels.

At the end of the project, the Victualing Management system should enable the following activities to be performed online:

- (1) Store Assistants can charge stock and maintain inventory: Store Assistants will have the capability to record stock transactions and effectively manage inventory levels through the system. This will ensure accurate tracking of stock and facilitate timely replenishment.

Further, Store Assistants will be able to access officers' meal preferences along with the corresponding ingredient lists. This information will assist in ensuring the provision of appropriate raw materials to Catering Assistants.

(2) Catering Assistants can create menu plans and add ingredients: Catering Assistants will be able to develop menu plans and include specific ingredients required for each menu item. This feature will enhance menu customization and streamline the ordering process for ingredients.

(3) Mess Assistants can add meal preferences for officers: Mess Assistants will have the ability to input individual officers' meal preferences into the system. This information will be used to personalize meal offerings based on officers' preferences and dietary requirements.

(4) **Officers** can make online meal reservations and customize menus: Officers will be able to make meal reservations online, indicating their preferred meal options and customizing menus according to their preferences. This feature will provide officers with flexibility and convenience in selecting their meals.

Furthermore, Officers can view their recovery status at any time: Officers will have real-time access to their recovery status through the system, allowing them to monitor their expenses and view their recovery breakdowns at any time. This feature eliminates the need to wait until the end of the month for recovery information.

(5) **Supply Staff** can automate the calculation of meal costs and generate the final wardroom recovery: At the end of each day, the supply staff will be able to automatically calculate the cost of meals for each officer based on their preferences and generate the final wardroom recovery. This process will be expedited using a shorter time period (1 hour) and the proposed system.

By transitioning to a digital platform, the Victualing Management system will significantly reduce the amount of paperwork involved in the victualing process. This shift towards a paperless environment aligns with environmentally friendly practices, contributing to sustainability efforts.

The system will capture real-time data and information related to wardroom victualing activities. This data can be utilized to generate comprehensive management reports, providing insights into consumption patterns, costs, and other relevant metrics. These reports will facilitate informed decision-making and enable better resource allocation.

The implementation of the system will expedite various tasks and processes, reducing the overall time required for wardroom victualing. By automating calculations, generating recovery breakdowns, and providing real-time access to information, the system will enhance accuracy, productivity, and efficiency within the victualing management process.

By achieving these objectives, the Victualing Management system will revolutionize the wardroom victualing process by enabling remote access, reducing paperwork, capturing real-time data, and enhancing overall efficiency. The system will contribute to a more sustainable and environmentally friendly approach while providing officers and personnel with the tools and information they need to make informed decisions and streamline operations.

Overall, the project intends to bring added value to officers and wardroom staff by significantly improving the wardroom victualing management process. By implementing an automated system, the project seeks to enhance efficiency, accuracy, and transparency, fostering a more effective and accountable environment within the SLN.

1.4. Background of the Study

The Sri Lanka Navy has a rich history spanning over sixty years, and its operational capability on land has improved tremendously in recent years due to the necessity of assisting the Sri Lanka Army and Police in maintaining law and order during operational requirements and other emergencies. The operational methodology followed by the Navy is inherited from the Royal Navy, however, it is well understood that some of these methodologies and practices have not produced the desired outcomes for the Navy. This project primarily focuses on the victualing section within the supply and logistics domain, as feedback and observations from various officers and sailors indicate dissatisfaction with the current victualing management process, highlighting the need for positive changes.

Currently, the Navy manages its core victualing management process using a manual system. While this existing system has allowed for the management of the victualing process to a fair extent, those directly engaged in the manual process are seeking improvements to address their pressing issues promptly. The background of the study for the Wardroom Victualing Management System revolves around the existing manual processes and challenges faced in the management of victualing activities within wardrooms, providing context and justification for the development and implementation of an automated system.

Considering these factors, the background of the study emphasizes the need for an automated Wardroom Victualing Management System. This system aims to address the limitations of the manual processes by providing an online platform that streamlines operations, enhances accessibility, improves accuracy, and optimizes resource utilization. The study seeks to investigate the feasibility, benefits, and potential impact of implementing such a system within the SLN's wardrooms.

1.5. Scope of the Study

The proposed project aims to encompass a comprehensive scope by replacing the existing manual process of wardroom victualing management with a sophisticated web-based system known as the Wardroom Victualing Management System. By implementing this innovative system, the entire range of wardroom victualing activities will undergo a transformative shift towards a web-based platform, ensuring accessibility and convenience from any location at any given time.

The Wardroom Victualing Management System, web application is structured into five distinct sections, aligning with the problem areas previously identified:

- | | | | |
|----|------------------------------------|---|---------------------|
| a. | Stock Management | - | Store Assistants |
| b. | Menu Preparation | - | Catering Assistants |
| c. | Meal Attendance | - | Mess Assistants |
| d. | Item Sale | - | Store Assistants |
| e. | Final Monthly Recovery Preparation | - | Supply Assistants |
| f. | User Management | - | All Officers |

a. Stock Management

The Stock Management section is undeniably crucial within the project, serving as the central hub for all stock-related activities. It is the responsibility of Store Assistants to oversee and maintain this section, which encompasses a range of essential functions. The following functions are included within this section:

- (1) Create new item
- (2) On charge 309 annual price list
- (3) Stock on charge (Cash/309)
- (4) Edit, Delete stock items
- (5) Reports

The Stock Management section provides a comprehensive range of reporting functionalities for Store Assistants to access relevant information. These reports include:

- (a) View 309 Annual Price List
- (b) View on Charge Bill
- (c) View All Purchase Items by Duration
- (d) View Available Item List with Price
- (e) View Full Stock
- (f) View Stock Item-wise
- (g) View Purchased Items by Duration
- (h) View Sale Item List by Duration
- (j) View Individual Sale Summary
- (k) Daily Summary by Official Number
- (m) Monthly Summary by Official Number

b. Menu Preparation

The Menu Preparation section is a vital component of the project, managed by the Catering Assistants. Their role involves creating various menu plans for Main menus, Party menus, and Group menus, while adhering to the appropriate authorization protocols. Additionally, Catering Assistants has the flexibility to add ingredients to different menu items. Officers are also granted the privilege of customizing the menus according to their preferences if they choose not to follow the suggested menu provided by the wardroom. The following functions are encompassed within this section:

- (1) Create New Menu Item
- (2) Add Ingredients for Menu Item
- (3) Edit/Delete Ingredients for Menu Item
- (4) Create New Menu/Group Menu/Party Menu
- (5) Change Menu Items by Authorized Person
- (6) Reports
 - (a) View All Menus

- (b) View Main Menu/Group Menu/Party Menu Ingredients List

- c. **Meal Attendance**

The Meal Attendance section is a crucial aspect of the project and is managed by the competent Mess Assistants. Their role primarily involves recording officers' meal preferences using the system. Officers, in turn, have the convenience of reserving their meals online by indicating their preferences for breakfast, lunch, and dinner (in/out). The section displays the daily consumption of meals, providing figures such as the total headcount and detailed variations in meal choices. The following functions are encompassed within this section:

Menu Individual Meal Attendance: Mess Assistants have the ability to record individual officers' meal attendance based on the menu choices selected by each officer. This function ensures accurate tracking of meal consumption for each officer, allowing for efficient meal preparation and resource management.

- (1)Main Menu Meal Attendance - Bulk
- (2)Update/Delete Meal Attendance
- (3)Customized Meal Attendance
- (4)Group Menu Attendance
- (5)Reports
 - (a) View Main Menu Attendance List
 - (b) View Group Menu Attendance List
 - (c) View Customized Meal Attendance List
 - (d) View All Type Meal Attendance Lists

d. **Item Sale**

The Item Sale section is a significant component of the system, overseen by the competent Store Assistants. This section primarily deals with the sale of various items, including dry items required for menus and individual item requirements. The Item Sale segment is further divided into two sections: Sale of Menu Items and Sale of Individual Items. Each section encompasses specific functions to ensure a smooth and efficient sales process.

Sale of Menu Items

- (1) Menu Sale
- (2) Group Menu Sale
- (3) Customize Menu Sale
- (4) Extra Items for Menu Sale
- (5) Party Items Sale
- (6) Other
- (7) Reports
 - (a) View Main Menu Sale
 - (b) View Group Menu Sale
 - (c) View All Sale Details

Sale of Individual Items

- (1) Individual Personal/Credit Item Sale

Store Assistants process the sale of individual items requested by officers on a personal or credit basis. This function allows officers to acquire specific items according to their preferences or requirements.

- (2) Group Dry Items Sale

In certain cases, officers may request dry items in bulk for group purposes. Store Assistants can handle the sale of these group dry items, ensuring efficient distribution and proper tracking.

- (3) Reports
 - (a) View Individual Personal Sale (Daily/Monthly)
 - (b) View Individual Credit Issue

e. Final Monthly Recovery Preparation

The Item Sale segment of the wardroom victualing management system includes a crucial section dedicated to calculations and recovery preparation, which is maintained by Supply Assistants. This section encompasses various functions that contribute to accurate cost calculations and the generation of the final recovery. The following functions are available within this section:

- (1) Calculate Cost per Meal and Authorization
- (2) Upload 304 List and Authorization
- (3) Upload Bar Recovery and Authorization
- (4) Get Monthly Officer List and Authorization
- (5) Authorize Cost
- (6) Get Individual Monthly Cost and Authorization
- (7) Upload Mess Substitute and Authorization
- (8) Get Final Recovery
- (9) Reports
 - (a) View Final Monthly Recovery
 - (b) View Final Recovery with Service Type
 - (c) View Monthly Individual Profile

The integration of the wardroom victualing management system with the Human Resource Management System (HRMS) is crucial for effective communication and seamless data exchange between the two systems. By integrating with the HRMS, the wardroom victualing management system can access and utilize the personal details and appointment information of all officers in the SLN.

1.6. Structure of the Dissertation

Chapter 1 - Introduction

- a. Project Overview: This section provides a high-level introduction to the wardroom victualing management system project. It outlines the purpose of the project, its significance, and the need for an automated system. It also highlights the motivation behind the project and the objectives it aims to achieve.
- b. Objectives: This subsection lists the specific objectives of the wardroom victualing management system project, which may include improving efficiency, accuracy, and accountability, reducing waste and malpractices, and enhancing resource management.
- c. Background of the Study: This subsection provides a detailed background of the wardroom victualing management process, highlighting the challenges and issues associated with the existing manual system. It discusses the importance of accurate tracking, financial accuracy, and resource allocation within the SLN.
- d. Scope of the Study: This subsection defines the boundaries and limitations of the study. It specifies the specific aspects of the wardroom victualing management system that will be covered, such as stock management, menu preparation, meal attendance, item sale, and recovery preparation.
- e. Structure of the Dissertation: This subsection outlines the overall structure and organization of the dissertation, providing a roadmap for the reader to navigate through the various chapters and sections.

Chapter 2 - Background

- a. Requirement Analysis: This section conducts a thorough analysis of the requirements for the wardroom victualing management system. It identifies the functional and non-functional requirements, gathers user needs and expectations, and analyzes the existing processes and workflows.

- b. Literature Review: This section presents a comprehensive review of the relevant literature and research related to wardroom victualing management systems. It explores previous studies, methodologies, and best practices in the field, providing a theoretical foundation for the system design.
- c. Related Technologies: This subsection discusses the technologies and tools that are relevant to the development and implementation of the wardroom victualing management system. It explores different software platforms, databases, programming languages, and frameworks that can be utilized.

Chapter 3 - Design Architecture

This section describes the design process of the implemented wardroom victualing management system. It discusses the system architecture, database design, user interface design, and the overall structure of the system. It may include diagrams, flowcharts, and wireframes to illustrate the design concepts and principles.

Chapter 4 - Implementation

This chapter will describe the implementation of the system, explaining all major code and module structures. It will include a diagram to depict and describe the interaction between the system's modules. Furthermore, it will detail the selection of the hardware and software for implementation.

Chapter 5 - Testing and Evaluation

This section outlines the testing and evaluation strategy for the wardroom victualing management system. It defines the test scenarios, test cases, and testing methodologies to ensure the system functions as intended. It also discusses the evaluation criteria and metrics used to assess the system's performance, usability, and effectiveness.

Chapter 6 - Conclusion

This chapter summarizes the problem introduced in the first chapter, details what has been achieved in relation to the objectives, and discusses prospects for future work.

References

A list of referred web and other publications refereed.

Appendix

Additional information related to the project.

Chapter 2 – Background

2.1. Introduction

The implementation of the Victualing Management System will follow the Waterfall methodology within the Software Development Life Cycle (SDLC) to ensure a systematic and organized approach. The system's success in achieving its objectives depends largely on meeting the functional and non-functional requirements identified during the SDLC. These requirements are fundamental to the system's effectiveness and efficiency, making it essential to thoroughly gather and define them throughout the SDLC process.

In order to achieve the ultimate goal of the system, the following functional and non-functional requirements must be satisfied. The functional requirements encompass the specific tasks and functionalities the system should perform, such as stock management, menu preparation, meal attendance, item sales, and final recovery preparation. On the other hand, the non-functional requirements focus on aspects that enhance the system's performance and user experience, including reliability, usability, security, scalability, and performance.

This chapter will also delve into providing a detailed background on the subject matter, as well as past experiences related to victualing management. By thoroughly examining the background information and drawing from previous experiences, valuable insights and lessons can be gained to inform the implementation of the Victualing Management System.

2.1.1. Functional Requirements

The Victualing Management System should meet the following functional requirements:

- a. The system should enforce access restrictions to ensure that only authorized users can log in and access the system. This helps maintain data security and prevent unauthorized access to sensitive information.

- b. The system should include a time-out feature that restricts user actions after a specified period of inactivity. This helps prevent data entry errors or unauthorized access when users are away from the system for an extended period.
- c. To facilitate effective communication among Mess Assistants, Catering Assistants, Store Assistants, and Account handling staff, the system should incorporate a messaging or communication feature.
- d. The system will enable better monitoring and management of stock levels, reducing wastage, and ensuring timely replenishment. By providing real-time visibility into inventory levels and consumption patterns, the system will allow for proactive inventory management.
- e. The system will allow for the creation of distinct menu plans for Main menus, Party menus, and Group menus, with appropriate authorization.
- f. The system will streamline the process of managing meal attendance, ensuring accurate tracking of officers' presence and meal preferences. Through the system, officers will be able to indicate their meal preferences and attendance for each meal service.
- g. The system will automate and expedite the creation of the final recovery breakdown, reducing the time required for this task. By integrating data from meal attendance records, stock levels, and menu plans, the system will generate the final recovery breakdown quickly and accurately.
- h. Officers will have the convenience of accessing their final recovery details anytime and anywhere through the system, providing transparency and convenience. With secure login credentials, officers can access the system from their computers, allowing them to view their final recovery breakdowns, meal attendance records, and other relevant information at their convenience.

- i. Store Assistants will have the capability to record stock transactions and effectively manage inventory levels through the system. This feature allows them to accurately track stock movements, monitor current inventory levels, and identify any discrepancies or shortages.
- j. Store Assistants will have access to officers' meal preferences along with the corresponding ingredient lists through the system. This feature enables Store Assistants to review the specific requirements for each meal, including any dietary restrictions or preferences indicated by officers.
- k. Catering Assistants will have the capability to develop menu plans within the system, specifying the ingredients required for each menu item. This functionality enables Catering Assistants to create customized menus tailored to officers' preferences, dietary restrictions, and event requirements. By accessing the system, Catering Assistants can easily view available ingredients, check stock levels, and order necessary items directly from suppliers.
- l. Mess Assistants will be equipped with the capability to input individual officers' meal preferences directly into the system. This functionality allows Mess Assistants to record and store detailed information regarding officers' dietary requirements, food allergies, taste preferences, and special requests.
- m. Officers will have the convenience of making meal reservations online through the system, where they can indicate their preferred meal options and customize menus according to their preferences. This feature allows officers to access the system from any location with internet connectivity, providing flexibility and ease of use.
- n. At the end of each day, the supply staff will be able to automatically calculate the cost of meals for each officer based on their preferences. This calculation will take into account the ingredients used, portion sizes, and any additional expenses incurred. Using

this information, the system will generate the final wardroom recovery, detailing the total cost of meals consumed by each officer.

- o. The system should be capable of generating reports based on user requests. Users should have the ability to specify the desired parameters and criteria for the report, such as specific time frames, categories, or officer profiles. The system should then generate the requested report in a clear and understandable format.
- p. The system should implement session management to control user access and ensure a secure and seamless experience. This involves assigning unique session identifiers to each user upon login and maintaining the session state throughout their interaction with the system. Session management helps monitor user activity, authenticate users, and control access to specific features or data within the system.

2.1.2. Non Functional Requirements

The non-functional requirements of the proposed system should be as follows:

- a. Simplicity and ease of understanding: The system should have a user-friendly interface with clear and intuitive forms and content.
- b. Computer literacy of users: Users should possess a basic level of computer literacy to effectively navigate and utilize the system.
- c. Availability of an adequate number of computers compatible with internet access: Sufficient computer resources should be available to ensure seamless system usage.
- d. Networking mechanism: A mechanism should be in place to connect each ship, base, craft, establishment, or contingent to the master controller at Navy Headquarters, enabling efficient data communication and sharing.

- e. Familiarization of users and administrators: Users and administrators should receive proper training and guidance to become familiar with the new system, its features, and functionalities.
- f. Time consumption for filling up special events: The system should optimize the time required for filling up special event-related information, ensuring efficiency and minimizing user effort.
- g. Separate logging/access mechanism: The system should incorporate a secure and separate logging/access mechanism for users, ensuring appropriate access control and maintaining data confidentiality.
- h. Data preservation and backup: The system should have measures in place to preserve data integrity and importance, including regular backups to prevent data loss in case of system failures or emergencies.

2.2. Requirement Analysis

Requirement analysis for the Wardroom Victualing Management System involves the process of gathering and understanding the needs and expectations of the system's stakeholders, defining the system's functional and non-functional requirements, and documenting them in a structured manner. The goal is to ensure that the system meets the desired objectives and addresses the specific challenges and requirements of the wardroom victualing process.

During the requirement analysis phase for this system, the following activities are performed:

- a. Stakeholder Identification

Identify the key stakeholders involved in the wardroom victualing process, such as officers, mess assistants, catering assistants, store assistants, and supply assistants. Understand their roles, responsibilities, and expectations regarding the system.

b. Requirement Gathering

Engage with stakeholders through interviews, observations, field visit and surveys to collect their requirements and understand the current challenges and pain points in the wardroom virtualizing process. Capture both functional requirements (what the system should do) and non-functional requirements (qualities and constraints of the system).

c. Requirement Documentation

Document the gathered requirements in a structured manner, including use cases (Appendix ‘A’), user stories, and requirements specifications. Clearly define the system's inputs, outputs, processes, and constraints.

d. Requirement Prioritization

Prioritize the requirements based on their importance and criticality to the system. Identify the must-have requirements that are essential for system functionality and success.

e. Requirement Validation

Review and validate the requirements with stakeholders to ensure that they accurately represent their needs and expectations. Address any conflicts or inconsistencies in the requirements and make necessary revisions.

f. Requirement Traceability

Establish traceability links between the requirements and the system's design, development, and testing phases. This helps ensure that each requirement is addressed and tested adequately.

g. Requirement Management

Establish a mechanism to manage and track changes to the requirements throughout the project lifecycle. This includes handling change requests, documenting changes, and ensuring that the changes are properly implemented.

Using the requirement analysis phase provides a solid foundation for the design, development, and implementation of the Wardroom Victualing Management System. It helps align the system's functionalities with the stakeholders' needs, ensuring that the system effectively supports and improves the wardroom victualing process.

According to the requirement analysis, this proposed project aims to encompass a comprehensive scope by replacing the existing manual process of wardroom victualing management with the following web application structured into five distinct sections, aligning with the problem areas previously identified:

According to the requirement analysis, this proposed project aims to encompass a comprehensive scope by replacing the existing manual process of wardroom victualing management with the following web application structured into five distinct sections, aligning with the problem areas previously identified:

- | | | | |
|----|------------------------------------|---|---------------------|
| a. | Stock Management | - | Store Assistants |
| b. | Menu Preparation | - | Catering Assistants |
| c. | Meal Attendance | - | Mess Assistants |
| d. | Item Sale | - | Store Assistants |
| e. | Final Monthly Recovery Preparation | - | Supply Assistants |
| f. | User Management | - | All Officers |

a. Stock Management

This section consists of the following functions.

(1) Create new item

Store Assistants have the capability to create new stock items within the system. This function enables them to add details and specifications of new items that need to be included in the wardroom's inventory.

(2) On charge 309 annual price list

Store Assistants can upload and update the 309 annual price list, which serves as a reference for pricing and cost calculations related to various stock items. This function ensures that the system is equipped with accurate and up-to-date price information.

(3) Stock on charge (Cash/309)

This function allows Store Assistants to record and manage stock on charge transactions, both in terms of cash payments and transactions associated with the 309 account. It enables efficient tracking of stock movement and associated financial transactions.

(4) Edit, Delete stock items

Store Assistants have the authority to make necessary edits or delete stock items from the system. This function ensures that the inventory remains up-to-date and accurately reflects the available stock within the wardroom.

(5) Reports

The Stock Management section provides a comprehensive range of reporting functionalities for Store Assistants to access relevant information. These reports include:

(a) **View 309 Annual Price List:** Store Assistants can access and view the entire 309 annual price list, providing an overview of prices assigned to different stock items.

(b) **View on Charge Bill:** This report enables Store Assistants to review and verify the details of on charge bills, providing a breakdown of charges associated with each transaction.

(c) **View All Purchase Items by Duration:** Store Assistants can generate a report that displays all purchased items within a specified

timeframe, facilitating better tracking and analysis of procurement activities.

(d) **View Available Item List with Price:** This report provides a comprehensive list of available stock items, along with their respective prices, ensuring transparency and easy reference for officers and staff.

(e) **View Full Stock:** Store Assistants can access a report that presents a comprehensive overview of the entire stock inventory, facilitating efficient management and planning.

(f) **View Stock Item-wise:** This report allows Store Assistants to view stock items individually, providing detailed information on each item's quantity, location, and other relevant details.

(g) **View Purchased Items by Duration:** Store Assistants can generate a report that highlights all purchased items within a specific duration, facilitating expense tracking and analysis.

(h) **View Sale Item List by Duration:** This report provides a list of all items sold within a specified timeframe, enabling better monitoring and analysis of sales activities.

(j) **View Individual Sale Summary:** Store Assistants can access a report that presents a summary of sales activities and transactions associated with each individual officer.

(k) **Daily Summary by Official Number:** This report offers a daily summary of stock-related activities, categorized by official numbers, providing an overview of consumption patterns and trends.

(m) **Monthly Summary by Official Number:** Store Assistants can generate a report that presents a monthly summary of stock-related activities, categorized by official numbers, offering a comprehensive view of consumption and expenditure patterns.

By incorporating these vital functions within the Stock Management section, the project aims to streamline and optimize stock-related processes, ensuring accurate inventory control, efficient financial management, and comprehensive reporting capabilities. The Store Assistants' role is instrumental in maintaining the accuracy, availability, and overall management of stock items within the wardroom victualing system.

b. Menu Preparation

The following functions are encompassed in this section:

(1) **Create New Menu Item**

Catering Assistants have the capability to create new menu items within the system. This function enables them to add details and specifications of new menu items to expand the available choices for officers.

(2) **Add Ingredients for Menu Item**

Catering Assistants can add ingredients to each menu item to provide comprehensive information regarding the components required for preparing the menu. This function ensures that all necessary ingredients are accounted for and readily available when preparing the meals.

(3) **Edit/Delete Ingredients for Menu Item**

Catering Assistants have the authority to make necessary edits or delete ingredients associated with specific menu items. This function allows them to update ingredient lists based on availability, dietary restrictions, or recipe changes.

(4) Create New Menu/Group Menu/Party Menu

Catering Assistants is responsible for creating new menu options across different categories, including Main menus, Group menus, and Party menus. This function facilitates the organization and planning of meals for various occasions and group sizes.

(5) Change Menu Items by Authorized Person

Authorized personnel, such as senior officers or designated individuals, have the authority to make changes to the menu items. This function ensures that only authorized modifications are made and maintains control over menu planning.

(6) Reports

(a) **View All Menus:** Catering Assistants can access a comprehensive view of all menus available within the system, allowing for easy reference and management.

(b) **View Main Menu/Group Menu/Party Menu Ingredients List:**

This report provides a detailed list of ingredients associated with each menu item under different categories, enabling accurate planning and procurement of necessary ingredients.

By incorporating these functions within the Menu Preparation section, the project aims to enhance the flexibility and customization options for officers, ensure proper ingredient management, and streamline the menu planning process. The Catering Assistants play a vital role in maintaining a diverse and well-organized menu selection that caters to the preferences and requirements of the officers.

c. **Meal Attendance**

Meal attendance can be recorded in two main ways, and this module consists of the following sections,

(1) **Main Menu Meal Attendance - Bulk**

This function allows Mess Assistants to record meal attendance for a large number of officers in a bulk manner. By selecting the main menu option, they can mark attendance for multiple officers simultaneously, simplifying the process and saving time.

(2) **Update/Delete Meal Attendance**

Mess Assistants can make necessary updates or deletions to recorded meal attendance in case of any changes or corrections. This function ensures the accuracy of meal attendance records and allows for adjustments as needed.

(3) **Customized Meal Attendance**

Officers have the flexibility to customize their meal attendance according to their specific preferences or requirements. This function enables officers to indicate their meal choices or skip a particular meal if desired, providing them with a personalized dining experience.

(4) **Group Menu Attendance**

In situations where group menus are offered, Mess Assistants can record attendance for officers who have opted for the group menu option. This function ensures proper management of group meal arrangements and accurate tracking of attendance.

(5) Reports

- (a) **View Main Menu Attendance List:** This report displays the attendance list specifically for the main menu, providing a comprehensive overview of officers who have availed themselves of this meal option.

- (b) **View Group Menu Attendance List:** This report provides a detailed list of officers who have selected the group menu option, allowing for efficient planning and coordination of group meals.
- (c) **View Customized Meal Attendance List:** This report presents a list of officers who have customized their meal attendance, providing valuable insights into individual preferences and requirements.
- (d) **View All Type Meal Attendance Lists:** This comprehensive report displays attendance lists for all types of meals offered, facilitating accurate monitoring of meal consumption and supporting decision-making processes.

By incorporating these functions within the Meal Attendance section, the project aims to streamline the process of recording and managing officers' meal preferences and attendance. Mess Assistants play a critical role in ensuring accurate and up-to-date meal attendance records, facilitating efficient meal planning, and providing officers with a seamless dining experience.

d. Item Sale

The Item Sale segment is further divided into two sections: Sale of Menu Items and Sale of Individual Items. Each section encompasses specific functions designed to ensure a smooth and efficient sales process.

Sale of Menu Items

(1) **Menu Sale**

Store Assistants can process the sale of menu items, allowing officers to purchase items associated with the main menu. This function ensures the availability and smooth distribution of menu-related items to officers.

(2) Group Menu Sale

This function enables Store Assistants to handle the sale of items associated with group menus. Officers who have opted for group menus can conveniently purchase the corresponding items through this function.

(3) Customize Menu Sale

Officers have the option to customize their menu selections. Store Assistants can facilitate the sale of items specific to individualized menu choices, ensuring officers receive their desired items.

(4) Extra Items for Menu Sale

In certain cases, officers may request additional items beyond the standard menu offerings. Store Assistants can manage the sale of these extra items to fulfill officers' preferences.

(5) Party Items Sale

This function allows Store Assistants to handle the sale of items for parties or special events organized within the wardroom.

(6) Other

This section includes the sale of additional items such as tea ration, depreciation items, and items required for Commander of the Navy special functions. Store Assistants manage the sale of these items as per the specific requirements.

(7) Reports

(a) **View Main Menu Sale:** This report provides a comprehensive overview of the sale of items associated with the main menu. It includes details such as the quantity and type of items sold, as well as the corresponding financial information. This report allows Store Assistants

and authorized personnel to assess the popularity and consumption patterns of main menu items.

(b) **View Group Menu Sale:** This report presents a detailed analysis of the sale of items related to group menus. It provides information on the specific items sold, quantities, and associated financial data. By examining this report, Store Assistants and authorized personnel can monitor the demand for group menu items and make informed decisions regarding procurement and menu planning.

(c) **View All Sale Details:** This comprehensive report encompasses all sale transactions within the wardroom victualing system. It includes information on the sale of menu items, group menu items, customized menu items, extra items, party items, and other miscellaneous sales. This report offers a holistic view of all sales activities, enabling Store Assistants, management, and relevant stakeholders to analyze the overall sales performance and identify any trends or areas that require attention.

Sale of Individual Items

(1) **Individual Personal/Credit Item Sale**

Store Assistants process the sale of individual items requested by officers on a personal or credit basis. This function allows officers to acquire specific items according to their preferences or requirements.

(2) **Group Dry Items Sale**

In certain cases, officers may request dry items in bulk for group purposes. Store Assistants can handle the sale of these group dry items, ensuring efficient distribution and proper tracking.

(3) Reports

- (c) **View Individual Personal Sale (Daily/Monthly):** This report provides detailed information on individual officers' personal item purchases, allowing for monitoring of daily or monthly sales activity.
- (d) **View Individual Credit Issue:** This report displays information on credit-based sales, providing an overview of officers' credit transactions.

e. Final Monthly Recovery Preparation

This section encompasses various functions that contribute to accurate cost calculations and the generation of the final recovery. The following functions are available within this section:

(1) Calculate Cost per Meal and Authorization

Supply Assistants are responsible for determining the cost per meal for each individual officer based on their chosen menu and the associated cost per head. This function enables them to calculate the precise cost for each officer's meals and ensures accuracy in the recovery process. Proper authorization ensures that only authorized personnel can perform this calculation.

(2) Upload 304 List and Authorization

This function allows Supply Assistants to upload the 304 list, which contains information about the officers' menu preferences and other relevant details. Authorization ensures that only authorized individuals can upload and modify this important data.

(3) Upload Bar Recovery and Authorization

Supply Assistants can upload the bar recovery data, which includes the consumption of various beverages by officers. This function helps in accurately

tracking and incorporating the bar expenses into the final recovery. Authorization controls access to this data to maintain data integrity.

(4) Get Monthly Officer List and Authorization

This function enables Supply Assistants to obtain the monthly list of officers, which includes their profiles and relevant details. Authorization ensures that only authorized personnel can access this information.

(5) Authorize Cost

Supply Assistants have the authority to authorize the calculated cost for each officer's meals based on the menu preferences and associated expenses. This function ensures that the cost calculations are properly validated and approved.

(6) Get Individual Monthly Cost and Authorization

This function allows Supply Assistants to retrieve the monthly cost for each individual officer, taking into account their meal preferences and authorized costs. Authorization controls access to this information.

(7) Upload Mess Substitute and Authorization

In cases where officers have requested a mess substitute, this function allows Supply Assistants to upload the substitute details and incorporate them into the recovery process. Authorization ensures that the correct individuals can perform this task.

(8) Get Final Recovery

This function facilitates the generation of the final recovery statement, which includes the total cost of meals and other relevant expenses for each officer. It consolidates all the necessary data to provide an accurate representation of the financial obligations of each officer.

(9) Reports

- (a) **View Final Monthly Recovery:** This report provides a comprehensive view of the final monthly recovery statement. It presents a summary of the total expenses incurred by each officer, including the cost of meals, beverages, and other relevant charges. This report allows authorized users, such as Supply Assistants, to review and verify the accuracy of the recovery before further processing.
- (b) **View Final Recovery with Service Type:** This report presents the final recovery statement categorized by service type. It provides a breakdown of expenses based on different service categories, such as main menu, group menu, party menu, and other specialized services. This report offers insights into the distribution of costs among various service offerings, allowing for better financial analysis and decision-making.
- (c) **View Monthly Individual Profile:** This report offers a detailed overview of the victualing consumption and expenses for each officer on a monthly basis. It includes information such as the officer's name, official number, meal preferences, consumed items, and associated costs. This report enables officers to review their individual victualing profiles, track their consumption patterns, and monitor their credit and debit status. It provides transparency and accountability in the victualing management process.

2.3. Review of Similar System

In order to implement the Wardroom Victualing Management System effectively and efficiently, a thorough analysis of existing systems and approaches was conducted to identify their strengths and weaknesses. This study helped in identifying the features and functionalities that are crucial for the proposed system. While some features of the existing systems were found to be improved upon, there were also certain features that were deemed critical and specific to the requirements of the Wardroom Victualing Management System, considering its unique nature within the context of the Sri Lanka Navy (SLN).

a. Marine Catering & Victualing Management

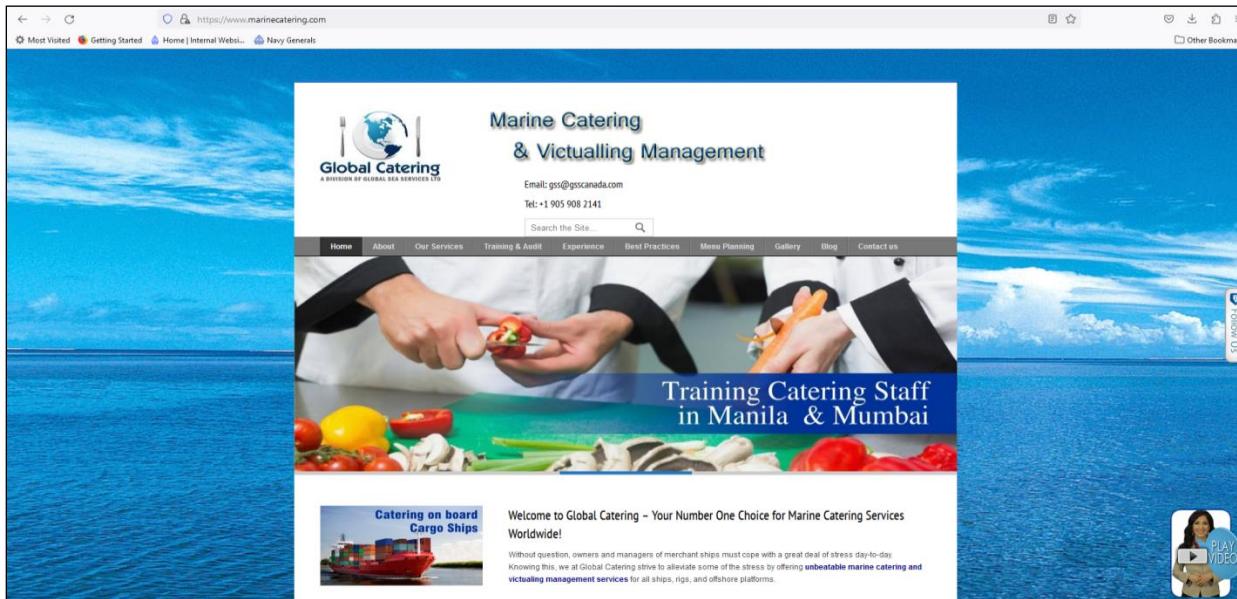


Figure 2.1: Marine Catering & Victualing Management

Global Catering strives to alleviate the stress associated with marine catering and victualing management by offering an unbeatable service for ships, rigs, and offshore platforms worldwide. Figure 2.1 is a snapshot of the Marine Catering & Victualing Management system. With extensive experience in the field, Global Catering goes beyond the basics of marine and offshore catering,

providing a fully automated victualing management system. Additionally, the system is supported by expert training facilitators to ensure smooth implementation and operation. [2]

One of the key features of this system is its fixed budget victualing management service. This service ensures that clients do not exceed their allocated financial limits. The negotiated per month/per day rate remains constant, meaning that the agreed-upon price is the price passengers will pay. By evaluating factors such as trading routes, on-board staff, and desired menus, Global Catering is able to provide clients with a competitive price that is transparent and free from hidden fees or unexpected monthly costs.

With the fully automated victualing management system, Global Catering streamlines the entire process, making it efficient and hassle-free. The system handles tasks such as menu planning, procurement, inventory management, and meal attendance tracking, ensuring that all aspects of victualing are well-managed. This automation allows for greater accuracy, cost control, and overall improved efficiency in the catering operations.

Furthermore, Global Catering understands the importance of training and support. They provide expert training facilitators who are knowledgeable in the intricacies of the victualing management system. These facilitators ensure that clients and their staff are well-equipped to utilize the system effectively, maximizing its benefits and minimizing any potential challenges.

b. Catering for galley staff- Stock Management & Administration

The screenshot shows a web browser displaying the 'Ships Business' website. The URL is shipbusiness.com/catering-for-galley-staff.html. The page title is 'Catering for galley staff- Stock Management & Administration'. The content includes:

- A list of responsibilities for the Shipboard chief cook role, such as cooking efficiently & economically, designing a well balanced menu, accurate stock controls, and temperature controls.
- A section for Cooks on all seagoing vessels, detailing their responsibilities like applying information to produce quality meals, adhering to the allocated budget, and following FIFO storage rules.
- A section for the Chief Cook, emphasizing the use of company resources to produce quality meals for all officers & crew, staying within the budget, and setting up precise food control and administrative procedures.
- A 'Food storage' section stating that storing and using food should follow the first in, first out (FIFO) rule.
- A note about storing food only in designated areas and keeping potentially hazardous food out of the temperature danger zone (5 to 63 °C).
- A photograph of the 'Ships Catering department' showing several chefs in white uniforms.
- A sidebar on the right listing various topics: Cooking Guideline, Cooking Methods, Multicultural Crew, Garbage Management, Shipboard Organization, Crew Training, Environmental Aspects, Environmental Awareness, Environment Protection, Garbage Management Plan, and Ship Recycling.

Figure 2.2: Catering for Galley Staff - Stock Management & Administration system

The Catering for Galley Staff - Stock Management & Administration system aims to optimize operational efficiency and cost-effectiveness, while also eliminating unnecessary features. Figure 2.2 is a snapshot of the Catering for Galley Staff - Stock Management & Administration system. The system is designed to work in the most efficient manner, minimizing waste of time and effort. [3] Its primary roles include:

- (1) Cooking Efficiently & Economically: The system provides tools and guidelines for efficient and economical cooking practices, ensuring that resources are utilized effectively to minimize waste and maximize output.
- (2) Designing a Well-Balanced Menu: The system assists in creating well-balanced menus that meet the nutritional needs and preferences of the intended audience. It takes into account factors such as dietary requirements, cultural considerations, and ingredient availability.
- (3) Various Cooking Methods: The system provides information and guidance on different cooking methods, enabling galley staff to utilize appropriate techniques for preparing meals efficiently and achieving desired outcomes.
- (4) Accurate Stock Controls: The system helps in maintaining accurate stock control by providing features for tracking inventory, monitoring stock levels, and generating reports on usage and depletion. This ensures that stock is managed effectively, preventing shortages or excessive stockpiling.
- (5) Ordering, Receiving & Storing: The system includes functionality for placing orders, receiving deliveries, and managing the storage of ingredients and supplies. This streamlines the procurement process and ensures proper inventory management.
- (6) Temperature Control: The system emphasizes the importance of temperature control in food safety and quality. It provides guidelines and monitoring tools to ensure that

food is stored, cooked, and served at appropriate temperatures to prevent spoilage and minimize the risk of foodborne illnesses.

(7) **Hygiene & Sanitation:** The system promotes and reinforces proper hygiene and sanitation practices in the galley. It provides guidelines for maintaining cleanliness, preventing cross-contamination, and following food safety regulations to ensure the health and safety of both staff and consumers.

c. Catering Management for Merchant Vessels

The screenshot shows a web browser displaying the Oceanic Services website at <https://oceanic-services.com/what-we-do/catering-management-for-merchant-vessels/>. The page features a large banner image of hands slicing a tomato. The main content area includes a heading 'Catering Management for Merchant Vessels' and a quote 'Fuel moves your ship, food motivates your crew'. Below this is a paragraph about seafarers' needs and a link to 'Crew welfare & wellbeing'. To the right is a sidebar with a tree diagram showing various service categories like Catering Management, Services for the Cruise Industry, Offshore Services, etc. The footer contains the Oceanic logo and a 'Powered by Temp' logo.

Figure 2.3: Catering Management for Merchant Vessels

This website serves as a platform for promoting the facilities and services offered by the catering company. Figure 2.3 is a snapshot of the Catering Management for Merchant Vessels system. Leveraging their extensive catering expertise, they specialize in providing 40 million meals annually to seafarers, with a primary focus on commercial and merchant vessels operating at sea. [4] Their offerings encompass a range of features and benefits, including:

- (1) Accommodating Diverse Dietary Requirements: The catering service recognizes and incorporates the diverse cultural, religious, and ethnic dietary needs of the seafaring community. They ensure that their supply and replenishment chain is demand-driven, catering to the specific requirements of individuals.
- (2) Emphasizing Safe Hygiene Practices: The website highlights the commitment to safe and hygienic practices in catering operations. The catering crew undergoes thorough training to uphold proper hygiene standards, ensuring the safety and well-being of all seafarers consuming their meals.
- (3) Minimizing Wastage through Effective Stock Administration: The company prioritizes efficient stock administration to minimize wastage. By implementing sound inventory management practices, they optimize the utilization of resources, reducing unnecessary food waste and associated costs.
- (4) Providing Healthy and Well-Balanced Menus: The catering service offers menus that are designed to be healthy and well-balanced, aligning with nutritional guidelines. They consider the nutritional needs of seafarers, providing nourishing meals that contribute to their overall well-being and performance.
- (5) Continuous Training, Support, and Development: The Company is dedicated to the continuous training, support, and development of their catering crew. This ensures that the

staff is equipped with the necessary skills and knowledge to deliver high-quality catering services consistently.

(6) Access to a Technology Ecosystem: The website highlights the availability of a unique technology ecosystem that provides real-time statistics and feedback on various aspects of vessel procurement, performance, and quality monitoring. This technology-driven approach enhances efficiency, transparency, and data-driven decision-making in the catering operations.

(7) Guaranteed Victualing Budget: The catering service offers a guaranteed victualing budget throughout the year, ensuring financial consistency for their clients. This allows for better financial planning and cost management, providing stability and predictability in the catering expenditure.

d. Victualling Management System



Figure 2.4: Victualling Management system

This system focuses on handling various victualling-related functions for officers, including victualling in/out, menu preparation, and generating summary reports. Figure 2.4 is a snapshot of the Victualling Management system. Additionally, it incorporates health-related

features such as managing physical fitness, maintaining a balanced diet, analyzing health conditions, implementing safety precautions, and providing meal reminders through a virtual doctor component. [5]

However, it is important to note that the current system proposal does not meet the requirements of the SLN due to its emphasis on health-related functions and insufficient attention given to operational aspects such as stock maintenance, recovery management, and logistics. Managing the logistical aspects of providing meals to officers and sailors is a crucial factor, considering the significant allocation of government funds dedicated to this purpose. The current system lacks the functionality to adequately address funds management, which is an essential component of victualling operations.

2.4. Related Technologies

There are several related technologies that can be considered for the development of a Wardroom Victualling Management System. The choice of technologies may depend on various factors such as the specific requirements of the system, the infrastructure and resources available, and the expertise of the development team. Here are some technologies that could be suitable for implementing the system:

a. Web Development Frameworks

Using a web development framework such as ASP.Net, Django (Python), Ruby on Rails (Ruby), or Laravel (PHP) can provide a structured and efficient approach to building the system's web interface.

b. Database Management Systems

Utilizing a reliable and scalable database management system like MS SQL, MySQL, PostgreSQL, or MongoDB can efficiently store and manage the system's data.

c. Front-end Technologies

Employing front-end technologies such as HTML, CSS, and JavaScript, along with popular frameworks like React, Angular, or Vue.js, can enhance the user interface and interactivity of the system.

d. Authentication and Authorization

Implementing authentication and authorization mechanisms using technologies like OAuth, JSON Web Tokens (JWT), or session-based authentication can ensure secure access to the system's features and data.

e. Application Programming Interface (API) Development

Building an API using REST or GraphQL can facilitate seamless integration with other systems or enable the development of mobile applications.

f. Cloud Infrastructure

Leveraging cloud services like Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform can provide scalability, reliability, and cost-effectiveness for hosting the system.

g. Data Analysis and Reporting

Integrating data analysis and reporting tools such as Python libraries (Pandas, NumPy), visualization libraries (Matplotlib, D3.js), or business intelligence tools can generate meaningful insights and reports based on the system's data.

h. Mobile App Development

Developing mobile applications for iOS and Android platforms using technologies like React Native or Flutter can offer mobile access and convenience for officers and personnel involved in victimizing management.

Chapter 3 – Design Architecture

3.1. Introduction

The design phase of a system is undeniably one of the most crucial stages in the project development lifecycle. This phase plays a pivotal role in providing developers with a comprehensive and precise understanding of the system's architecture, functionality, and overall structure. By carefully crafting the system's design, developers can establish a solid foundation that guides them throughout the development process.

During the design phase, developers translate the project's requirements and specifications into a tangible blueprint, outlining the various components, modules, and interactions within the system. This systematic approach ensures that potential pitfalls and complexities are identified early on, enabling effective mitigation strategies to be implemented. Moreover, a well-defined design reduces the likelihood of errors and promotes more efficient coding, leading to a smoother and more organized development process.

Furthermore, the design documentation serves as a powerful communication tool between the development team and the clients or stakeholders. It presents a clear and concise representation of the envisioned system, aiding clients in understanding the project's scope, functionalities, and anticipated outcomes. This transparency helps in aligning expectations and building trust between all parties involved, fostering a collaborative and constructive development environment.

In summary, the design phase of a system is instrumental in establishing a strong foundation for project development. Its simplicity and accuracy empower developers to build the system efficiently, while its ability to communicate the project's vision to clients ensures that everyone involved is on the same page. By investing time and effort in the design phase, project teams can set the stage for a successful and well-executed system development process.

3.2. Related Design Strategies

Design strategies for a Wardroom Victualing Management System should focus on ensuring efficient and organized management of victualing and related processes. Here are some related design strategies that can be applied:

Modularity and Component-based Design: Breaking the system into modular components, such as Stock management, Menu preparation, Meal attendance, item sale, Final monthly recovery and reporting, to promote maintainability and reusability.

Database Design: Designing a well-structured and normalized database schema to store relevant information like food items, quantities, prices, menus, meal attendance, menu sale item data transaction and historical data.

User-Centered Design: Understanding the needs and workflows of the users (e.g. Store Assistants, Catering Assistants, Mess Assistants, Supply Assistants and officers) to create an intuitive and user-friendly interface.

Recovery Management: This section encompasses various functions that contribute to accurate cost calculations and the generation of the final recovery for the individual officer.

Reporting and Analytics: Providing comprehensive reporting and data analytics capabilities to analyze consumption patterns, identify trends, and support decision-making.

Security and Access Control: Implementing role-based access control to restrict access to sensitive information and ensure data security.

Scalability and Performance: Designing the system to handle a growing number of users and data without compromising performance.

Audit Trail and Logging: Implementing audit trail features to track changes made to food inventory and other critical data, ensuring accountability and transparency.

Data Backup and Recovery: Implementing robust backup and recovery mechanisms to safeguard against data loss.

By incorporating these design strategies, a Wardroom Victualing Management System can streamline processes, reduce manual efforts, improve efficiency, and enhance overall food management in a naval environment.

3.3. System Architecture

The system design architecture focuses on optimizing essential quality features like performance, security, and management. It also entails identifying well-structured solutions that fulfill all technical and operational requirements. This process involves making numerous decisions based on a diverse range of factors, and each choice significantly influences program quality, performance, maintenance, and overall success.

Proposed System Architecture

The Wardroom Victualing Management system is an efficient and accessible web-based solution hosted on a centralized server situated at the Head Office of the Sri Lanka Navy (SLN). This robust system facilitates connectivity across the entire island through the utilization of web services. By employing web services, various naval establishments and units can seamlessly interact with the centralized server, enabling real-time data exchange and synchronization.

With the system deployed on the centralized server, authorized personnel can effortlessly access the Metering system from any location within the SLN's intranet network. By using standard web browsers, individuals can conveniently and securely navigate the system's interface, making it easily accessible and user-friendly for all authorized users.

This architecture allows for efficient management of the Wardroom's victualing requirements, as data is centralized, and system updates can be swiftly disseminated to all connected nodes. The web-based nature of the solution ensures flexibility, scalability, and ease of maintenance, making it conducive to accommodate future enhancements and adaptations.

This integrated approach, the Wardroom Victualing Management system stands as a cutting-edge solution, revolutionizing the naval establishments' victualing procedures and fostering enhanced efficiency and seamless collaboration across the SLN's island-wide operations.

The subsequent diagram visually depicts the network transmission within the SLN Data Center (Figure 3.1).

Access URL - <http://wvics.navy.lk/>

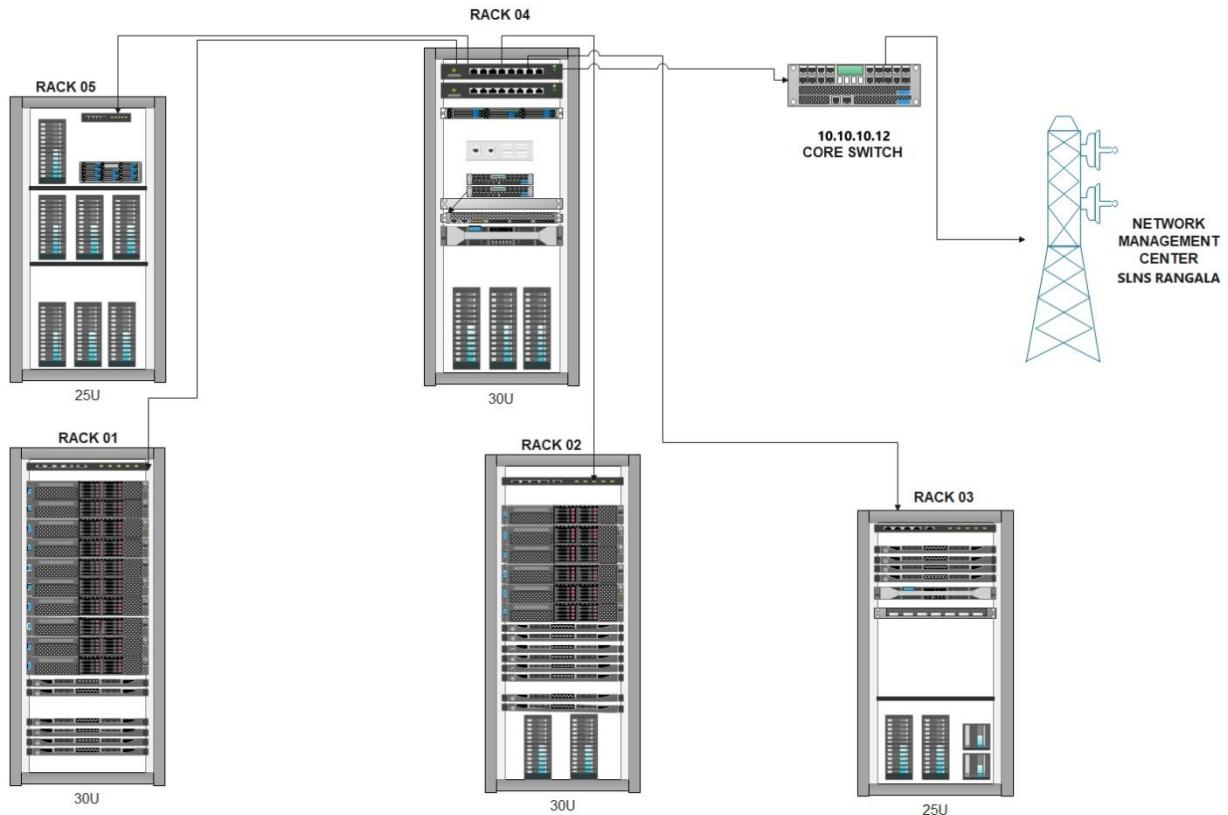


Figure 3.1 – SLN Data Center Server Diagram

The Following diagrams illustrate the step by step processing the Wardroom Victualing Management system via the intranet at both the NHQ level (Figure 3.2) and within specific naval areas (Figure 3.3).

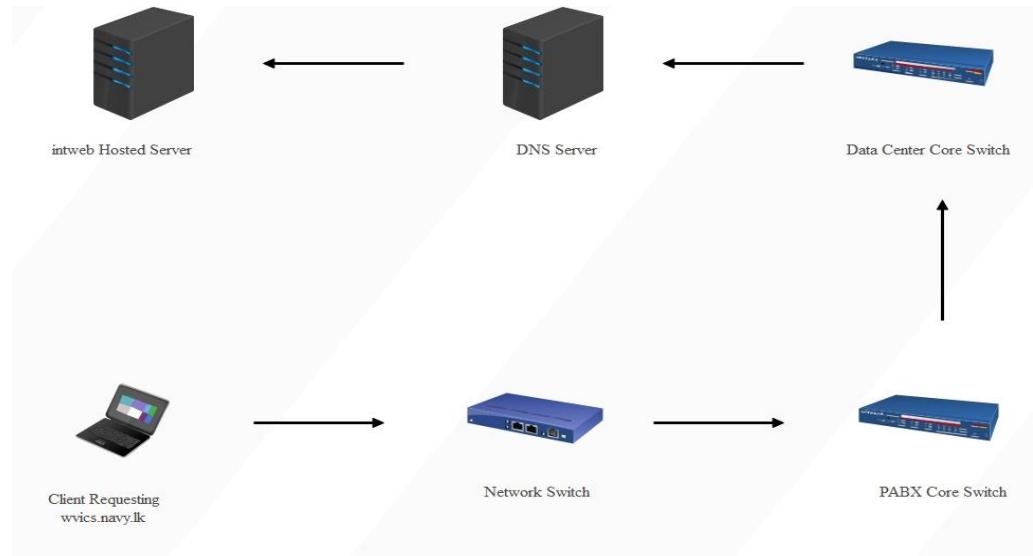


Figure 3.2 – Diagram of NHQ Client Accessing Internal Server

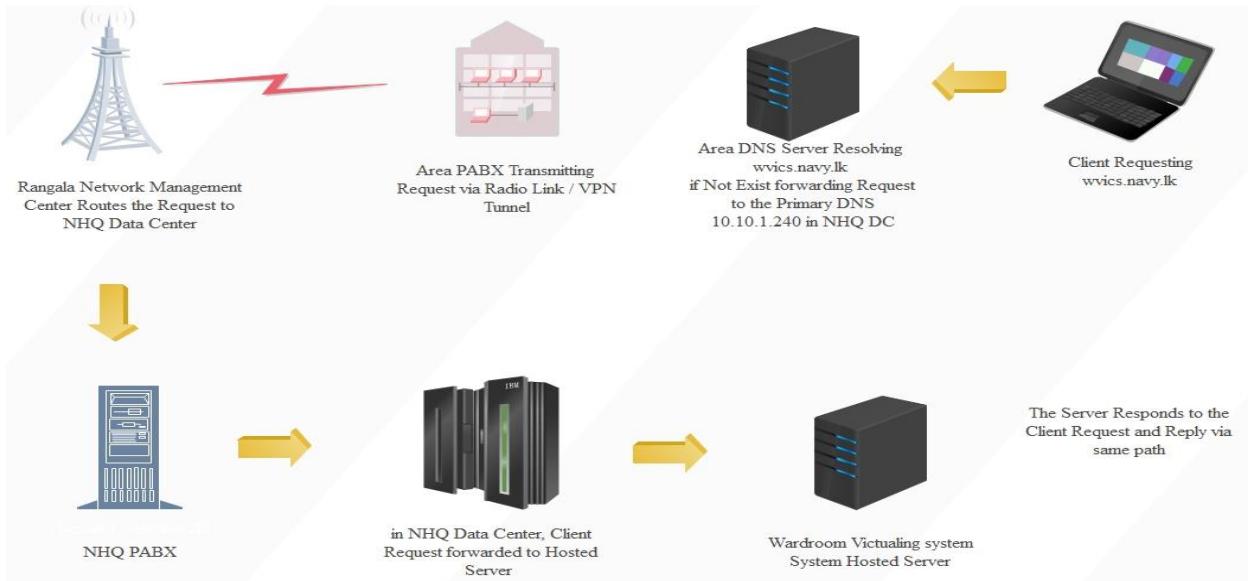


Figure 3.3 – Diagram of Other Area Client Accessing Internal Server

3.3.1. System users

Based on the comprehensive requirements identified during the meticulous analysis phase, the system's design should adopt a supportive approach that centers on user validation and seamless functionality execution. Following the thorough delineation of requirements and organizational measures, a strategic decision was made to implement a user hierarchy comprising five distinct levels, each serving specific roles and responsibilities.

The user levels are structured to accommodate a diverse range of operational needs and access permissions, ensuring that the system remains efficient, secure, and well-organized. A visual representation of the user levels is presented in Figure 3.4, providing a clear and succinct depiction of the hierarchical structure.

With this well-defined user hierarchy in place, the system achieves a fine balance between user empowerment and data security, catering to the varying demands and responsibilities of different user roles. This strategic approach fosters a cohesive and efficient system, enriching the user experience and streamlining operations across the organization.



Figure 3.4 - User levels

Store Assistants

In the Victualing Management System, Store Assistants play a crucial role in ensuring the smooth and efficient operation of the food supply process. Their primary responsibilities revolve around managing the inventory of food supplies, ensuring their availability, and supporting the provisioning of meals for naval personnel. The Store Assistants work closely with other stakeholders, such as chefs, stewards, and officers, to facilitate seamless victualing operations within the naval establishments.

Key responsibilities of Store Assistants in the Victualing Management System may include:

Stock Management: Maintaining accurate records of food supplies, monitoring stock levels, and replenishing items as needed.

Record-Keeping: Maintaining accurate and up-to-date records of stock movements and transactions.

Catering Assistants

They are able to create different menu plans for Main menus, Party menus, and Group menus with proper authorization. CA is able to add ingredients to different kind of menus.

Further, they are assisting in monitoring food stock levels and informing relevant personnel when supplies need to be replenished.

Mess Assistants

They mark officers' meal preference using the system by indicating in/out for breakfast, lunch and dinner and special requirements.

Supply Assistants

Supply assistants doing all the calculations and recovery preparation module. **Further,** Supply Assistant is able to calculate the menu cost for each individual officer with different menu and cost per head. Create the final recovery with SA using different authorization and upload process.

Officers

Officers are able to view credit and debit status for a given period of time and all officers are able to view a summary of overall victualing consumption.

System Administrator

In the Victualing Management System, the role of the System Administrator is critical in ensuring the smooth and secure operation of the entire system. System Administrators are responsible for managing and maintaining the technical aspects of the system, including hardware, software, network, and security infrastructure. They play a crucial role in supporting the efficient functioning of the Victualing Management System, enabling seamless access and data integrity for all users.

Key responsibilities of the System Administrator in the Victualing Management System may include:

System Setup and Configuration: Installing and configuring the Victualing Management System software and related applications on servers and client devices.

Database Management: Setting up and managing the system's database to store and retrieve data accurately and efficiently.

User Management: Creating and managing user accounts with appropriate access rights and permissions based on their roles and responsibilities.

System Monitoring and Maintenance: Regularly monitoring the system's performance and addressing any technical issues or glitches promptly to ensure uninterrupted operation.

Data Backup and Recovery: Implementing a robust data backup strategy to safeguard critical information and ensuring the ability to restore data in case of data loss or system failure.

Security Management: Implementing and maintaining security measures, including firewalls, encryption, and access controls, to protect sensitive data and prevent unauthorized access.

Software Updates and Patches: Ensuring that the system's software, applications, and operating systems are up-to-date with the latest patches and security updates.

Network Administration: Managing the network infrastructure to maintain reliable connectivity between the central server and connected client devices.

User Support and Training: Providing technical support to users and conducting training sessions to familiarize them with the system's functionalities.

System Performance Optimization: Monitoring system performance and identifying opportunities for optimization to enhance overall efficiency.

System Integration: Collaborating with Human Resource Management System (HRMS) to integrate the Victualing Management System.

Disaster Recovery Planning: Developing and implementing a disaster recovery plan to ensure system availability and data continuity in case of unforeseen events.

3.4. UML diagrams

Unified Modeling Language (UML) is a standardized visual language used in software engineering to model, design, and document software systems. It provides a set of graphical notations for representing different aspects of software systems, making it easier for software developers, designers, and stakeholders to communicate and understand the structure and behavior of a system.

The UML was chosen as the modeling language for the proposed solution. UML is recognized throughout the industry as the best software development modeling language.

UML diagrams enhanced the amalgamation between structural models and behavior models. They have the ability to define hierarchies and break down software systems into components and subcomponents.

Following diagrams are generated to define the design of Wardroom Victualing Management System.

Functional diagram

- Use Case Diagram

Structural diagram

- Class Diagram

3.4.1. Use Case Diagram

These illustrate the interactions between the system and its users or external entities. They focus on the functional requirements of the system and help to identify different use cases and scenarios.

In UML Use case diagram identified as a behavior or dynamic diagram. This diagram uses Actors and the Use case to model the functionalities of the system. Actors are users that participated in the processes of the system and Use cases are set of actions, services and function that system performed. Here the Use Case diagram is shown in this figure (Figure 3.5).

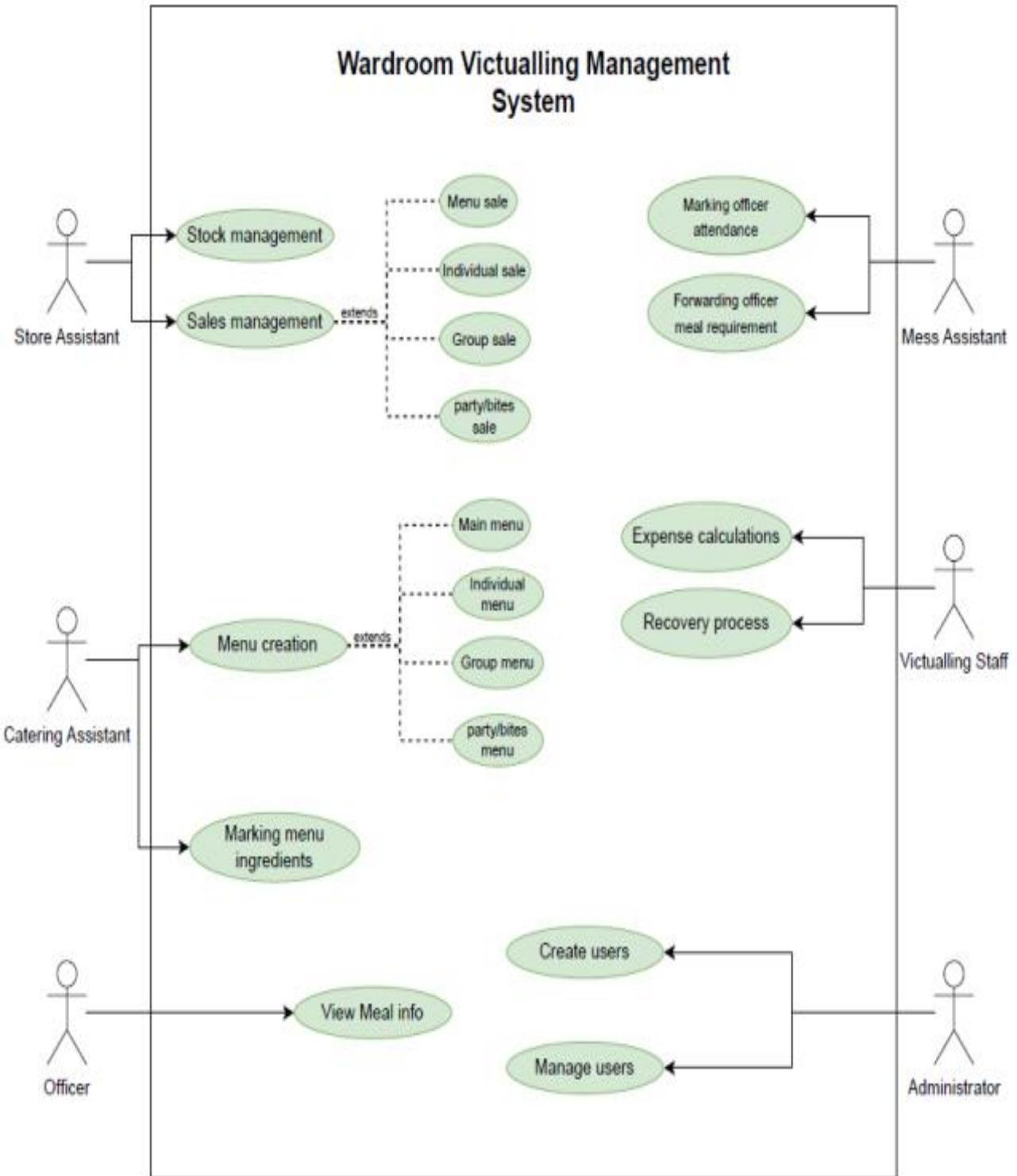


Figure 3.5 - Use Case Diagram

3.4.2. Class Diagram

A class diagram is a structural diagram. This represents the static structure of the program. Class diagram shows those classes and their attributes and operations. It also represents the relationships among the classes

Class diagrams offer a powerful means to visualize the architecture of a software system before its actual implementation. They assist developers, designers, and stakeholders in comprehending the structure and relationships within the system, thus facilitating better communication, design decisions, and overall system understanding. By capturing the static structure and connections of a program's components, class diagrams serve as an indispensable tool for designing robust, maintainable, and scalable software systems.

The figure (Figure 3.6) shows the class diagram of the system

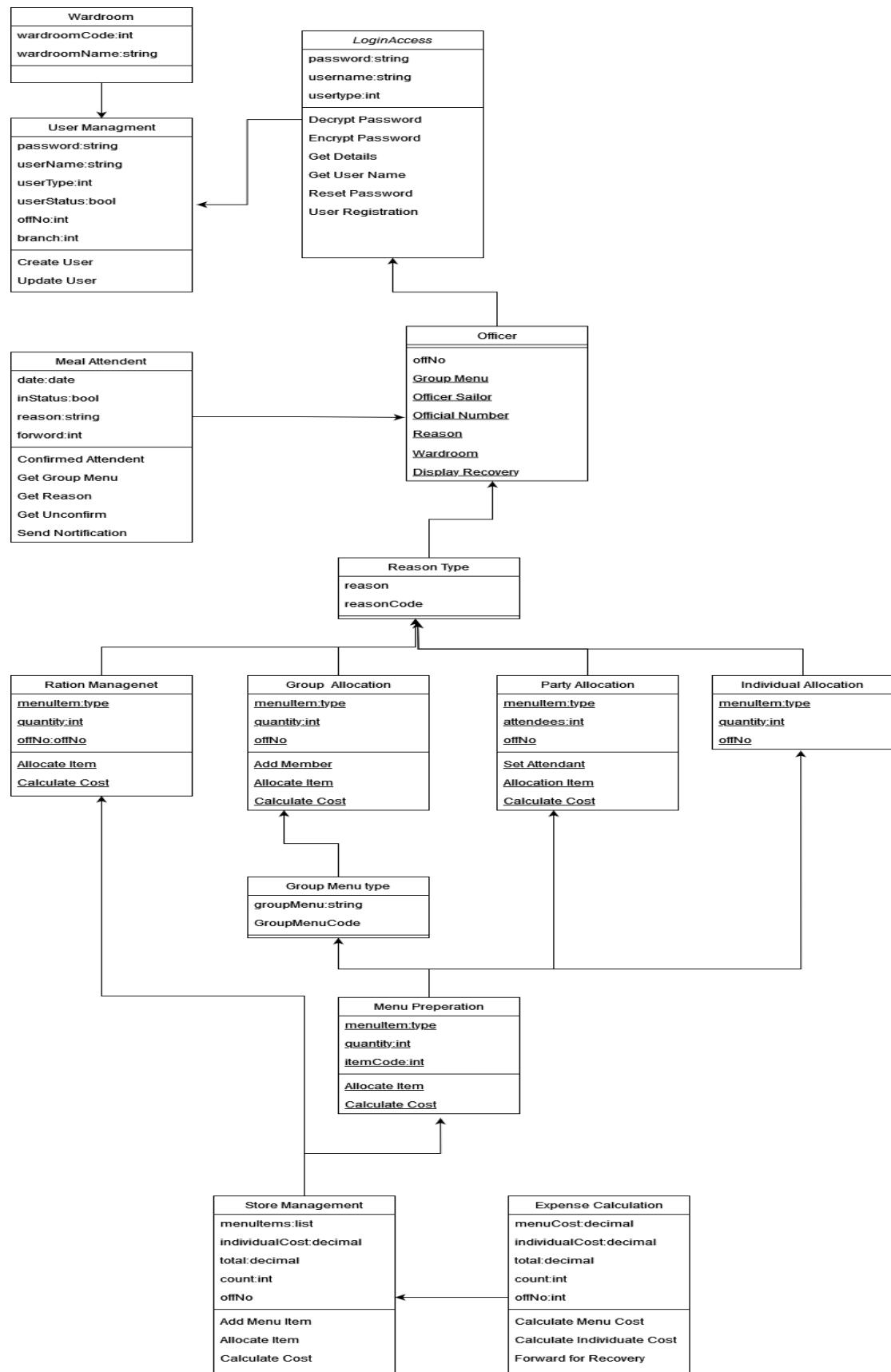


Figure 3.6 – Class Diagram

Chapter 4 – Implementation

4.1. Introduction

This chapter delves into the execution of system development, elucidating the distinct components comprising the victualing management system alongside their respective functions. Furthermore, it offers a succinct overview of the functionality and utilization of each system.

4.2. Approach

To expedite the system's development process, the Victualing Management System is segmented into various modules.

- a. Stock Management Module
- b. Menu Preparation Module
- c. Meal Attendance Module
- d. Menu Sale Module
- e. Item Sale Module
- f. Final Monthly Recovery Preparation Module

With a modular-based approach, it is ensured that the system accurately encompasses all functionalities.

4.2.1. Stock Management Module

Central to the project's efficiency and success, the Stock Management section stands as a pivotal cornerstone, orchestrating the intricate web of stock-related activities with precision. Entrusted to the capable oversight of Store Assistants, this section assumes a paramount role in ensuring the smooth flow of inventory operations. Within its domain lie a multitude of essential functions, each contributing to the seamless management of stock resources. From the meticulous

tracking of inventory levels to the timely replenishment of supplies, the Stock Management section serves as the nerve center, diligently managing every aspect of stock control. Furthermore, it facilitates the coordination of incoming and outgoing stock movements, streamlining logistics processes and minimizing disruptions. In essence, the robust framework of functions housed within this section not only ensures the availability of goods but also optimizes resource utilization, thereby bolstering the project's overall efficiency and effectiveness.

- a. Create new item
- b. On charge 309 annual price list
- c. Stock on charge (Cash/309)
- d. Edit, Delete stock items
- e. Reports

Through the integration of these critical functions into the Stock Management section, the project endeavors to enhance the efficiency and effectiveness of stock-related operations. By facilitating precise inventory control, streamlined financial management, and robust reporting capabilities, these functionalities serve to bolster the project's overarching objectives. Central to the success of this endeavor is the pivotal role played by Store Assistants. Their dedication and proficiency are indispensable in upholding the accuracy, accessibility, and overall management of stock items within the wardroom victualing system, thereby contributing significantly to the project's success and operational excellence.

4.2.2.Menu Preparation Module

At the core of the project lies the indispensable Menu Preparation section, overseen by the diligent Catering Assistants. Their responsibilities encompass the meticulous crafting of diverse menu plans, including Main menus, Party menus, and Group menus, all while adhering to prescribed authorization protocols. Moreover, Catering Assistants possess the flexibility to augment menu items with additional ingredients, ensuring culinary diversity and creativity. Furthermore, officers are accorded the privilege of tailoring menus to suit their preferences, should they opt against adhering to the suggested menu provided by the wardroom. Within this section, the following functions are encapsulated:

- a. Create New Menu Item
- b. Add Ingredients for Menu Item
- c. Edit/Delete Ingredients for Menu Item
- d. Create New Menu/Group Menu/Party Menu
- e. Change Menu Items by Authorized Person
- f. Reports

By integrating these functions into the Menu Preparation section, the project endeavors to enrich officers' dining experiences with flexibility and customization options, while ensuring efficient ingredient management and streamlined menu planning. The Catering Assistants' dedicated efforts uphold a diverse and meticulously organized menu selection tailored to meet the officers' preferences and dietary requirements.

4.2.3.Meal Attendance

The Meal Attendance section stands as a cornerstone of the project, meticulously overseen by the adept Mess Assistants. Charged with the task of managing officers' meal preferences, they navigate the intricacies of the system with finesse. Officers, in turn, enjoy the seamless convenience of reserving their meals online, specifying their preferences for breakfast, lunch, and dinner whether they'll be dining in or out. Within this pivotal section, the daily consumption of meals is meticulously documented, furnishing vital statistics such as total headcount and nuanced variations in meal choices. Here's an in-depth look at one of the functions encapsulated within this critical section:

- a. Menu Individual Meal Attendance
- b. Main Menu Meal Attendance – Bulk
- b. Update/Delete Meal Attendance
- c. Update/Delete Meal Attendance
- d. Group Menu Attendance
- e. Reports

By integrating these functions into the Meal Attendance section, the project endeavors to enhance the efficiency and accuracy of recording and managing officers' meal preferences and attendance. Mess Assistants, with their pivotal role, serve as guardians of precise and up-to-date meal attendance records, fostering seamless meal planning and delivering a superior dining experience to officers.

4.2.4. Sale of Menu Items

- a. Main Menu Sales
- b. Group Menu Sales
- c. Customized Menu Sales
- d. Extra Items Sales
- e. Party Items Sales
- f. Other Sales
- g. Reports

4.2.5. Sale of Individual Items

- a. Individual Personal/Credit Item Sales
- b. Group Dry Items Sales
- c. Reports

4.2.6. Final Monthly Recovery Preparation

The Item Sale segment within the wardroom victualing management system is an integral component meticulously administered by Supply Assistants. Their responsibility extends to overseeing a critical section dedicated to calculations and recovery preparation, pivotal for ensuring the accuracy and efficiency of the system. Within this section, Supply Assistants wield a range of functions designed to facilitate precise cost calculations and the seamless generation of the final recovery. These functions encompass a variety of tasks essential to the financial integrity of the victualing operations. Supply Assistants meticulously execute these functions to guarantee

meticulous cost assessment, streamlined recovery generation, and adherence to financial protocols. Through their diligent efforts, Supply Assistants uphold the financial robustness and operational excellence of the wardroom victualing management system.

- a. Calculate Cost per Meal and Authorization
- b. Upload 304 List and Authorization
- c. Upload Bar Recovery and Authorization
- d. Get Monthly Officer List and Authorization
- e. Authorize Cost
- f. Get Individual Monthly Cost and Authorization
- g. Upload Mess Substitute and Authorization
- h. Get Final Recovery
- i. Reports

Integration with the Human Resource Management System (HRMS) is paramount for effective communication and data exchange between systems. By integrating with the HRMS, the wardroom victualing management system gains access to officers' personal details and appointment information, facilitating seamless operations and data synchronization between systems.

4.3. User Interface Designing

The Victualing Management System is supported by a range of interfaces meticulously designed to facilitate its core functionalities. These interfaces serve as the backbone of the system, enabling seamless operation and efficient management of victualing activities. Each interface is purposefully crafted to cater to specific needs, ensuring that users can interact with the system effectively. Through these interfaces, users can access features such as menu management, inventory tracking, sales processing, and reporting. Together, these interfaces form an integrated ecosystem that empowers users to streamline victualing operations and enhance overall efficiency.

The design of the user interface plays a significant role in the overall design process, as it serves as the direct point of interaction between users and the system. Utilizing effective user

interface design techniques is crucial, considering that users engage directly with these interfaces. To kick-start the design process, I picked for the paper-based user interface design technique. This approach offers several advantages, such as facilitating the exploration of initial UI concepts and providing a clear understanding of navigation paths. Additionally, paper-based prototypes enable swift modifications throughout the implementation phase, ensuring flexibility and responsiveness to evolving requirements. The figures below depict the primary user interfaces crafted through the use of paper prototypes.

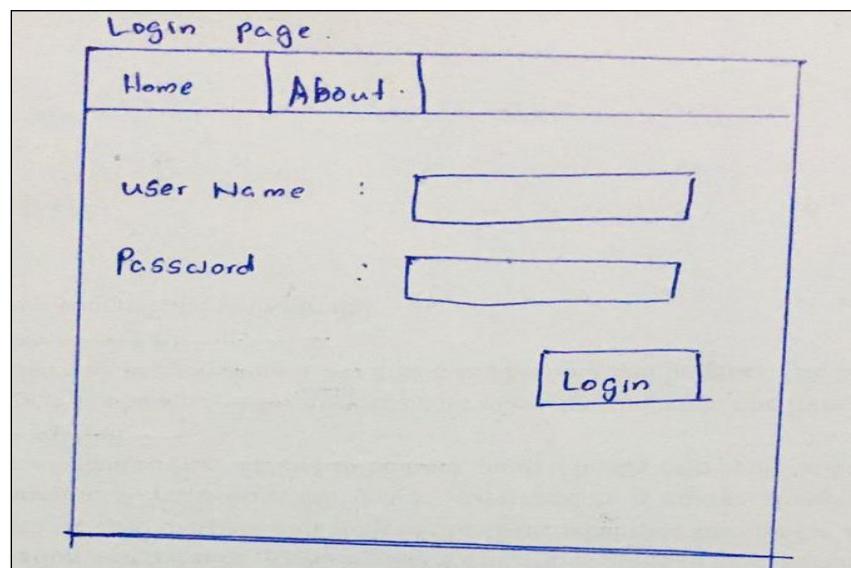


Figure 4.1: Login Prototype

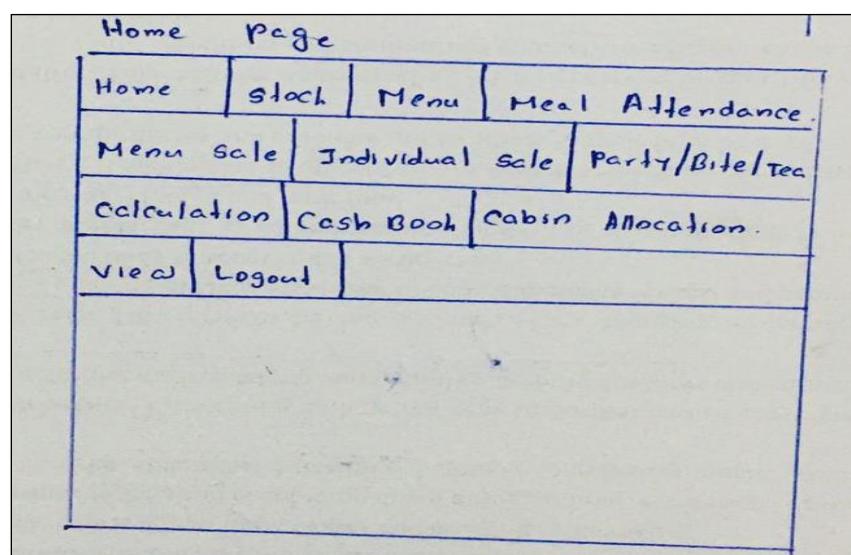


Figure 4.2:
Prototype

Add stock item

Home	Stock
------	-------

Search Existing Items in Stock.

Item Description :

Add New Item.

Item Code :

Item :

Item Category :

Item Measurement :

Wardroopm :

Home

Figure 4.3: Add Stock Item Prototype

Add 309 Price List

Add 309 Price List	
Wardroom :	<input type="text"/> NHA
On charge date :	<input type="text"/> <input type="button" value="Calendar"/>
Year :	<input type="text"/> ..Select.. <input type="button" value="o"/>
Received From: 309	
Item Category :	<input type="text"/> -- select -- <input type="button" value="o"/>
Item :	<input type="text"/> <input type="button" value="o"/>
Unit Price :	<input type="text"/>
Denomination :	<input type="text"/>
Item Measurement :	<input type="text"/> ..Select.. <input type="button" value="o"/>
<input type="button" value="Add.."/>	

Figure 4.4: Add 309 Price List Prototype

~~Stock~~ Add Stock Item

Wardroom :	<input type="text"/> NHA
On charge Date :	<input type="text"/> <input type="button" value="Calendar"/>
Received From :	<input type="text"/> - Select ... <input type="button" value="v"/>
Bill No :	<input type="text"/>
Item category :	<input type="text"/> -- Select ... <input type="button" value="v"/>
Item :	<input type="text"/> <input type="button" value="o"/>
Unit Price :	<input type="text"/>
On charge Qty :	<input type="text"/>
Item Measurement :	<input type="text"/> <input type="button" value="o"/>
Reason :	<input type="text"/> <input type="button" value="o"/>
<input type="button" value="Add Item.."/>	
Bill Discount / Rounding off :	
<input type="text"/> <input type="button" value="Add Item.."/>	

Figure 4.5: Add Stock Item Prototype

Add New Menu Item.

Search Existing Menu Items.

Menu Item Description :

Add New Menu Item.

Menu Item Code :

Menu Item :

Menu Item Category :

Wardroom :

Figure 4.6:
New Menu
Item
Prototype

Add

Add Ingredients.

Wardroom :

Meal category :

Meal :

Item category :

Qty Item :

Item Measurement :

Qty :

Item Measurement :

Figure 4.7:
Add
Ingredients
Prototype

Create Menu.

Date :	<input type="text"/>	<input type="button" value="Calendar"/>										
Wardroom :	<input type="text"/> NAG											
Reason :	-- Select -- <input type="button"/>											
Vegetarian / Non Vegetarian :	-- Select -- <input type="button"/>											
Group Type :	Normal Menu. <input type="button"/>											
Meal category:	-- Select -- <input type="button"/>											
Meal :	<input type="text"/> <input type="button"/>											
Cost for Menu :	<input type="text"/>											
<input type="button" value="Add Menu to list"/>												
<table border="1"><thead><tr><th>Meal ID</th><th>Meal Category</th><th>Meal Item</th><th>Remark</th><th>Remove</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td></tr></tbody></table>			Meal ID	Meal Category	Meal Item	Remark	Remove					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Meal ID	Meal Category	Meal Item	Remark	Remove								
				<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>								
<input type="button" value="Add Menu"/>												

Figure 4.8: Create Menu Prototype

Menu Authorization.

Select Date :	<input type="text"/>	<input checked="" type="checkbox"/>
Reason :	<input type="text"/>	<input checked="" type="checkbox"/>
Group :	<input type="text"/>	<input checked="" type="checkbox"/>
Vegetarian / Non Vegetarian	<input type="text"/>	<input checked="" type="checkbox"/>
Wardroom :	<input type="text"/> NHA	<input type="button" value="View Menu"/>
<input type="checkbox"/> Checked.		

Figure 4.9: Menu Authorization Prototype

Menu Item Sale.

Sale Date :	<input type="text"/>	<input type="button" value="grid"/>						
Reason :	<input type="button" value=" o "/>							
Group type :	<input type="button" value="Normal Menu o "/>							
Vegetarian / Non - Vegetarian :	<input type="button" value=" o "/>							
Wardroom :	<input type="button" value="NHA ."/>	<input type="button" value="View Menu ."/>						
Menu (Show! in grid view).								
View ingredients list (link button).								
Sr No	Item Category	Item	Remarks .					
Total Non - Veg Count :		<input type="button" value=" o "/>						
Total veg count :		<input type="button" value=" o "/>						
Total ingredients list (link button)								
Sr.No	Ingredients	Qty for Menu	Current Stock	Item Measurement .				
Get Ingredients Deduction List (link button).								
ID	Item ID	Item	From	Price	Mesu	Stock Qty	Sale Qty	Current Qty
<input type="button" value="Get Hand Stock"/>								
<input type="button" value="update Stock"/>				<input type="button" value="Save ."/>				

Figure 4.10: Menu Item Sale Prototype

Personal Item Sale.

		Image																	
Official Number	:	<input type="text"/>																	
Service Type	:	..Select.. <input checked="" type="checkbox"/>																	
of	:	<input type="button" value="Officer"/>	<input type="button" value="View person.."/>																
Rank	:	<input type="text"/>																	
Name	:	<input type="text"/>																	
Permanent Base	:	<input type="text"/>																	
Service T																			
Sale Date	:	<input type="text"/>	<input type="button" value="Calendar"/>																
Reason	:	..Select.. <input type="checkbox"/>																	
Wardroom	:	<input type="text" value="N HQ.."/>																	
Bill No	:	<input type="text"/>																	
Item Category	:	..Select.. <input type="checkbox"/>																	
Item	:	<input type="text"/> <input type="checkbox"/>																	
<table border="1"> <thead> <tr> <th>Item ID</th> <th>Item</th> <th>From</th> <th>Price</th> <th>Mesu</th> <th>Stock Qty</th> <th>Sale Qty</th> <th>Current Qty</th> </tr> </thead> <tbody> <tr> <td> </td> </tr> </tbody> </table>				Item ID	Item	From	Price	Mesu	Stock Qty	Sale Qty	Current Qty								
Item ID	Item	From	Price	Mesu	Stock Qty	Sale Qty	Current Qty												
<input type="button" value="Get Hand Stock.."/> <input type="button" value="update stock"/>																			

Figure 4.11: Personal Item Sale Prototype

Individual Meal Recovery By per Month.



Official No :

Service Type :

--Select--

View Person

Rank :

Name :

Permanent Base :

} lbt.

Year :

--Select--

Month :

--Select--

Wardroom :

NHQ

View Details

Menu Cost :

Sr No	Meal Date	Cost	Meal Count	Remarks

Total Menu Cost :

Extra cost :

Sr No	Sale Date	Item	Unit Price	Sale Qty	Meas.	Price.

Extra total cost :

party/Bite Cost :

Sr No	Party Date	Party	Cost per Head.

Total Party/Bite Cost :

Tea Cost :

Sr No	Tea Date	Tea type	Tea Count.

Individual Total cost :

Figure 4.12: Individual Meal Recovery per Prototype

4.4. Tools and Technology Used

1. Client layer - Any web browser (HTML)

The choice of using any web browser as the client layer, primarily through HTML, offers wide compatibility and accessibility. HTML is a standard markup language understood by all modern web browsers, ensuring that users can access the system from various devices and platforms without the need for additional software installations. This approach promotes ease of use and broadens the system's reach to a diverse user base.

2. Server layer - Visual C# .NET Framework 4.0

Visual C# .NET Framework 4.0 was selected for the server layer due to its robustness, scalability, and comprehensive development tools. The .NET Framework provides a rich set of libraries and APIs for building powerful server-side applications. Visual C# is particularly advantageous for its ease of use, strong typing, and extensive support for object-oriented programming paradigms, making it well-suited for developing complex server-side logic.

3. Database layer - Microsoft SQL server 2012

Microsoft SQL Server 2012 was chosen for the database layer due to its reliability, performance, and advanced data management capabilities. SQL Server offers robust features for managing relational databases, including support for transactions, stored procedures, and data integrity constraints. Its integration with the .NET Framework simplifies data access and manipulation, facilitating seamless interaction between the server-side application and the database. Additionally, 99% of SLN databases work within SQL Server, making it easy to replicate data. Furthermore, this system needs to integrate with HRMS, which also runs through the SQL Server.

4. Programming language - C#, Java Script

C# and JavaScript were selected as the programming languages for their complementary roles in the project. C# is well-suited for server-side development, offering strong support for object-oriented programming, asynchronous programming, and memory management.

JavaScript, on the other hand, is essential for client-side scripting, enabling dynamic and interactive user experiences within web browsers. The combination of C# and JavaScript ensures a cohesive development approach, leveraging the strengths of each language for different aspects of the project.

4. Design Tools - Adobe Photoshop CS3

Adobe Photoshop CS3 serves as the design tool for creating visually appealing user interface elements and graphical assets. Photoshop offers a comprehensive set of features for image editing, graphic design, and prototyping, allowing designers to create mockups, wireframes, and visual concepts with precision and creativity. Its familiarity among designers, extensive customization options, and support for various file formats make it a popular choice for designing user interfaces that are both aesthetically pleasing and functional.

4.5. Major Code Segments

The system's code is organized into reusable modules. Below is a list of the major code modules along with a brief explanation of what each one does. Comments are included for the purpose of identifying specific code functionality.

4.5.1. Database Connection

All systems whether they are web-based or standalone, if the system is developed to serve the business, and the database must be integrated into it. Add, delete and update are the most important and basic actions in the system. If the above-mentioned actions are used in the system, the system must be connected to the database. The following code segments are used to connect the system with the related database.

```

<add key="CrystalImageCleaner-Age" value="120000"/>
</appSettings>
<connectionStrings>

<add name="ConnectionString" connectionString="Data Source=10.10.1.237;Initial Catalog=VICTULING;User Id=sa; password= SDUAdmin@2019" providerName="System.Data.SqlClient"/>
<add name="ConnectionString2" connectionString="Data Source=10.10.1.215 ;Initial Catalog=HRISLIVE;User Id=sa; password= SDUAdmin@2019" providerName="System.Data.SqlClient"/>
<add name="Excel03ConString" connectionString="Provider=Microsoft.Jet.OLEDB.4.0;Data Source={0};Extended Properties='Excel 8.0;HDR=YES'"/>
<add name="Excel07+ConString" connectionString="Provider=Microsoft.ACE.OLEDB.12.0;Data Source={0};Extended Properties='Excel 8.0;HDR=YES'"/>

</connectionStrings>
<system.web>
<pages validateRequest="true" />
<compilation debug="true" targetFramework="4.0">
<assemblies>
<add assembly="System.Design, Version=4.0.0.0, Culture=neutral, PublicKeyToken=B03F5F7F11D50A3A"/>

```

Figure 4.13: Database Connection Code

```

using System.Data.SqlClient;
using System.Configuration;
using VICTULING_DLL.Account;
using System.Data;

namespace victuling_WordRoom
{
    public partial class Login : System.Web.UI.Page
    {
        public static DataSet dst = new DataSet();

        string connectionString = ConfigurationManager.ConnectionStrings["ConnectionString"].ConnectionString;
        LoginAccess dataAccess = new LoginAccess();

        protected void Page_Load(object sender, EventArgs e)
        {
        }

        protected void btnLogin1_Click(object sender, EventArgs e)
        {
            try
            {
                if (txtUserName.Text == string.Empty)
                {
                    LabelErrorMsg.Text = "Please fill the UserName field, Details cannot be empty.";
                    LabelErrorMsg.ForeColor = System.Drawing.Color.Red;
                    return;
                }
                if (txtUserName.Text == string.Empty)
                {
                    LabelErrorMsg.Text = "Please fill the Password field, Details cannot be empty.";
                    LabelErrorMsg.ForeColor = System.Drawing.Color.Red;
                    return;
                }

                string userName = txtUserName.Text;
                string password = txtPassword.Text;
                string chekText = dataAccess.Decrypt(password, userName);

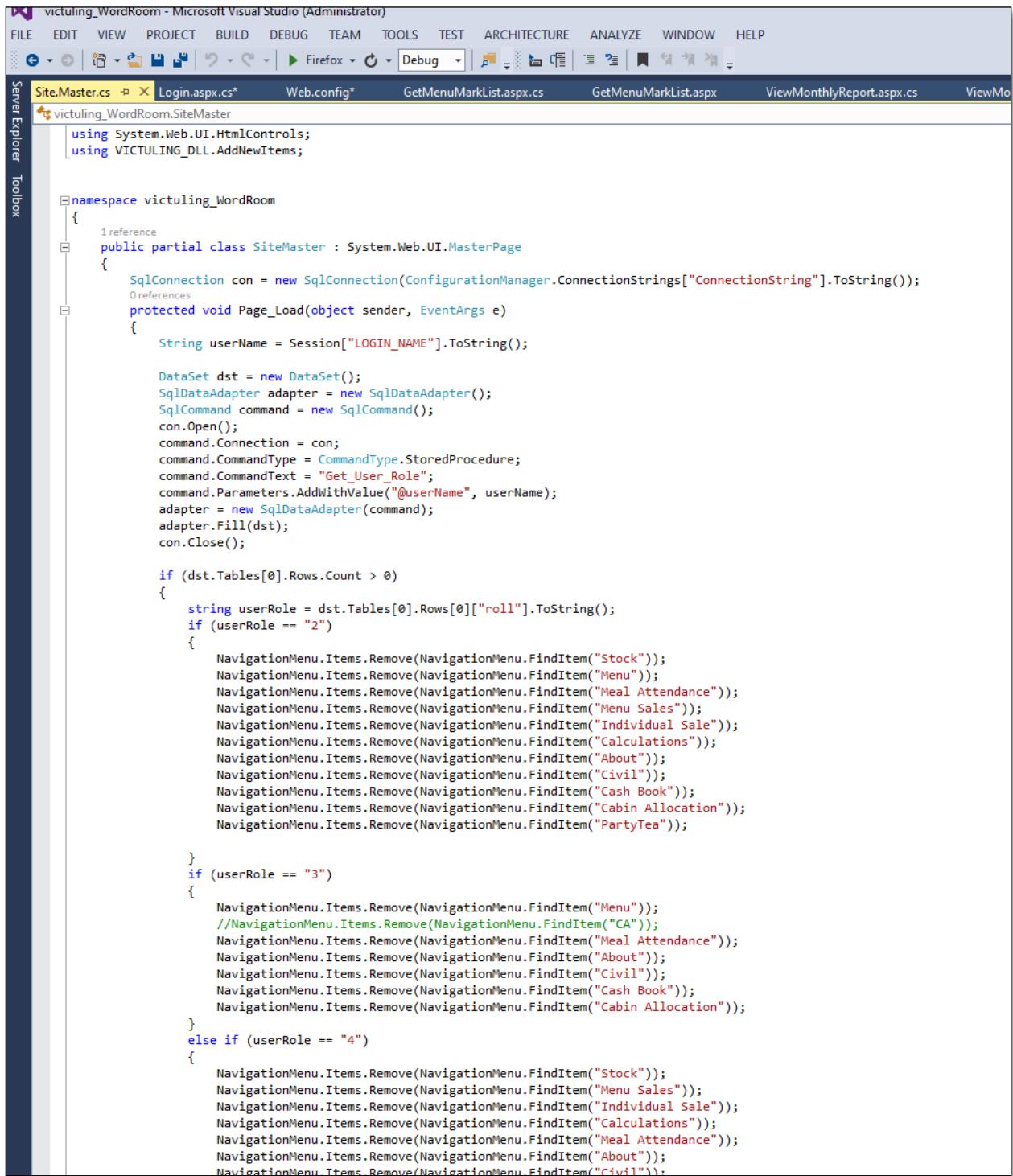
                if (chekText == "kal")
                {
                    Session["LOGIN_NAME"] = userName;
                    dst = dataAccess.getUserName(userName);
                    Session["wardRoomName"] = dst.Tables[0].Rows[0][1].ToString();
                    Session["wardRoomCode"] = dst.Tables[0].Rows[0][2].ToString();
                    Response.Redirect("About.aspx");
                }
                else
                {
                    txtUserName.Text = "";
                    txtPassword.Text = "";
                }
            }
        }
    }
}

```

4.5.2.Login Handling Page

Figure 4.14: Part of the Login Page Code

4.5.3.Master Page



The screenshot shows the Microsoft Visual Studio interface with the title bar "victuling_WordRoom - Microsoft Visual Studio (Administrator)". The menu bar includes FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, TOOLS, TEST, ARCHITECTURE, ANALYZE, WINDOW, and HELP. The toolbar has standard icons like back, forward, search, and file operations. A status bar at the bottom shows "77". The main window displays the code for "Site.Master.cs". The code is part of the "victuling_WordRoom" namespace and defines a partial class "SiteMaster" that inherits from "System.Web.UI.MasterPage". It contains a "Page_Load" event handler that retrieves a user's role from the session and removes specific menu items based on that role. The code uses SQL connections and command objects to execute a stored procedure named "Get_User_Role".

```
using System.Web.UI.HtmlControls;
using VICTULING_DLL.AddNewItems;

namespace victuling_WordRoom
{
    public partial class SiteMaster : System.Web.UI.MasterPage
    {
        SqlConnection con = new SqlConnection(ConfigurationManager.ConnectionStrings["ConnectionString"].ToString());
        protected void Page_Load(object sender, EventArgs e)
        {
            String userName = Session["LOGIN_NAME"].ToString();

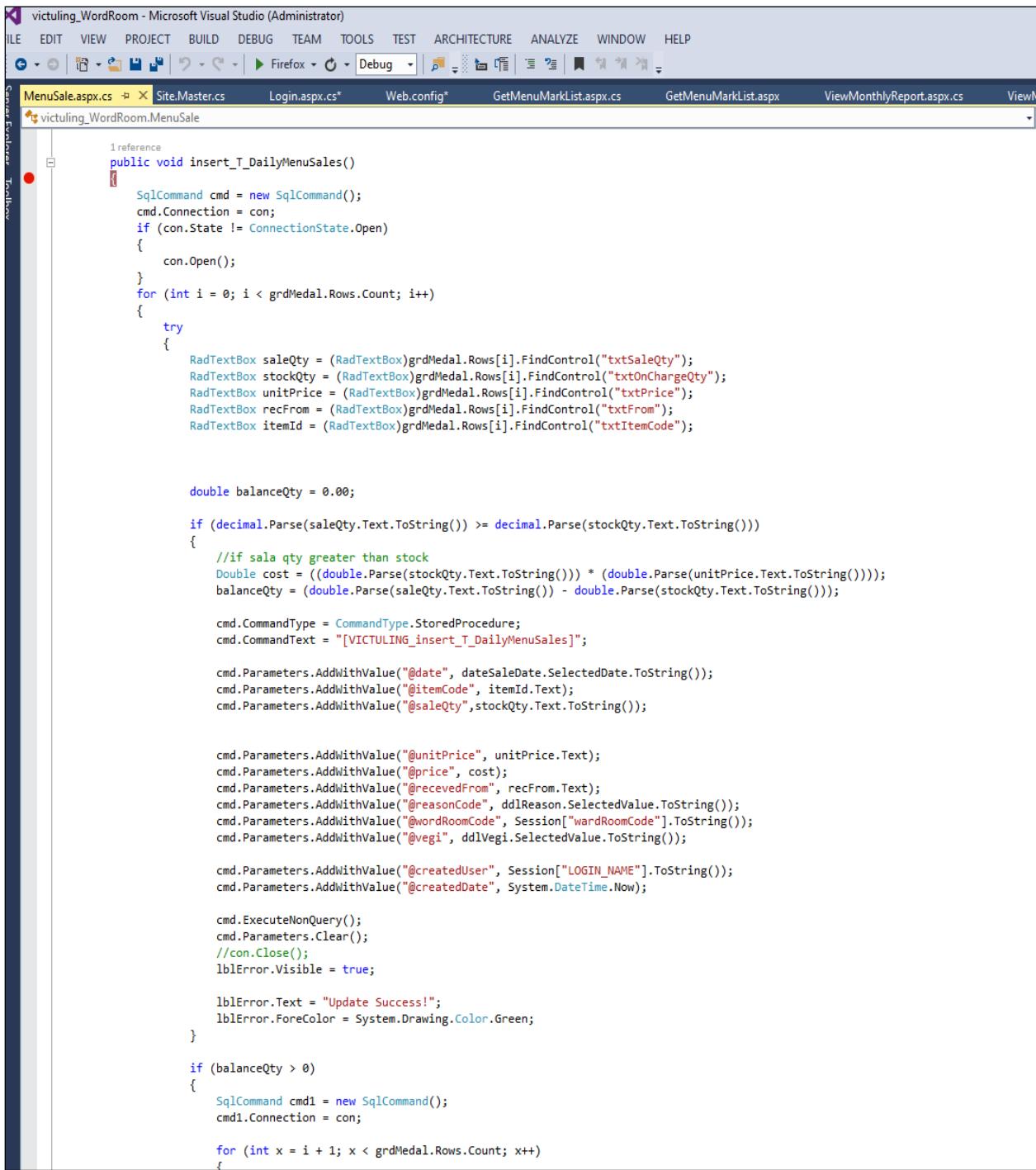
            DataSet dst = new DataSet();
            SqlDataAdapter adapter = new SqlDataAdapter();
            SqlCommand command = new SqlCommand();
            con.Open();
            command.Connection = con;
            command.CommandType = CommandType.StoredProcedure;
            command.CommandText = "Get_User_Role";
            command.Parameters.AddWithValue("@userName", userName);
            adapter = new SqlDataAdapter(command);
            adapter.Fill(dst);
            con.Close();

            if (dst.Tables[0].Rows.Count > 0)
            {
                string userRole = dst.Tables[0].Rows[0]["roll"].ToString();
                if (userRole == "2")
                {
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Stock"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Menu"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Meal Attendance"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Menu Sales"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Individual Sale"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Calculations"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("About"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Civil"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Cash Book"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Cabin Allocation"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("PartyTea"));

                }
                if (userRole == "3")
                {
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Menu"));
                    //NavigationMenu.Items.Remove(NavigationMenu.FindItem("CA"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Meal Attendance"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("About"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Civil"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Cash Book"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Cabin Allocation"));
                }
                else if (userRole == "4")
                {
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Stock"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Menu Sales"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Individual Sale"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Calculations"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Meal Attendance"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("About"));
                    NavigationMenu.Items.Remove(NavigationMenu.FindItem("Civil"));
                }
            }
        }
    }
}
```

Figure 4.15: Part of the Login Handling Master Page Code

4.5.4.Daily Menu Sale Page



The screenshot shows the Microsoft Visual Studio interface with the title bar "victuling_WordRoom - Microsoft Visual Studio (Administrator)". The menu bar includes FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, TOOLS, TEST, ARCHITECTURE, ANALYZE, WINDOW, and HELP. The toolbar has icons for file operations like Open, Save, and Print, along with a browser icon for "Firefox" and a dropdown for "Debug". The solution explorer on the left shows files like "MenuSale.aspx.cs", "Site.Master.cs", "Login.aspx.cs*", "Web.config*", "GetMenuMarkList.aspx.cs", "GetMenuMarkList.aspx", "ViewMonthlyReport.aspx.cs", and "ViewMonthlyReport.aspx". The code editor window displays the C# code for the "insert_T_DailyMenuSales" method:

```
1 reference
public void insert_T_DailyMenuSales()
{
    SqlCommand cmd = new SqlCommand();
    cmd.Connection = con;
    if (con.State != ConnectionState.Open)
    {
        con.Open();
    }
    for (int i = 0; i < grdMedal.Rows.Count; i++)
    {
        try
        {
            RadTextBox saleQty = (RadTextBox)grdMedal.Rows[i].FindControl("txtSaleQty");
            RadTextBox stockQty = (RadTextBox)grdMedal.Rows[i].FindControl("txtOnChargeQty");
            RadTextBox unitPrice = (RadTextBox)grdMedal.Rows[i].FindControl("txtPrice");
            RadTextBox recFrom = (RadTextBox)grdMedal.Rows[i].FindControl("txtFrom");
            RadTextBox itemId = (RadTextBox)grdMedal.Rows[i].FindControl("txtItemCode");

            double balanceQty = 0.00;

            if (decimal.Parse(saleQty.Text.ToString()) >= decimal.Parse(stockQty.Text.ToString()))
            {
                //if sala qty greater than stock
                Double cost = ((double.Parse(stockQty.Text.ToString())) * (double.Parse(unitPrice.Text.ToString())));
                balanceQty = (double.Parse(saleQty.Text.ToString()) - double.Parse(stockQty.Text.ToString()));

                cmd.CommandType = CommandType.StoredProcedure;
                cmd.CommandText = "[VICTULING_insert_T_DailyMenuSales]";

                cmd.Parameters.AddWithValue("@date", dateSaleDate.SelectedDate.ToString());
                cmd.Parameters.AddWithValue("@itemCode", itemId.Text);
                cmd.Parameters.AddWithValue("@saleQty", stockQty.Text.ToString());

                cmd.Parameters.AddWithValue("@unitPrice", unitPrice.Text);
                cmd.Parameters.AddWithValue("@price", cost);
                cmd.Parameters.AddWithValue("@receivedFrom", recFrom.Text);
                cmd.Parameters.AddWithValue("@reasonCode", ddlReason.SelectedValue.ToString());
                cmd.Parameters.AddWithValue("@wardRoomCode", Session["wardRoomCode"].ToString());
                cmd.Parameters.AddWithValue("@vegi", ddlVegi.SelectedValue.ToString());

                cmd.Parameters.AddWithValue("@createdUser", Session["LOGIN_NAME"].ToString());
                cmd.Parameters.AddWithValue("@createdDate", System.DateTime.Now);

                cmd.ExecuteNonQuery();
                cmd.Parameters.Clear();
                //con.Close();
                lblError.Visible = true;

                lblError.Text = "Update Success!";
                lblError.ForeColor = System.Drawing.Color.Green;
            }
            if (balanceQty > 0)
            {
                SqlCommand cmd1 = new SqlCommand();
                cmd1.Connection = con;

                for (int x = i + 1; x < grdMedal.Rows.Count; x++)
                {

```

Figure 4.16: Part of the Daily Menu Sale Code

4.5.5.Report – View Available Item List with Price

The screenshot shows the Microsoft Visual Studio interface with the following details:

- Title Bar:** Microsoft Visual Studio (Administrator)
- Menu Bar:** FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, TOOLS, TEST, ARCHITECTURE, ANALYZE, WINDOW, HELP
- Toolbar:** Standard icons for file operations like Open, Save, Print, etc.
- Toolbox:** Standard .NET development tools.
- Server Explorer:** Shows 1 reference to the ViewAvailableItemWithUnitPrice.aspx page.
- Code Editor:** Displays the C# code for the ViewAvailableItemWithUnitPrice.aspx.cs page. The code handles page loading, database connection, command execution, and grid binding. It also includes logic for item command handling and item data bound events.

```
using System.Configuration;
using System.Web.Security;
using System.Web.UI.WebControls.WebParts;
using System.Web.UI.HtmlControls;
using VICTULING_DLL.AddNewItem;

namespace victuling_WardRoom
{
    public partial class ViewAvailableItemWithUnitPrice : System.Web.UI.Page
    {
        public static String strConnString = System.Configuration.ConfigurationManager.ConnectionStrings["ConnectionString"].ConnectionString;
        SqlConnection con = new SqlConnection(ConfigurationManager.ConnectionStrings["ConnectionString"].ToString());

        protected void Page_Load(object sender, EventArgs e)
        {
            if (!Page.IsPostBack)
            {
                String userName = Session["LOGIN_NAME"].ToString();

                con.Open();
                SqlCommand command = new SqlCommand();
                SqlDataAdapter adapter = new SqlDataAdapter();
                DataSet ds = new DataSet();

                command.Connection = con;
                command.CommandType = CommandType.StoredProcedure;
                command.CommandText = "[VICTULING_ViewAvailableWithPrice]";

                //command.Parameters.AddWithValue("@itemCode", ddlItem.SelectedItem.Text);
                //command.Parameters.AddWithValue("@wordRoomCode", ddlWardroom.SelectedItem.Text);

                adapter = new SqlDataAdapter(command);
                adapter.Fill(ds);

                grdReport.DataSource = ds.Tables[0];

                grdReport.DataBind();

                con.Close();
            }
        }

        protected void grdReport_ItemCommand(object sender, Telerik.Web.UI.GridCommandEventArgs e)
        {
        }

        protected void grdReport_ItemDataBound(object sender, Telerik.Web.UI.GridItemEventArgs e)
        {
            if (e.Item is GridDataItem)
            {
                int strIndex = grdReport.MasterTableView.CurrentPageIndex;

                Label lbl = e.Item.FindControl("lblSn") as Label;
                lbl.Text = Convert.ToString(strIndex * grdReport.PageCount + e.Item.ItemIndex + 1);
            }
        }
    }
}
```

Figure 4.17: Part of the View available item list with price page Code

Chapter 5 – Testing and Evaluation

5.1. Introduction

System should be tested in order to make sure whether it facilitates all the requirements of the system. After testing evaluation of the overall project is an essential element of a successful project implementation.

Ensuring the system's compliance with all stipulated requirements is imperative, warranting a thorough testing process. The comprehensive examination aims to ascertain that the system not only accommodates but effectively fulfills every specified need. Beyond the testing phase, the evaluation of the overall project emerges as a crucial component in the successful execution of a project. This pivotal evaluation encompasses a complete overview, delving into diverse facets of project implementation. This chapter will intricately detail the systematic testing procedures employed, shedding light on the particular processes undertaken to validate the system's efficacy comprehensively. Furthermore, it will delve into the outcomes of user evaluations, offering valuable insights into the system's performance as perceived by end-users. This exhaustive exploration stands as an integral element in refining the system, addressing any identified shortcomings, and thereby playing a pivotal role in the overarching success of the project implementation. This chapter will explain the testing procedures and the User evaluation results.

5.2. Proposed System Testing Methodology

Testing is the process of executing a program to find errors. In the proposed system, the testing process conducted under three main categories.

- Functional Testing
- Non-Functional Testing
- Maintenance Testing

In the web-based system, the testing process needs to be conducted across various categories, each employing specific testing types as shown in Figure 5.1.

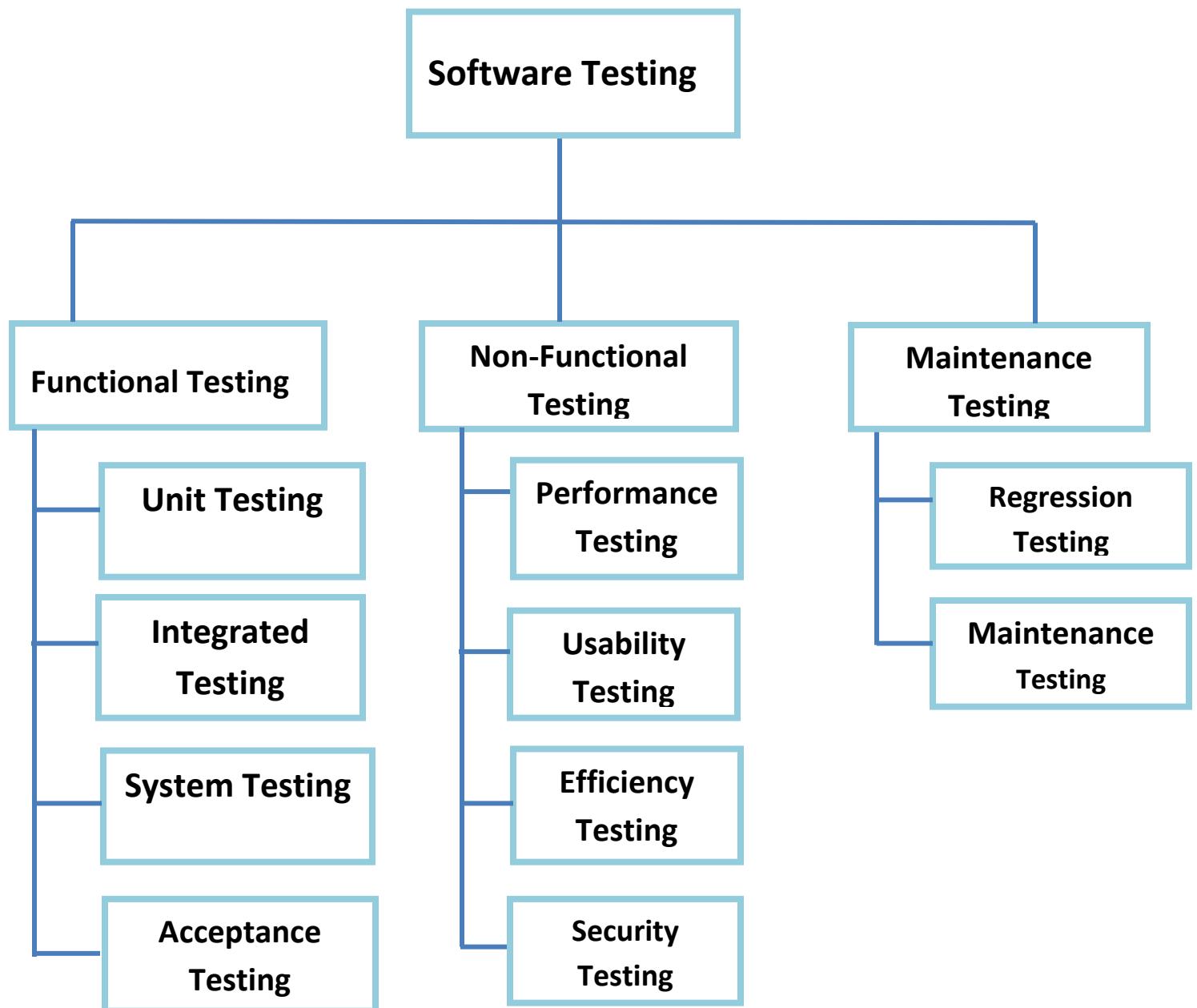


Figure 5.1– System Testing Types

5.2.1.Functional Testing

In the comprehensive functional testing process, a meticulous testing phase was carried out in strict adherence to a well-structured test plan. This strategic approach involved a systematic assessment of each function based on predetermined priorities, providing a clear understanding of the significance and impact of every component within the system. The testing plan served as a blueprint, guiding the testing team to allocate resources efficiently and focus on critical functions first. As part of this methodology, test cases were methodically developed for each function, ensuring a thorough examination of the software's functionality. The generated test cases were then meticulously documented and reported, creating a valuable repository of information for future reference and continuous improvement. This systematic and organized testing process not only validated the functionality of each component but also laid the groundwork for a robust and reliable software product.

Test Plan

For this particular system, a meticulously crafted test plan encompassing the entire system was formulated, accompanied by a tailored approach to project testing. The objectives of this thoughtfully developed test plan are outlined as follows:

1. **Comprehensive System Coverage:** The primary goal is to ensure that the test plan encompasses all aspects of the system, leaving no feature or functionality unexamined. This inclusive approach is designed to provide a holistic assessment of the system's performance.
2. **Thorough Validation of Requirements:** The test plan aims to validate that each specified requirement of the system is thoroughly examined. This ensures that the software not only meets but exceeds the defined criteria, guaranteeing a high level of compliance with user needs and expectations.
3. **Identification of Critical Paths:** The plan seeks to identify and prioritize critical paths within the system. By focusing on these key functionalities, the testing process aims

to mitigate risks associated with core components, ensuring the stability and reliability of the overall system.

Here (Table 5.1) is the test Plan for Wardroom Victualing management system login control test plan.

Test ID	Test Name	Description	Expected Outcome	Proprietary
1	Invalid Credentials Username	Attempt to log in with an invalid username.	Error message indicating invalid credentials.	High
2	Invalid Credentials Password	Attempt to log in with an invalid password.	Error message indicating invalid credentials.	High
3	Invalid Credentials Both	Attempt to log in with both an invalid username and password.	Error message indicating invalid credentials.	High
4	Valid Credentials	Log in with valid credentials.	Redirected to the dashboard or main menu.	High
5	Remember Me Functionality	Log in with the "Remember Me" option selected and close the browser. Reopen the browser and navigate to the login page. Verify if the user is still logged in.	User is automatically logged in without entering credentials.	Medium
6	Logout Functionality	Log in and then log out of the system.	User is logged out and redirected to the login page.	High
7	Session Timeout	Log in and wait for the session timeout period.	User is automatically logged out due to session timeout.	Medium
8	Account Lockout Mechanism	Attempt to log in with incorrect credentials multiple times until the account is locked out.	Account is locked out after a specified number of attempts.	Medium
9	Password Reset Functionality	Use the "Forgot Password" feature to reset the password.	User receives an email with instructions to reset password.	Medium
10	Password Complexity Requirements	Attempt to change the password to one that does not meet the system's complexity requirements.	Error message indicating password complexity requirements.	High

Table 5.1: Login control test plan

All other test plans were executed in the same manner as the Login control test plan.

5.2.2.Non-Functional Testing

Non-functional testing is a critical aspect of the overall testing process, focusing on aspects other than the specific functionalities of a system. In this context, several test types were employed to comprehensively assess the non-functional attributes of the system. The following test types were conducted.

Load Testing

This type of testing evaluates the system's response under expected and peak load conditions to ensure optimal performance even during periods of high user activity. Considering this, the proposed system's average load time was 1456 ms.

Reliability Testing

Ensured that the system remained available and accessible to users at any time (24 hrs*7 days)

Usability Testing

Usability testing was conducted under the following three categories

In person usability testing

Firstly, register into the system as a dummy user and navigate through the entire complaint management process in person to test the system's usability. Subsequently, employ an actual user (SA/MA/CA and Officer) to test the application in a real environment, conducting 5 complaint management activities. Observe the scenarios and identify any usability issues.

Monitored remote usability testing

Selected five users were chosen to the system on their respective web browsers. They were instructed to work simultaneously using the system and their manual processes. The progress of each user was monitored remotely through a metering application and database logs.

Unmonitored remote usability testing

Finally, the system was hosted and configured for all the crew leaders in the Navy Head Quartets (NHQ). Their feedback was collected using a questionnaire and analyzed to better understand the system's usability. The relevant analysis is explained under the evaluation topic.

Compatibility Testing

Browser Compatibility

Ensured that the system functions correctly across various web browsers (Chrome, Firefox, Safari, or Internet Explorer).

Device Compatibility

Tested the system's compatibility with various devices, including desktops, tablets, and laptops.

5.2.3.Maintenance Testing

Following the implementation of a solution in the NHQ wardroom, a situation arose necessitating maintenance testing within a week of the completion of the implementation.

The wardroom users have requested modifications to certain reports, and officers are requested to handle meal –In processes individually. Therefore, I designed a separate interface for officers who need to go through the meal-in process individually using QR code. In addition to this, officers require assistance for the meal-in process.

While this adjustment aimed to enhance the system's adaptability to environmental conditions and improve user experience, it triggered the need for a maintenance testing process in the project. Maintenance testing becomes crucial in this context to verify that the recent changes, do not introduce unintended issues or disruptions in the application's functionality.

5.3. Test Cases

The under-mentioned test cases are utilized to conduct testing for the Web-Based Wardroom Victualing Management System of the Sri Lanka Navy.

Test Case ID	001
Test Case Name	User Login with Valid Data
Steps to be followed	<ol style="list-style-type: none"> 1. Provide valid username 2. Provide valid password 3. Click login button
Test Data	<p>Username = “kal”</p> <p>Password = “123@A”</p>
Expected Result	Login to the system successfully
Pass/Fail	Pass



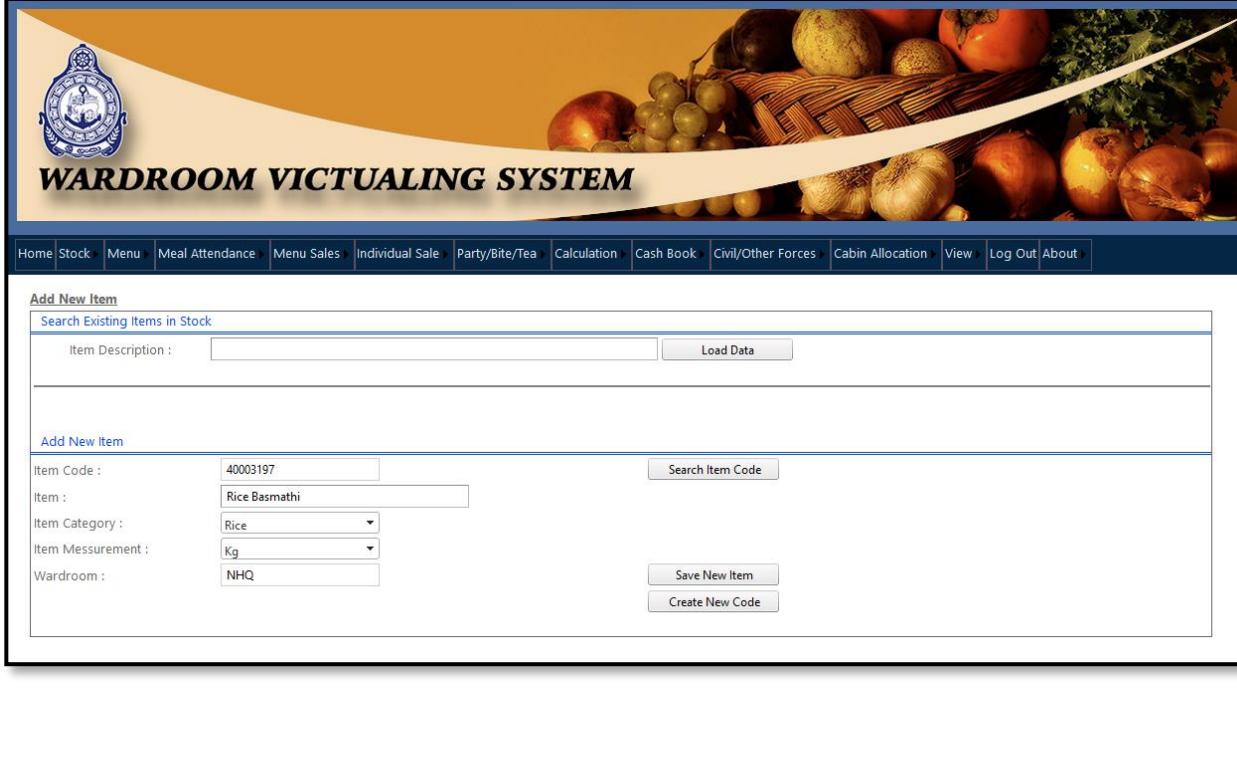

Table 5.2: Test Case for Valid User login

Test Case ID	002
Test Case Name	User Login with invalid Data
Steps to be followed	<ol style="list-style-type: none"> 1. Provide invalid username 2. Provide valid password 3. Click login button
Test Data	<p>Username = “kal”</p> <p>Password = “123”</p>
Expected Result	A error message will be displayed
Pass/Fail	Pass

The image displays two screenshots of a web application interface. Both screenshots show a header with the logo of the Royal Navy and the text "WARDROOM VICTUALING SYSTEM". Below the header is a navigation bar with links for "Home", "Log Out", and "About". The main content area contains a login form with fields for "User Name" and "Password", and a "Login" button. In the second screenshot, a red error message is displayed below the form, stating "Please fill the UserName field, Details cannot be empty.".

Table 5.3: Test Case for Invalid User login

Test Case ID	003
Test Case Name	Add new item to stock
Steps to be followed	<ol style="list-style-type: none"> 1. Search new item code 2. Add new Item 3. Select Item category and Item measurement Click Save New Item button
Test Data	<p>Item Code = “40003197” Item = “Rice Basmathi” Item category = “Rice” Item measurement = “Kg”</p>
Expected Result	Add new Item to the system successfully
Pass/Fail	Pass



The screenshot shows the Wardroom Victualing System interface. At the top, there is a banner featuring a crest on the left and a variety of fruits and vegetables on the right. Below the banner, the title "WARDROOM VICTUALING SYSTEM" is displayed in bold capital letters.

The navigation menu at the top includes links for Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About.

The main content area is titled "Add New Item". It contains two sections: "Search Existing Items in Stock" and "Add New Item".

In the "Search Existing Items in Stock" section, there is a search bar labeled "Item Description:" with a placeholder "40003197" and a "Load Data" button.

In the "Add New Item" section, there are input fields for "Item Code" (40003197), "Item" (Rice Basmathi), "Item Category" (Rice), "Item Measurement" (Kg), and "Wardroom" (NHQ). To the right of these fields are two buttons: "Save New Item" and "Create New Code".

Table 5.4: Test Case for Add new item to stock

Test Case ID	004
Test Case Name	Add 309 Price List
Steps to be followed	<ol style="list-style-type: none"> 1. Select on charge date, Year, Item Category, Item and Item Measurement 2. Add Unit price and Denomination 3. Click Add button
Test Data	<p>On Charge Date = “10-12-2023” Year = “2023” Item category = “Rice” Item = “Rice Basmathi” Unit price = 520.00 Denomination = “kg” Item measurement = “kg”</p>
Expected Result	Add successfully
Pass/Fail	Pass



The screenshot shows the 'WARDROOM VICTUALING SYSTEM' application. At the top, there is a decorative banner featuring a crest on the left and a basket of fruit on the right. Below the banner, a navigation menu bar contains links: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, and Civil/Other For. The main content area is titled 'Add 309 Price List'. It includes several input fields and dropdown menus:

- Wardroom : NHQ
- On Charge Date : A date input field with a calendar icon.
- Year : A dropdown menu with options including "Select" and "309".
- Received From : A dropdown menu with options including "Select" and "309".
- Item Category : A dropdown menu with options including "Select".
- Item : A dropdown menu with options including "Select".
- Unit Price : An empty input field.
- Denomination : An empty input field.
- Item Measurement : A dropdown menu with options including "Select".
- An 'Add' button is located to the right of the measurement dropdown.

Table 5.5: Test Case for Add 309Price List

Test Case ID	005
Test Case Name	View 309 Price List
Steps to be followed	<ol style="list-style-type: none"> 1. Select relevant Year 2. Click Search button
Test Data	Year = 2023
Expected Result	Relevant year price list as a report
Pass/Fail	Pass

The screenshot shows the Wardroom Victualing System interface. At the top, there is a banner featuring a crest and the text "WARDROOM VICTUALING SYSTEM". Below the banner is a navigation menu with links: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About.

The main content area is titled "309 Price List". It includes search filters for "Wardroom" (set to NHQ) and "Year" (set to 2023), with a "Search" button. Below the filters is a table displaying a list of items with their details:

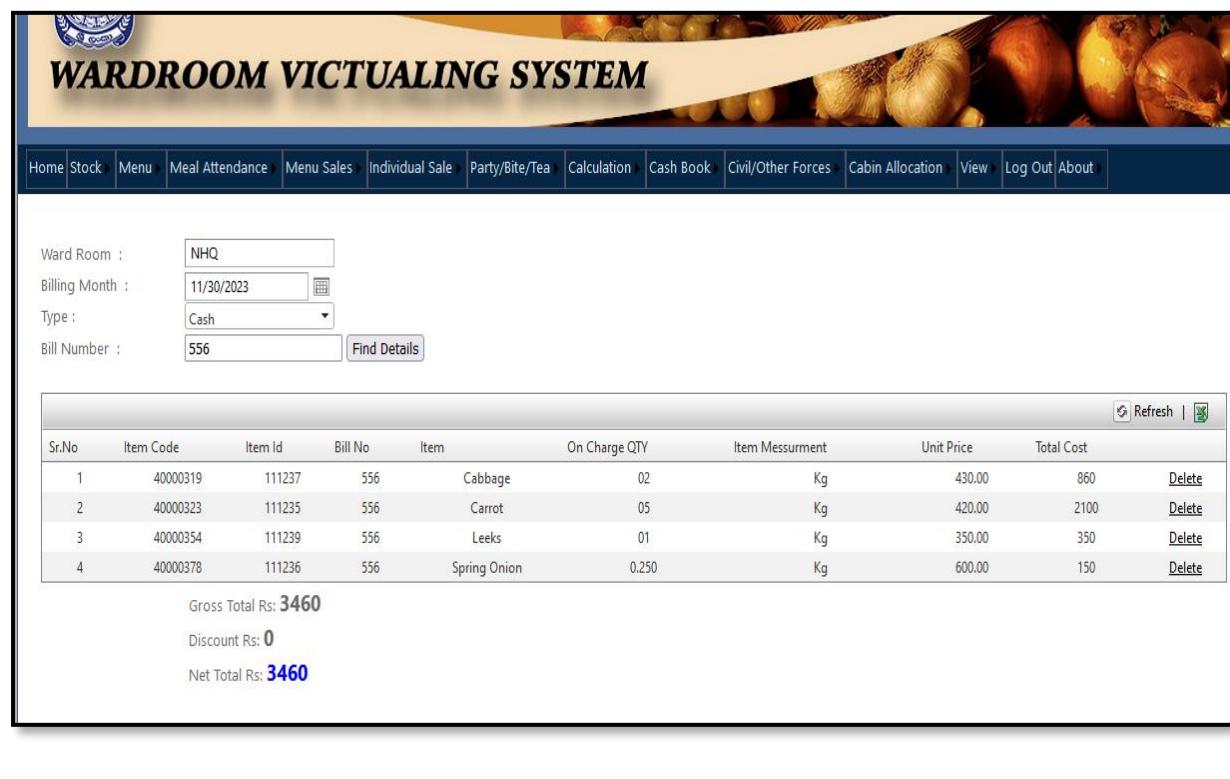
Sr.No	Item Code	Item	Unit Price	Denomination	Item Measurement	Item ID	Actions
1	40003134	Alaguduwa Uncleaned	1100.00	01	Kg	12170	Delete
2	40000852	Astra Magarine	2200.00	01	Kg	12198	Delete
3	40000314	B'Onion	240.00	01	Kg	12171	Delete
4	40000889	Biscuit Chocolate Cream 1.0 KG	1495.00	01	Kg	12184	Delete
5	40000128	Biscuit Cream Cracker 125 G	172.50	01	Packet	12205	Delete
6	40001060	Biscuit Ginger 1kg	1150.00	01	Kg	12216	Delete
7	40000133	Biscuit Lemon Puff 100 G	161.00	01	Packet	12230	Delete
8	40001059	Biscuit Marri 1KG	1265.00	01	Kg	12185	Delete
9	40001058	Biscuit Nice 1KG	1380.00	01	Kg	12207	Delete
10	40000146	Bopf 01 KG	1550.00	01	Kg	12206	Delete
11	40000444	Buns Fish	111.62	01	NOS	12204	Delete
12	40000323	Carrot	394.00	01	Kg	12196	Delete
13	40000251	Chicken Broiler Dressed	1584.70	01	Kg	12223	Delete
14	40000255	Chicken Drumstick	1449.00	01	Kg	12214	Delete
15	40000079	Chilli Pieces	1950.00	01	Kg	12172	Delete
16	40000080	Chilli Powder	2000.00	01	Kg	12173	Delete
17	40002858	coconut creamer	1122.40	01	Liter	12225	Delete
18	40000299	Coconut With Out Husked	130.00	01	Kg	12175	Delete
19	40001114	Coffee Powder	4600.00	01	Kg	12176	Delete
20	40000212	Dates	911.00	01	Kg	12194	Delete
21	40000038	Dhall Mysoor	445.00	01	Kg	12211	Delete
22	40000424	Eggs Hen	58.00	01	NOS	12197	Delete
23	40000774	Flour Prima	300.00	01	Kg	12199	Delete
24	40000090	Garlick	611.60	01	Kg	12178	Delete
25	40000179	Jam Mixed Fruit 450 G	1001.778	01	Kg	12208	Delete
26	40000354	Leeks	328.00	01	Kg	12201	Delete

Table 5.6: Test Case for View 309 price list

Test Case ID	006
Test Case Name	Add Stock Items
Steps to be followed	<ol style="list-style-type: none"> 1. Select on charge date, Received from, Item Category, Item and Item Measurement, Reason 2. Add Bill No., Unit Price, On Charge Qty and Bill Discount. 3. Add Official No. (Not Mandatory) 4. Click Add button
Test Data	<p>On Charge Date = "2023-12-05"</p> <p>Received from = "Cash"</p> <p>Bill No = "105/2023"</p> <p>Item Category = "Rice"</p> <p>Item = "Rice basmathi"</p> <p>Unit Price = "430.00"</p> <p>On charge Qty. = "20.00"</p> <p>Item Measurement = "Kg"</p> <p>Reason = "Personal"</p> <p>Official No = "3147"</p> <p>Bill Discount = "25.00"</p>
Expected Result	On charge item successfully
Pass/Fail	Pass

Table 5.7: Test Case for Add Stock Item

Test Case ID	007
Test Case Name	View on charge Bill
Steps to be followed	<ol style="list-style-type: none"> 1. Select Billing Date and Type 2. Add Bill No. 3. Click Find Details
Test Data	Billing Date = “2023-11-30” Type = “Cash” Bill Number = “556”
Expected Result	Relevant report
Pass/Fail	Pass



The screenshot shows the Wardroom Victualing System interface. At the top, there's a banner with the system's name and some fruit and vegetable icons. Below the banner is a navigation menu with links like Home, Stock, Menu, Meal Attendance, etc. The main area contains a form for searching bills, with fields for Ward Room (NHQ), Billing Month (11/30/2023), Type (Cash), and Bill Number (556). A 'Find Details' button is next to the number field. Below the form is a table displaying the search results:

Sr.No	Item Code	Item Id	Bill No	Item	On Charge QTY	Item Messurment	Unit Price	Total Cost	Action
1	40000319	111237	556	Cabbage	02	Kg	430.00	860	Delete
2	40000323	111235	556	Carrot	05	Kg	420.00	2100	Delete
3	40000354	111239	556	Leeks	01	Kg	350.00	350	Delete
4	40000378	111236	556	Spring Onion	0.250	Kg	600.00	150	Delete

Below the table, there are summary calculations:

- Gross Total Rs: **3460**
- Discount Rs: **0**
- Net Total Rs: **3460**

Table 5.8: Test case for View on charge bill

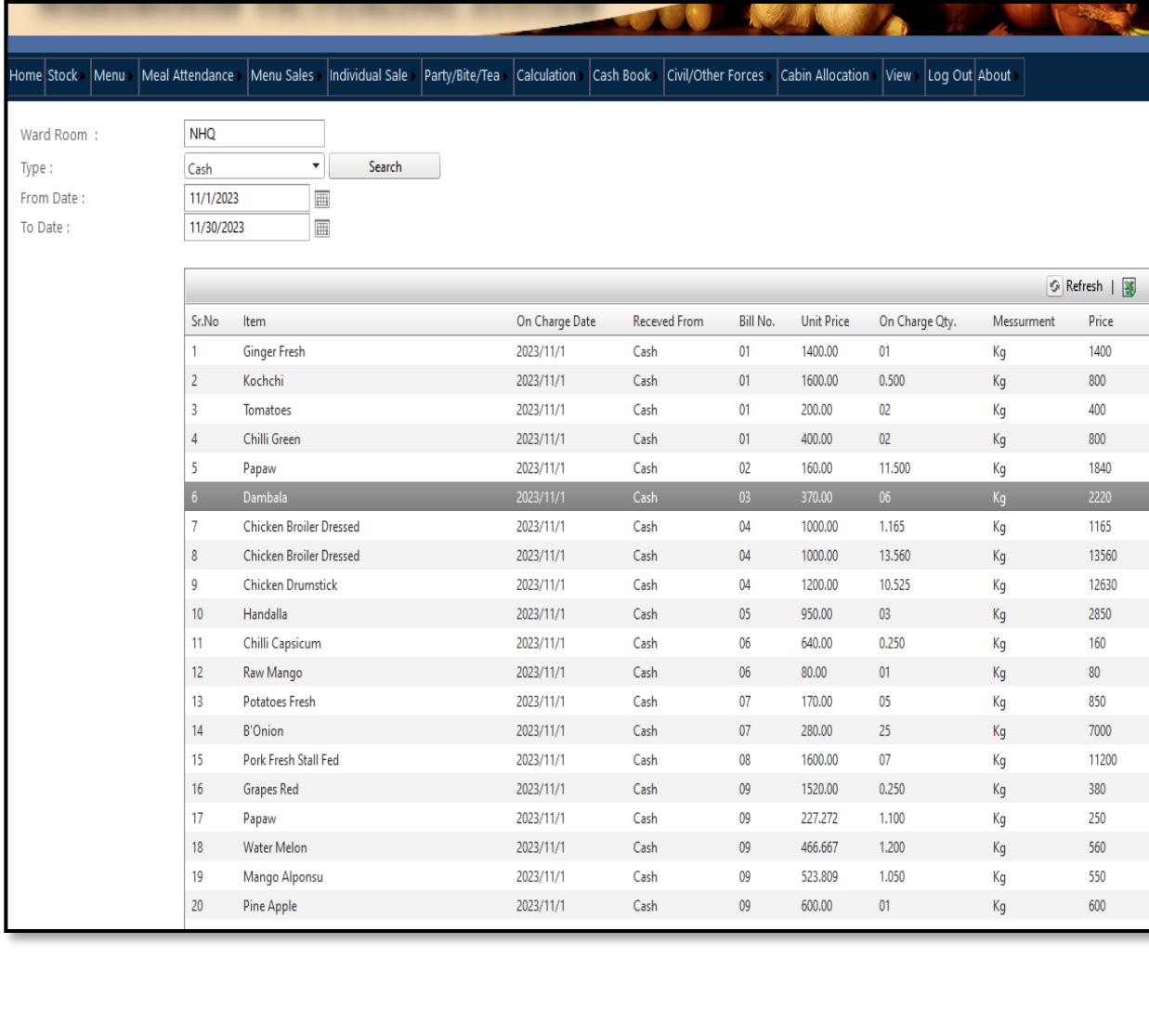
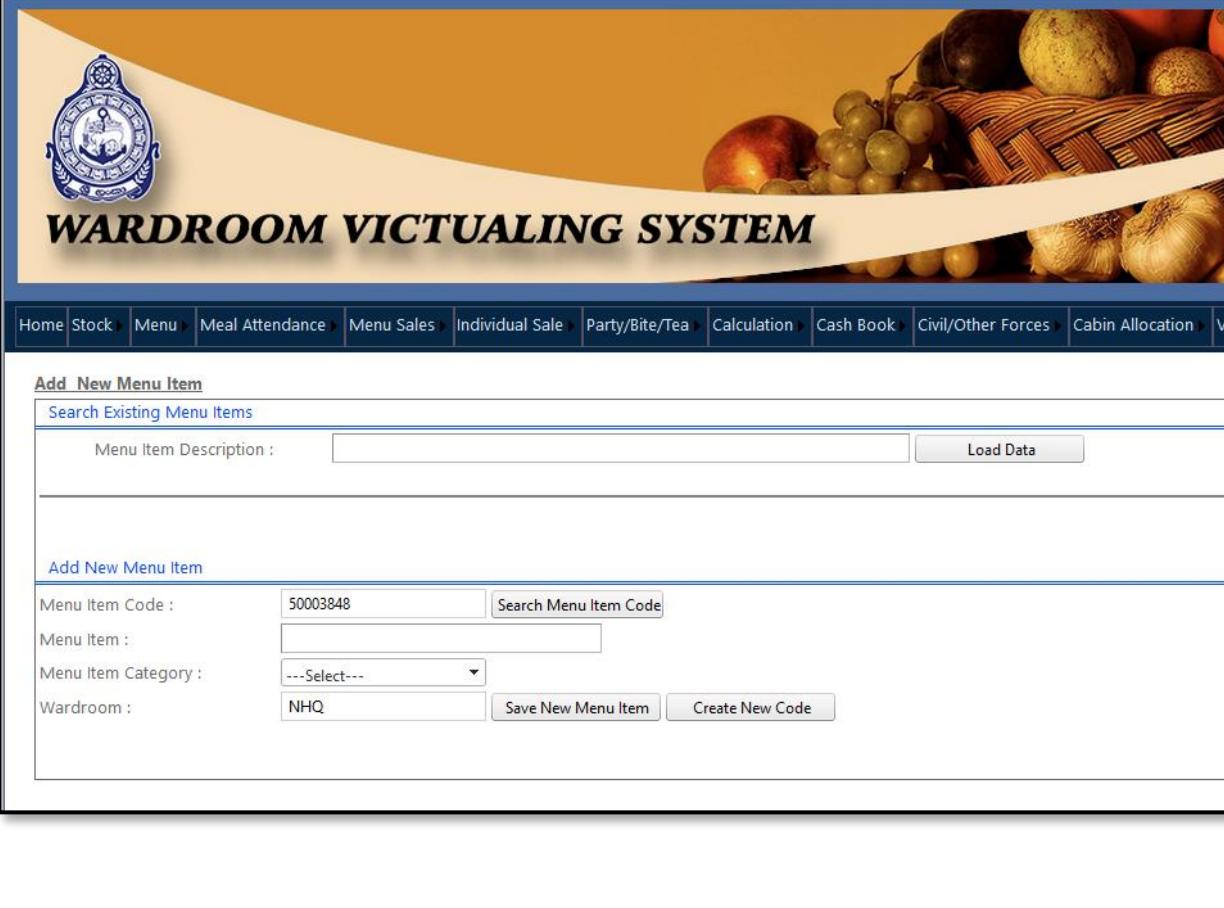
Test Case ID	008																																																																																																																																																																																												
Test Case Name	View purchased all items by duration																																																																																																																																																																																												
Steps to be followed	1. Select Type, From Date and To Date 2. Click Search button																																																																																																																																																																																												
Test Data	Type = "Cash" From Date = "11/1/2023" To Date = "11/30/2023"																																																																																																																																																																																												
Expected Result	Relevant report																																																																																																																																																																																												
Pass/Fail	Pass																																																																																																																																																																																												
 <p>The screenshot shows a software application window with a dark blue header bar containing various menu items: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About. Below the header, there's a search form with fields for 'Ward Room' (set to 'NHQ'), 'Type' (set to 'Cash'), 'From Date' (set to '11/1/2023'), and 'To Date' (set to '11/30/2023'). A 'Search' button is also present. The main area displays a table titled 'Sr.No Item On Charge Date Received From Bill No. Unit Price On Charge Qty. Messurment Price'. The table lists 20 items, each with its details such as name, purchase date, source, bill number, unit price, quantity, measurement, and total price.</p> <table border="1"> <thead> <tr> <th>Sr.No</th> <th>Item</th> <th>On Charge Date</th> <th>Received From</th> <th>Bill No.</th> <th>Unit Price</th> <th>On Charge Qty.</th> <th>Messurment</th> <th>Price</th> </tr> </thead> <tbody> <tr><td>1</td><td>Ginger Fresh</td><td>2023/11/1</td><td>Cash</td><td>01</td><td>1400.00</td><td>01</td><td>Kg</td><td>1400</td></tr> <tr><td>2</td><td>Kochchi</td><td>2023/11/1</td><td>Cash</td><td>01</td><td>1600.00</td><td>0.500</td><td>Kg</td><td>800</td></tr> <tr><td>3</td><td>Tomatoes</td><td>2023/11/1</td><td>Cash</td><td>01</td><td>200.00</td><td>02</td><td>Kg</td><td>400</td></tr> <tr><td>4</td><td>Chilli Green</td><td>2023/11/1</td><td>Cash</td><td>01</td><td>400.00</td><td>02</td><td>Kg</td><td>800</td></tr> <tr><td>5</td><td>Papaw</td><td>2023/11/1</td><td>Cash</td><td>02</td><td>160.00</td><td>11.500</td><td>Kg</td><td>1840</td></tr> <tr><td>6</td><td>Dambala</td><td>2023/11/1</td><td>Cash</td><td>03</td><td>370.00</td><td>06</td><td>Kg</td><td>2220</td></tr> <tr><td>7</td><td>Chicken Broiler Dressed</td><td>2023/11/1</td><td>Cash</td><td>04</td><td>1000.00</td><td>1.165</td><td>Kg</td><td>1165</td></tr> <tr><td>8</td><td>Chicken Broiler Dressed</td><td>2023/11/1</td><td>Cash</td><td>04</td><td>1000.00</td><td>13.560</td><td>Kg</td><td>13560</td></tr> <tr><td>9</td><td>Chicken Drumstick</td><td>2023/11/1</td><td>Cash</td><td>04</td><td>1200.00</td><td>10.525</td><td>Kg</td><td>12630</td></tr> <tr><td>10</td><td>Handalla</td><td>2023/11/1</td><td>Cash</td><td>05</td><td>950.00</td><td>03</td><td>Kg</td><td>2850</td></tr> <tr><td>11</td><td>Chilli Capsicum</td><td>2023/11/1</td><td>Cash</td><td>06</td><td>640.00</td><td>0.250</td><td>Kg</td><td>160</td></tr> <tr><td>12</td><td>Raw Mango</td><td>2023/11/1</td><td>Cash</td><td>06</td><td>80.00</td><td>01</td><td>Kg</td><td>80</td></tr> <tr><td>13</td><td>Potatoes Fresh</td><td>2023/11/1</td><td>Cash</td><td>07</td><td>170.00</td><td>05</td><td>Kg</td><td>850</td></tr> <tr><td>14</td><td>B'Onion</td><td>2023/11/1</td><td>Cash</td><td>07</td><td>280.00</td><td>25</td><td>Kg</td><td>7000</td></tr> <tr><td>15</td><td>Pork Fresh Stall Fed</td><td>2023/11/1</td><td>Cash</td><td>08</td><td>1600.00</td><td>07</td><td>Kg</td><td>11200</td></tr> <tr><td>16</td><td>Grapes Red</td><td>2023/11/1</td><td>Cash</td><td>09</td><td>1520.00</td><td>0.250</td><td>Kg</td><td>380</td></tr> <tr><td>17</td><td>Papaw</td><td>2023/11/1</td><td>Cash</td><td>09</td><td>227.272</td><td>1.100</td><td>Kg</td><td>250</td></tr> <tr><td>18</td><td>Water Melon</td><td>2023/11/1</td><td>Cash</td><td>09</td><td>466.667</td><td>1.200</td><td>Kg</td><td>560</td></tr> <tr><td>19</td><td>Mango Alponsu</td><td>2023/11/1</td><td>Cash</td><td>09</td><td>523.809</td><td>1.050</td><td>Kg</td><td>550</td></tr> <tr><td>20</td><td>Pine Apple</td><td>2023/11/1</td><td>Cash</td><td>09</td><td>600.00</td><td>01</td><td>Kg</td><td>600</td></tr> </tbody> </table>	Sr.No	Item	On Charge Date	Received From	Bill No.	Unit Price	On Charge Qty.	Messurment	Price	1	Ginger Fresh	2023/11/1	Cash	01	1400.00	01	Kg	1400	2	Kochchi	2023/11/1	Cash	01	1600.00	0.500	Kg	800	3	Tomatoes	2023/11/1	Cash	01	200.00	02	Kg	400	4	Chilli Green	2023/11/1	Cash	01	400.00	02	Kg	800	5	Papaw	2023/11/1	Cash	02	160.00	11.500	Kg	1840	6	Dambala	2023/11/1	Cash	03	370.00	06	Kg	2220	7	Chicken Broiler Dressed	2023/11/1	Cash	04	1000.00	1.165	Kg	1165	8	Chicken Broiler Dressed	2023/11/1	Cash	04	1000.00	13.560	Kg	13560	9	Chicken Drumstick	2023/11/1	Cash	04	1200.00	10.525	Kg	12630	10	Handalla	2023/11/1	Cash	05	950.00	03	Kg	2850	11	Chilli Capsicum	2023/11/1	Cash	06	640.00	0.250	Kg	160	12	Raw Mango	2023/11/1	Cash	06	80.00	01	Kg	80	13	Potatoes Fresh	2023/11/1	Cash	07	170.00	05	Kg	850	14	B'Onion	2023/11/1	Cash	07	280.00	25	Kg	7000	15	Pork Fresh Stall Fed	2023/11/1	Cash	08	1600.00	07	Kg	11200	16	Grapes Red	2023/11/1	Cash	09	1520.00	0.250	Kg	380	17	Papaw	2023/11/1	Cash	09	227.272	1.100	Kg	250	18	Water Melon	2023/11/1	Cash	09	466.667	1.200	Kg	560	19	Mango Alponsu	2023/11/1	Cash	09	523.809	1.050	Kg	550	20	Pine Apple	2023/11/1	Cash	09	600.00	01	Kg	600
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Table 5.9: Test case for view purchased all items by duration

Test Case ID	009
Test Case Name	Add new Menu item
Steps to be followed	<ol style="list-style-type: none"> 1. Search Menu item code 2. Add Menu Item 3. Select Menu Item category 4. Click 'Save New Item' button
Test Data	Menu Item Code = "50003848" Menu Item = "Rice Basmathi" Menu Item category = "Rice"
Expected Result	Add new Menu tem to the system successfully
Pass/Fail	Pass



The screenshot shows the 'WARDROOM VICTUALING SYSTEM' homepage with a navigation bar at the top. Below the header, there are two main sections: 'Search Existing Menu Items' and 'Add New Menu Item'. In the 'Add New Menu Item' section, the 'Menu Item Code' field contains '50003848', the 'Menu Item' field is empty, the 'Menu Item Category' dropdown is set to '---Select---', and the 'Wardroom' dropdown is set to 'NHQ'. Buttons for 'Search Menu Item Code', 'Save New Menu Item', and 'Create New Code' are visible.

Table 5.10: Test case for add new Menu item

Test Case ID	010
Test Case Name	Add Ingredients
Steps to be followed	<ol style="list-style-type: none"> 1. Select Meal Category, Meal, Item Category, Item and Item Measurement 2. Add Qty. 3. Click ‘Add Ingredients’ button
Test Data	<p>Meal Category = “Chicken” Meal = “Butter Chicken” Item Category = “Chicken” Item = “Chicken Breast” Qty = “0.150” Item Measurement = “kg”</p>
Expected Result	Add Ingredients to the menu successfully
Pass/Fail	Pass

The screenshot displays a software interface for managing meal ingredients. At the top, a navigation bar lists various menu items: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, and Civil/Other. The main window is titled "Add Ingredients". It contains several input fields and dropdown menus:

- Wardroom: NHQ
- Meal Category: Chicken
- Meal: Butter Chicken
- Item Category: Chicken
- Item: Chicken Breast
- Qty: (empty)
- Item Measurement: ---Select---

An "Add Ingredients" button is located to the right of the measurement field. Below this section, there is a link titled "View Ingredients for Meal Item". Under this link, there are two more dropdown menus:

- Meal Category: Bakery Products
- Meal: (empty)

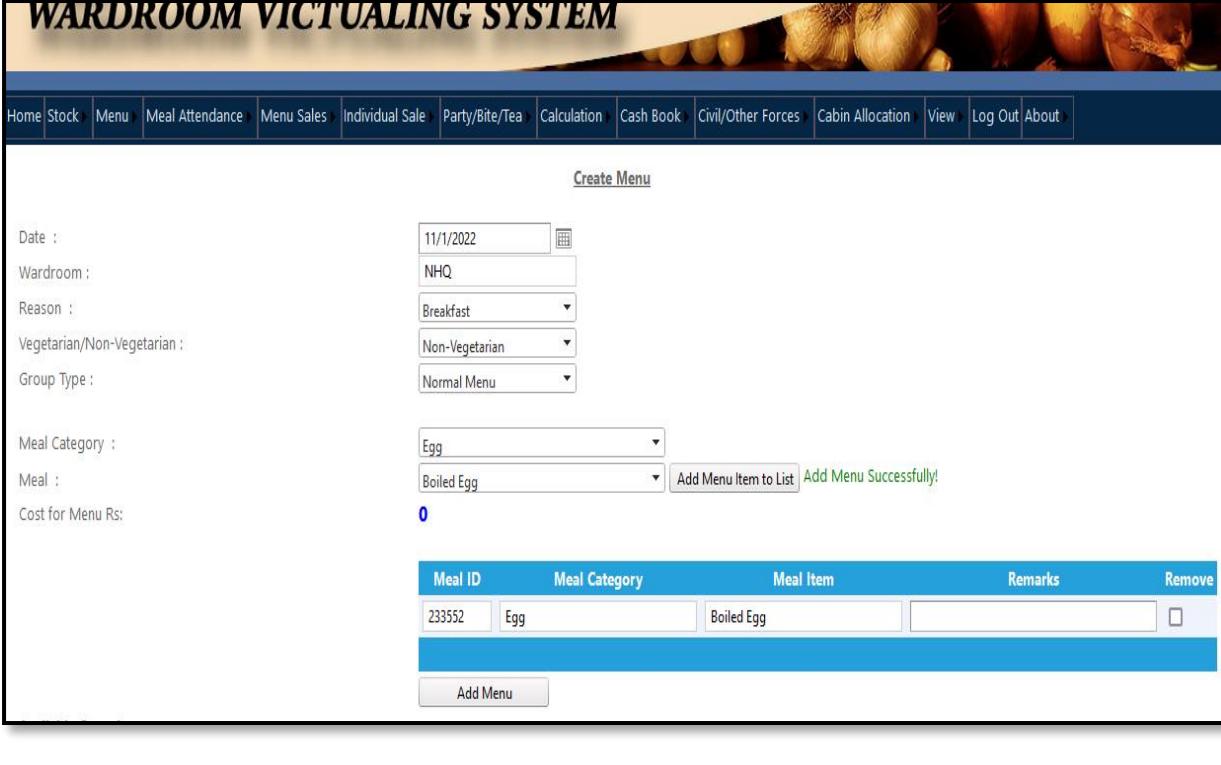
Table 5.11: Test case for Add Ingredients

Test Case ID	011
Test Case Name	Edit Ingredients
Steps to be followed	<ol style="list-style-type: none"> 1. Select Meal Category and Meal 2. Click ‘View Ingredients’ button 3. Select Item Category, Item and Item Measurement 4. Add Qty. 5. Click ‘Add Ingredients’ button
Test Data	<p>Meal Category = “Soup” Meal = “Vegetable Soup (New)” Item Category = “ Vegetable ” Item = “Carrot” Qty = “0.050” Item Measurement = “kg”</p>
Expected Result	Load existing ingredient list Add new ingredients to the menu successfully
Pass/Fail	Pass

Sr.No	Menu Item	Ingredients	Qty.	Messurment	ID	Action
1	Vegetable Soup (New)	Leeks	0.0039	Kg	143431	Delete
2	Vegetable Soup (New)	Astra Magarine	0.0014	Kg	143432	Delete
3	Vegetable Soup (New)	Fresh Milk 1 L	0.0071	Packet	143433	Delete
4	Vegetable Soup (New)	Corn Flour	0.0018	Kg	143434	Delete
5	Vegetable Soup (New)	Flour Prima	0.0028	Kg	143435	Delete
6	Vegetable Soup (New)	Chicken Stock Powder	0.0021	Kg	143436	Delete
7	Vegetable Soup (New)	Maggi	0.0282	Packet	143437	Delete
8	Vegetable Soup (New)	Red Pumpkin	0.0142	Kg	143443	Delete

Table 5.12: Test case for Edit Ingredients

Test Case ID	012
Test Case Name	Create Menu
Steps to be followed	<ol style="list-style-type: none"> 1. Select Date, Reason, Veg/Non Veg, Group Type, Meal Category and Meal 2. Click ‘Add Menu Item to List’ button 3. Click ‘Add Menu’
Test Data	<p>Date = “2022-11-01” Reason = Breakfast Veg/Non Veg = Non-Vegitarian Group Type = “Normal Menu” Meal Category =”Egg” Meal = “Boiled Egg”</p>
Expected Result	Create Menu successfully
Pass/Fail	Pass



The screenshot shows the 'WARDROOM VIRTUALIZING SYSTEM' homepage with a navigation bar at the top. The 'Menu' option is selected, leading to the 'Create Menu' page. The page has fields for Date, Wardroom, Reason, Vegetarian/Non-Vegetarian, Group Type, Meal Category, and Meal. It also shows a summary of the selected items and a table of the menu items added to the list.

Create Menu

Date : 11/1/2022

Wardroom : NHQ

Reason : Breakfast

Vegetarian/Non-Vegetarian : Non-Vegetarian

Group Type : Normal Menu

Meal Category : Egg

Meal : Boiled Egg

Cost for Menu Rs: 0

Add Menu Item to List Add Menu Successfully!

Meal ID	Meal Category	Meal Item	Remarks	Remove
233552	Egg	Boiled Egg		<input type="checkbox"/>

Add Menu

Table 5.13: Test case for create menu

Test Case ID	013
Test Case Name	Menu Authorization
Steps to be followed	<ol style="list-style-type: none"> 1. Select Date, Reason, Group and Veg/Non Veg 2. Click ‘View Menu’ 3. Click ‘Checked’ tick box 4. Click ‘Authorized Menu’ button
Test Data	Menu Item Code = “50003848” Menu Item = “Rice Basmathi” Menu Item category = “Rice”
Expected Result	Authorized menu successfully
Pass/Fail	Pass

Menu Authorization

Select Date :

Reason :

Group :

Vegetarian/Non-Vegetarian :

Wardroom :

Checked

Sr.No	Item Category	Item	Remarks
No records to display.			

Table 5.14: Test case for Menu Authorization

Test Case ID	014
Test Case Name	View Menu
Steps to be followed	<ol style="list-style-type: none"> Select Date, Reason, Group and Vegetarian/Non-Vegetarian Click ‘View Menu’
Test Data	<p>Date = “2024-01-06” Reason = “Breakfast” Group = “Normal Menu” Vegetarian/Non-Vegetarian = “Non-Vegetarian”</p>
Expected Result	Display relevant menu
Pass/Fail	Pass

The screenshot shows a software interface for viewing menus. At the top, there is a navigation bar with various links: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, and View. Below the navigation bar, the title "View Menus" is displayed. The main area contains a form with the following fields:

- Date :
- Reason :
- Group :
- Vegetarian/Non-Vegetarian :
- Wardroom :
-

Below the form is a table with the following data:

Sr.No	Item Category	Item	Remarks
1	Dhal Curry	Dhal Dry Curry	
2	Fish	Fish Linna Curry	
3	Sambol	Pol Sambol	
4	Rice	White Raw Rice	

Table 5.15: Test case for View Menu

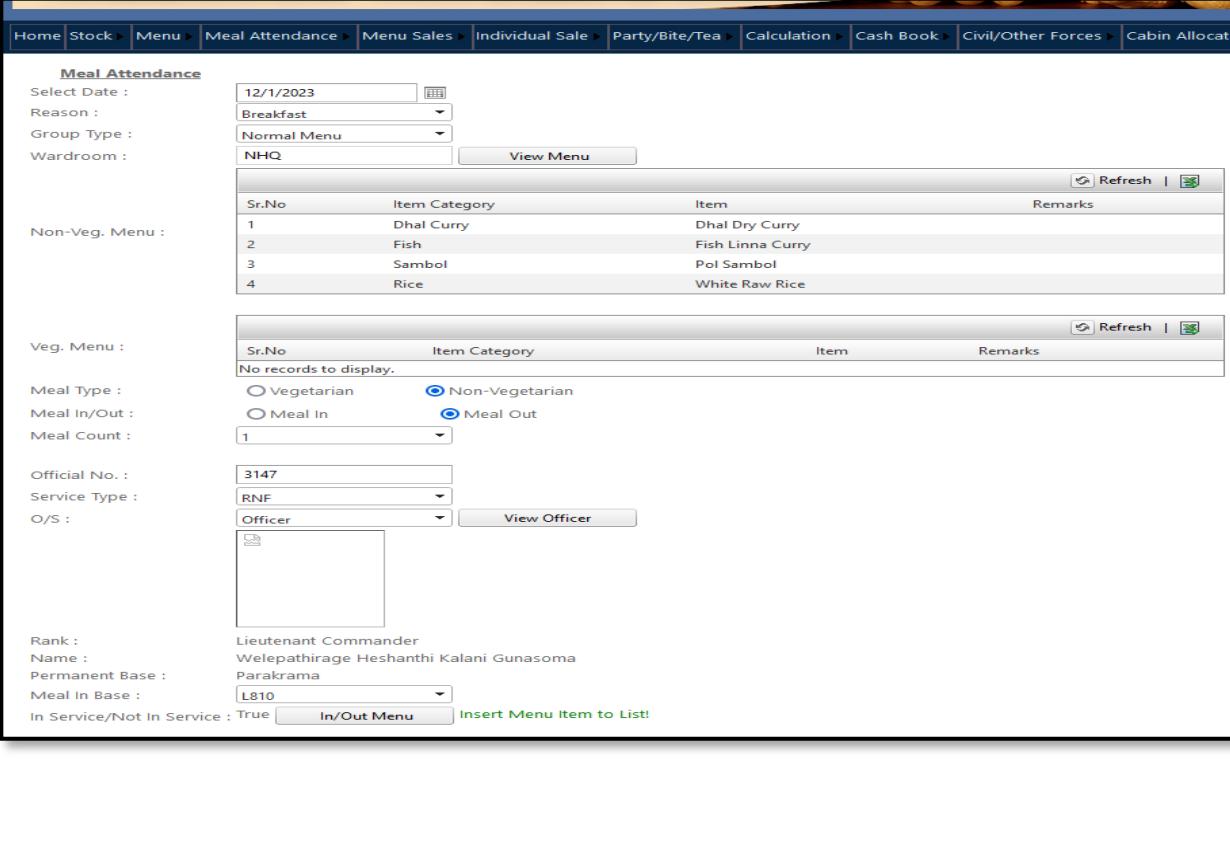
Test Case ID	015
Test Case Name	View Menu Ingredient list
Steps to be followed	<ol style="list-style-type: none"> Select Date, Reason, Group and Vegetarian/Non-Vegetarian Click ‘View Menu’
Test Data	<p>Date = “2023-11-01” Reason = “Dinner” Group = “Normal Menu” Vegetarian/Non-Vegetarian = “Non-Vegetarian”</p>
Expected Result	Display relevant menu
Pass/Fail	Pass

Sr.No	Item Category	Item	Remarks
1	Chicken	Chicken Curry (new)	
2	Tempered Food	Dhabala Tembared (New)	
3	Sambol	Gotukola Sambol (new)	
4	Rice	KEERI SAMBA (NEW)	
5	Sri Lankan Style Curry	Kiri Ala Curry (new)	
6	Deep Fried Food	Papadam (New)	
7	Dessert	Papaya (NEW)	

Sr.No	Meal Name	Ingredients	Qty.	Item Messurment	Issue Qty.
1	Chicken Curry (new)	Chicken Drumstick	0.10384	Kg	5.39968
2	Chicken Curry (new)	Chilli Powder	0.00192	Kg	0.09984
3	Chicken Curry (new)	Gamboge	0.0008	Kg	0.0416
4	Chicken Curry (new)	Ginger Fresh	0.0009	Kg	0.0468
5	Dhabala Tembared (New)	Chilli Pieces	0.0037	Kg	0.1924
6	Dhabala Tembared (New)	Chilli Powder	0.0037	Kg	0.1924
7	Dhabala Tembared (New)	coconut creamer	0.0074	Tin	0.3848
8	Dhabala Tembared (New)	Curry Leaves	0.0074	Bundle	0.3848
9	Dhabala Tembared (New)	Dambala	0.09629	Kg	5.00708
10	Dhabala Tembared (New)	Flour Prima	0.0008	Kg	0.0416
11	Dhabala Tembared (New)	Mustard Seed	0.0004	Kg	0.0208
12	Dhabala Tembared (New)	Tomatoes	0.0074	Kg	0.3848
13	Gotukola Sambol (new)	B'Onion	0.05084	Kg	2.64368
14	Gotukola Sambol (new)	Chilli Green	0.00423	Kg	0.21996
15	Gotukola Sambol (new)	Coconut With Out Husked	0.11355	Kg	5.9046
16	Gotukola Sambol (new)	Gotukola	0.25423	Bundle	13.21996
17	Gotukola Sambol (new)	Lime	0.00762	Kg	0.39624
18	Gotukola Sambol (new)	Pepper Powder	0.00169	Kg	0.08788
19	Gotukola Sambol (new)	Tomatoes	0.02033	Kg	1.05716
20	KEERI SAMBA (NEW)	Rice Keeri Samba	0.2	Kg	10.4
21	KEERI SAMBA (NEW)	Table Salt	0.01818	Kg	0.94536
22	Kiri Ala Curry (new)	Coconut With Out Husked	0.13559	Kg	7.05068

Table 5.15 – Test case for view menu ingredient list

Test Case ID	016
Test Case Name	Meal Attendance
Steps to be followed	<ol style="list-style-type: none"> Select Date, Reason and Group Type Click ‘View Menu’ Select Meal Type and Meal In/Out Select Meal Count Add Official Number and Select Service Type Click ‘View Officer’ button Click ‘In/Out Menu’ button
Test Data	<p>Date = “2023-12-01” Reason = “Breakfast” Group = “Normal Menu” Meal Type = “Non-Vegetarian” Meal In/Out = “Meal In” Meal Count = “1” Official No. = ‘3147’ Service Type = ‘RNF’</p>
Expected Result	Meal in successfully
Pass/Fail	Pass



The screenshot shows the 'Meal Attendance' application interface. The top navigation bar includes links for Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, and Cabin Allocation. The 'Meal Attendance' link is highlighted.

The main form is titled 'Meal Attendance'. It contains several input fields and dropdown menus:

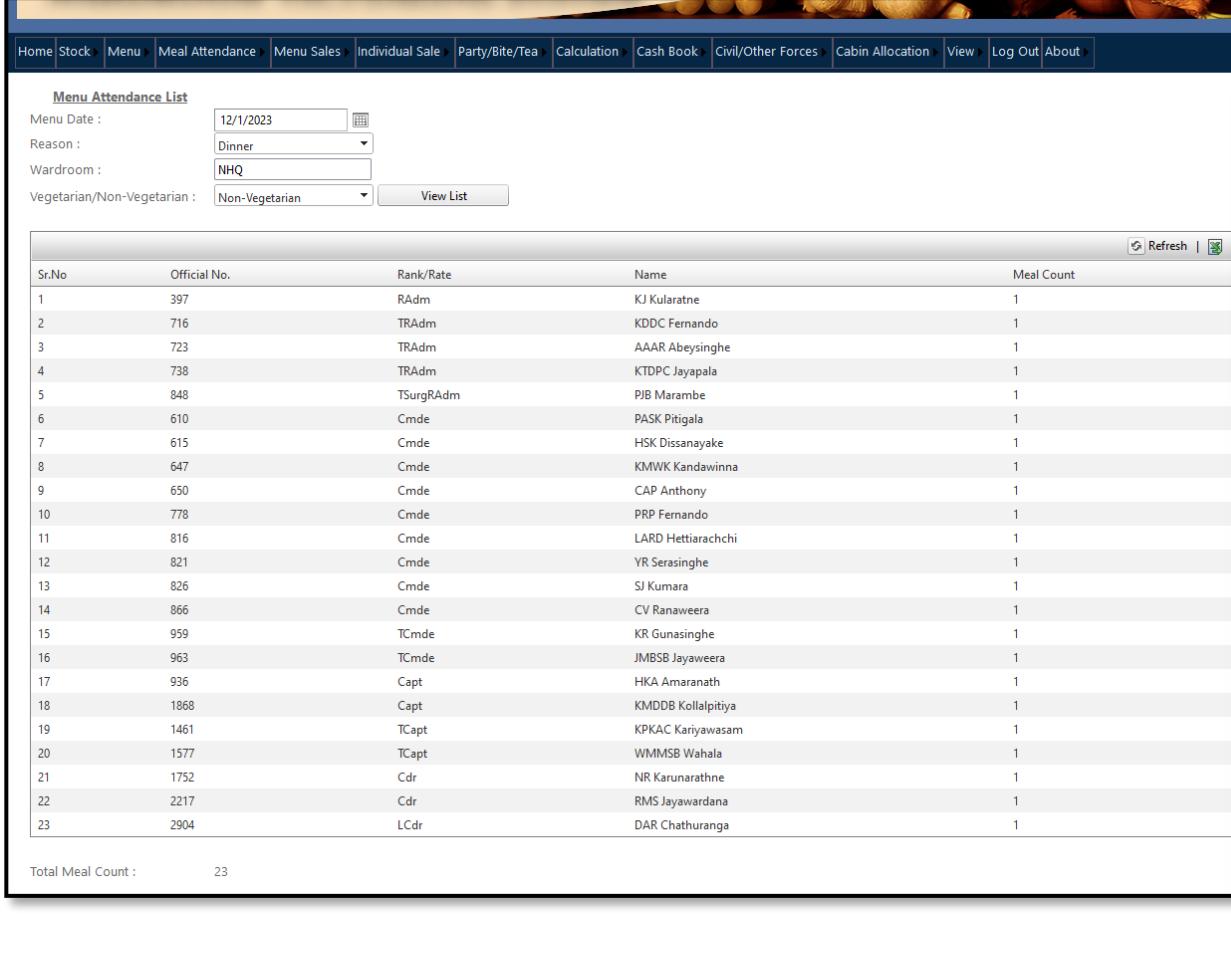
- Select Date: 12/1/2023
- Reason: Breakfast
- Group Type: Normal Menu
- Wardroom: NHQ
- Non-Veg. Menu (Table):

Sr.No	Item Category	Item	Remarks
1	Dhal Curry	Dhal Dry Curry	
2	Fish	Fish Linna Curry	
3	Sambol	Pol Sambol	
4	Rice	White Raw Rice	
- Veg. Menu (Table):

Sr.No	Item Category	Item	Remarks
No records to display.			
- Meal Type: Non-Vegetarian (selected)
- Meal In/Out: Meal In (selected)
- Meal Count: 1
- Official No.: 3147
- Service Type: RNF
- O/S: Officer
- Rank: Lieutenant Commander
Name: Welepathirage Heshanthi Kalani Gunasoma
Permanent Base: Parakrama
- Meal In Base: L810
- In Service/Not In Service: True
- Buttons: View Officer, Insert Menu Item to List!

Table 5.17: Test case for Meal Attendance

Test Case ID	017
Test Case Name	View Menu Attendance List
Steps to be followed	1. Select Date, Reason and Vegetarian/Non-Vegetarian 2. Click ‘View List’
Test Data	Date = “2024-01-06” Reason = “Dinner” Vegetarian/Non-Vegetarian = “Non-Vegetarian”
Expected Result	Display relevant menu
Pass/Fail	Pass



Sr.No	Official No.	Rank/Rate	Name	Meal Count
1	397	RAdm	KJ Kularatne	1
2	716	TRAdm	KDDC Fernando	1
3	723	TRAdm	AAAR Abeysinghe	1
4	738	TRAdm	KTDP C Jayapala	1
5	848	TSurgRAdm	PJB Marambe	1
6	610	Cmde	PASK Pitigala	1
7	615	Cmde	HSK Dissanayake	1
8	647	Cmde	KMWK Kandawinna	1
9	650	Cmde	CAP Anthony	1
10	778	Cmde	PRP Fernando	1
11	816	Cmde	LARD Hettiarachchi	1
12	821	Cmde	YR Serasinghe	1
13	826	Cmde	SJ Kumara	1
14	866	Cmde	CV Ranaweera	1
15	959	TCmde	KR Gunasinghe	1
16	963	TCmde	JMBSB Jayaweera	1
17	936	Capt	HKA Amaranath	1
18	1868	Capt	KMDDB Kollalpitiya	1
19	1461	TCapt	KPKAC Kariyawasam	1
20	1577	TCapt	WMMSB Wahala	1
21	1752	Cdr	NR Karunaratne	1
22	2217	Cdr	RMS Jayawardana	1
23	2904	LCdr	DAR Chathuranga	1

Total Meal Count : 23

Table 5.18: Test case View Menu Attendance list

Test Case ID	018
Test Case Name	Menu Sale
Steps to be followed	<ol style="list-style-type: none"> Select Date, Reason, Group Type and Vegetarian/Non-Vegetarian Click 'View Menu' Click 'View Ingredient List' Click 'Get Hand Stock' button Click 'Update Stock' button Click 'Save Total Menu Cost' button
Test Data	Date = "2024-01-06" Reason = "Breakfast" Group Type = "Normal Menu" Vegetarian/Non-Vegetarian = "Non-Vegetarian"
Expected Result	Deduct relevant menu ingredients from stock successfully
Pass/Fail	Pass

Menu Item Sale

Sale Date :	9/1/2023	<input type="button" value="Calendar"/>
Reason :	Breakfast	<input type="button" value="▼"/>
Group Type :	Normal Menu	<input type="button" value="▼"/>
Vegetarian/Non-Vegetarian :	Non-Vegetarian	<input type="button" value="▼"/>
Wardroom :	NHQ	<input type="button" value="View Menu"/>

Menu :

Sr.No	Item Category	Item	Remarks
1	Vege Curry	Batana Curry	
2	Sambol	Pol Sambol	
3	Dry Fish	Sprat Tempered	
4	Rice	White Raw Rice	

View Ingredients List

Sr.No	Meal Name	Ingredients	Qty.	Item Messurment	Issue Qty.
1	Batana Curry	B'Onion	0.003	Kg	0.033
2	Batana Curry	Batana	0.100	Kg	1.1
3	Batana Curry	Chilli Green	0.003	Kg	0.033
4	Batana Curry	Chilli Powder	0.002	Kg	0.022
5	Batana Curry	Cinamon	0.0005	Kg	0.0055
6	Batana Curry	Coconut With Out Husked	0.200	Kg	2.2
7	Batana Curry	Curry Powder	0.003	Kg	0.033
8	Batana Curry	Fenugreek	0.0005	Kg	0.0055
9	Batana Curry	Garlick	0.003	Kg	0.033
10	Batana Curry	Mustard Seed	0.0005	Kg	0.0055
11	Batana Curry	Table Salt	0.003	Kg	0.033
12	Batana Curry	Turmeric Powder	0.0005	Kg	0.0055
13	Pol Sambol	B'Onion	0.015	Kg	0.165
14	Pol Sambol	Chilli Green	0.002	Kg	0.022
15	Pol Sambol	Chilli Pieces	0.005	Kg	0.055
16	Pol Sambol	Coconut With Out Husked	0.150	Kg	1.65
17	Pol Sambol	Garlick	0.003	Kg	0.033
18	Pol Sambol	Lime	0.010	Kg	0.11
19	Pol Sambol	Table Salt	0.002	Kg	0.022
20	Pol Sambol	Tomatoes	0.005	Kg	0.055

	32	White Raw Rice	Rice Raw White	0.185	Kg	2.035
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Total Non-Vegetarian Count : 11

Total Vegetarian Count :

[Total Ingredients List](#)

Sr.No	Ingredients	Qty. for Menu	Current Stock	Item Messurment	Item Code
1	B'Onion	0.528	74.8473	Kg	40000314
2	Batana	1.1	0	Kg	40000305
3	Chilli Green	0.088	2.08038	Kg	40000329
4	Chilli Pieces	0.066	1.39055	Kg	40000079
5	Chilli Powder	0.022	11.0444	Kg	40000080
6	Cinamon	0.0055	0	Kg	40000081
7	Coconut With Out Husked	3.85	10.8405	Kg	40000299
8	Curry Powder	0.033	4.54226	Kg	40000085
9	Dry Sprates	0.385	5.82228	Kg	40000111
10	Fenugreek	0.0055	0	Kg	40000087
11	Garlick	0.099	4.80457	Kg	40000090
12	Lime	0.11	0.94	Kg	40000356
13	Mustard Seed	0.011	1.11565	Kg	40000092
14	Oil Coconut - 01ltr	0.11	10.2511	Liter	40001958
15	Rice Raw White	2.035	11.862	Kg	40000153
16	Sauce Tomato 400g	0.088	17.4528	Kg	40001099
17	Table Salt	0.077	17.0692	Kg	40000977
18	Tomatoes	0.165	0.54118	Kg	40000384
19	Turmeric Powder	0.011	1.84905	Kg	40000104

ID	Item ID	Item	From	Price	Mesu	Stock Qty.	Sale Qty.	Current Qty.
110919	40000314	B'Onion	Cash	250.00	Kg	3.84725	0.528	3.31925
110998	40000314	B'Onion	Cash	230.00	Kg	6	0.000	6
111013	40000314	B'Onion	Cash	250.00	Kg	10	0.000	10
111046	40000314	B'Onion	Cash	250.00	Kg	10	0.000	10
111075	40000314	B'Onion	Cash	260.00	Kg	5	0.000	5
111105	40000314	B'Onion	Cash	260.00	Kg	5	0.000	5
111140	40000314	B'Onion	Cash	260.00	Kg	10	0.000	10

110551	40000085	Curry Powder	Cash	1000.00	Kg	1	0.000	1	
Get ingredients Deduction List	110677	40000085	Curry Powder	Cash	1250.00	Kg	3	0.000	3
	108320	40000011	Dry Sprates	Cash	1350.00	Kg	0.82228	0.385	0.43728
	108897	40000011	Dry Sprates	Cash	1200.00	Kg	2	0.000	2
	109092	40000011	Dry Sprates	Cash	1400.00	Kg	2	0.000	2
	111074	40000011	Dry Sprates	Cash	1200.00	Kg	1	0.000	1
	111166	40000090	Garlick	Cash	500.00	Kg	1.80457	0.099	1.70557
	111262	40000090	Garlick	Cash	500.00	Kg	3	0.000	3
	111210	40000356	Lime	Cash	1300.00	Kg	0.44	0.11	0.33
	111301	40000356	Lime	Cash	1000.00	Kg	0.5	0.000	0.5
	110673	40000092	Mustard Seed	Cash	520.00	Kg	0.11565	0.011	0.10465
	111136	40000092	Mustard Seed	Cash	520.00	Kg	0.5	0.000	0.5
	111273	40000092	Mustard Seed	Cash	600.00	Kg	0.5	0.000	0.5
	111062	40001958	Oil Coconut - 01ltr	Cash	640.00	Kg	0.25114	0.11	0.14114
	111291	40001958	Oil Coconut - 01ltr	Cash	640.00	Kg	10	0.000	10
	111123	40000153	Rice Raw White	Cash	204.00	Kg	1.854	2.035	0.000
	111220	40000153	Rice Raw White	Cash	198.00	Kg	5	0.181	4.819
	111295	40000153	Rice Raw White	Cash	204.00	Kg	5.008	0.000	5.008
	109129	40001099	Sauce Tomato 400g	Cash	559.523	Kg	0.6528	0.088	0.5648
	110645	40001099	Sauce Tomato 400g	Cash	547.619	Kg	8.4	0.000	8.4
	110914	40001099	Sauce Tomato 400g	Cash	547.619	Kg	8.4	0.000	8.4
	110940	40000977	Table Salt	Cash	190.00	Kg	1.06919	0.077	0.99219
	111012	40000977	Table Salt	Cash	162.50	Kg	8	0.000	8
	111171	40000977	Table Salt	Cash	162.50	Kg	8	0.000	8
	111240	40000384	Tomatoes	Cash	300.00	Kg	0.54118	0.165	0.37618
	110877	40000104	Turmeric Powder	Cash	1600.00	Kg	1.84905	0.011	1.83805

[Get Hand Stock](#)

[Update Stock](#)

Total Cost for Menu :

[Save Total Menu Cost](#)

Table 5.19: Test case for Menu sale

Test Case ID	019
Test Case Name	Daily Meal Attendance All Details
Steps to be followed	<ol style="list-style-type: none"> 1. Select Date and Reason 2. Click ‘View’ Button
Test Data	Date = “2024-01-06” Reason = “Breakfast”
Expected Result	Display relevant date menu attendance list
Pass/Fail	Pass

Sr.No	Service Type	Branch	Official No.	Rank/Rate	Name	Meal Count	None Vegetarian	Vegetarian
1	VNF	NVX	5250	Cdr	TNU Kumara	1	Group Menu 01	True
2	RNF	NRX	3757	LT	MACS Sooriyasena	1	Group Menu 01	True

Sr.No	Service Type	Branch	Official No.	Rank/Rate	Name	Selected Meal	Remarks	Meal Count	None Vegetarian	Vegetarian
1	RNF	NRX	1669	Cdr	MCP Perera				True	False
2	RNF	NRL	2220	Cdr	WJ Rupasinghe				Plain Tea	2
3	RNF	NRE	2234	Cdr	D Wijenatha				Plain Tea	1
4	RNF	NRX	1776	TCdr	RS Samarathunga				Plain Tea	1
5	RNF	NRX	1798	TCdr	YSM Harishchandra				Plain Tea	1
6	RNF	NRX	1798	TCdr	YSM Harishchandra				Tea	2
7	RNF	NRX	1875	TCdr	KKC Udayanga				Tea	1
8	RNF	NRX	1875	TCdr	KKC Udayanga				Plain Tea	2
9	RNF	NRI	1895	LCdr	MTCY De Silva				Tea	1
10	RNF	NRL	2675	LCdr	HUC Dharmasena				Plain Tea	1
11	RNF	NRL	2675	LCdr	HUC Dharmasena				Tea	2
12	RNF	NRX	2680	LCdr	WAHTL Weerakkody				Tea	2
13	RNF	NRY	2780	LCdr	WMSGB Weerasinghe				Plain Tea	2
14	RNF	NRT	3151	LCdr	RMJP NayanaJith				Tea	2
15	RNF	NRA	3712	LCdr	AMKB Adikari				Plain Tea	2
16	VNF	NVX	5373	LCdr	HMJ Kumara				Plain Tea	2
17	VNF	NVX	5638	LCdr	EM Priyantha				Plain Tea	2
18	VNF	NVX	5639	LCdr	MAAD Premasiri				Plain Tea	2

Table 5.20: Test case for Daily Meal Attendance All Details

Test Case ID	020
Test Case Name	Individual Item Sale
Steps to be followed	<ol style="list-style-type: none"> Select Official No., Service Type Click ‘View Person’ Item Taken By details are not mandatory Select Sale Date, Reason, Item Category and Item Click ‘Get Hand Stock’ button Click ‘Update Stock’ button
Test Data	<p>Official No. = ‘3147’ Service Type = ‘RNF’ Sale Date = “2024-01-06” Reason = “Personal” Item Category = “Rice” Item = “Rice Basmathi” Sale Qty = “1”</p>
Expected Result	Relevant items deduct from stock successfully
Pass/Fail	Pass

Personal Item Sale

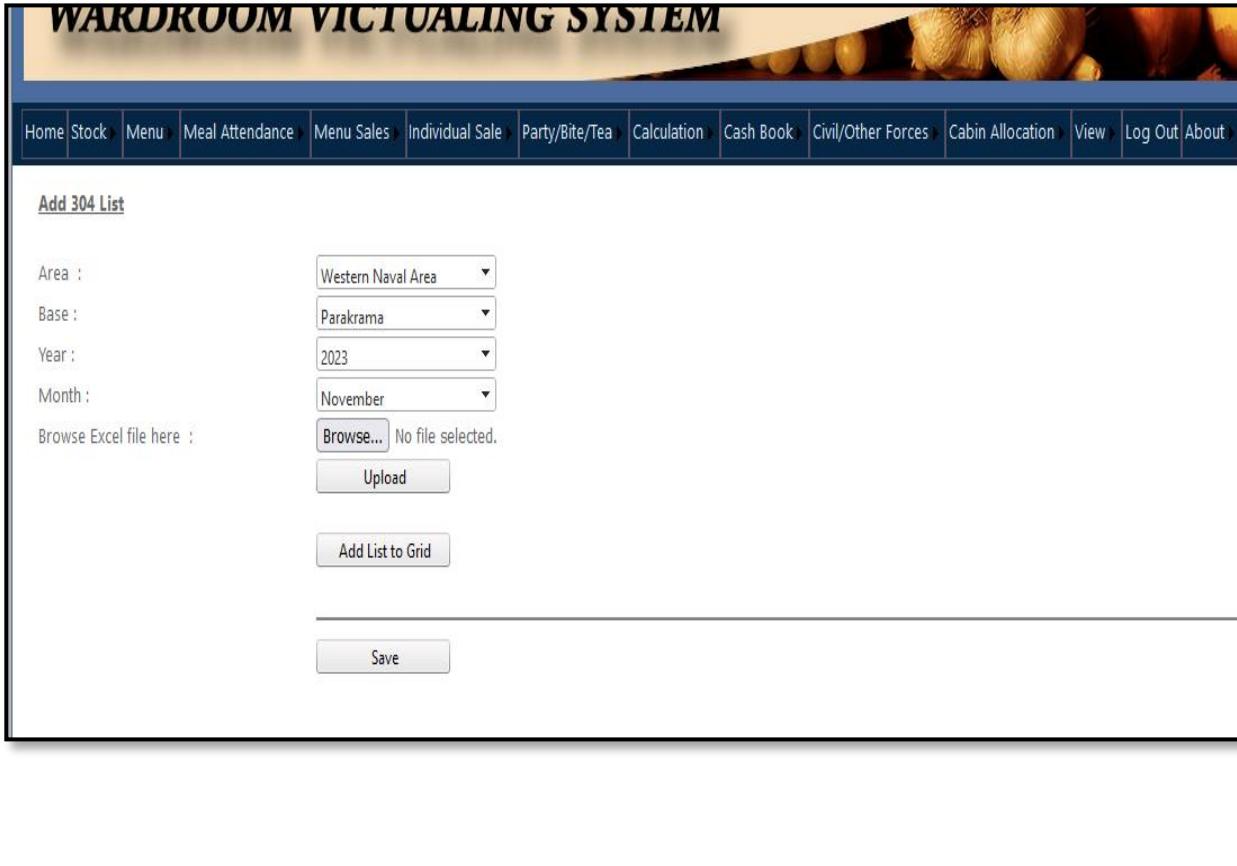
Item ID	Item	From	Price	Meas	Stock Qty.	Sale Qty.	Current Qty.	To Off.
101280	Rice Basmathi	Cash	839.50	Kg	0.7		0.7	0
106343	Rice Basmathi	Cash	157.51	Kg	0.61		0.61	0
110859	Rice Basmathi	Cash	700.00	Kg	3	1	2	0
111288	Rice Basmathi	Cash	700.00	Kg	0.02		2	0

Table 5.21: Test case for Individual Item Sale

Test Case ID	021
Test Case Name	View cost per meal
Steps to be followed	<ol style="list-style-type: none"> 1. Select Reason, Group Type, Vegetarian/Non-Vegetarian, Year and Month 2. Click ‘View’ button 3. Tick relevant menu cost 4. Click ‘Authorized Cost Per Person’ button
Test Data	Reason = “Breakfast” Group Type = “Normal Menu” Vegetarian/Non-Vegetarian = “Non-Vegetarian” Year = “2023” Month = “November”
Expected Result	Authorized successfully relevant menu cost
Pass/Fail	Pass

Table 5.22: Test case for View cost per meal

Test Case ID	022
Test Case Name	Upload 304 Price List
Steps to be followed	<ol style="list-style-type: none"> 1. Select Area, Base, Year and Month. 2. Brows and get relevant excel sheet 3. Click ‘Upload’, ‘Add List to Grid’ and ‘Save’ button
Test Data	<p>Area = “Western Naval Area” Base = “Parakrama” Year = “2023” Month = “November”</p>
Expected Result	Upload 304 list successfully in to the database
Pass/Fail	Pass



The screenshot shows the 'WARDROOM VICTUALING SYSTEM' homepage with a banner featuring onions. Below the banner is a navigation menu with links: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About. A sub-menu for 'Add 304 List' is displayed, containing fields for Area (Western Naval Area), Base (Parakrama), Year (2023), Month (November), a file upload section ('Browse...', 'Upload'), an 'Add List to Grid' button, and a 'Save' button.

Table 5.23: Test case for Upload 304 Price List

Test Case ID	023
Test Case Name	Upload Bar recovery
Steps to be followed	4. Select Area, Base, Year and Month. 5. Brows and get relevant excel sheet 6. Click ‘Upload’, ‘Add List to Grid’ and ‘Save’ button
Test Data	Area = “Western Naval Area” Base = “Parakrama” Year = “2023” Month = “November”
Expected Result	Upload Bar recovery successfully in to the database
Pass/Fail	Pass

Add Bar Recovery

Area : Western Naval Area

Base : Rangalla

Year : 2023

Month : November

Browse Excel file here : Browse... No file selected.

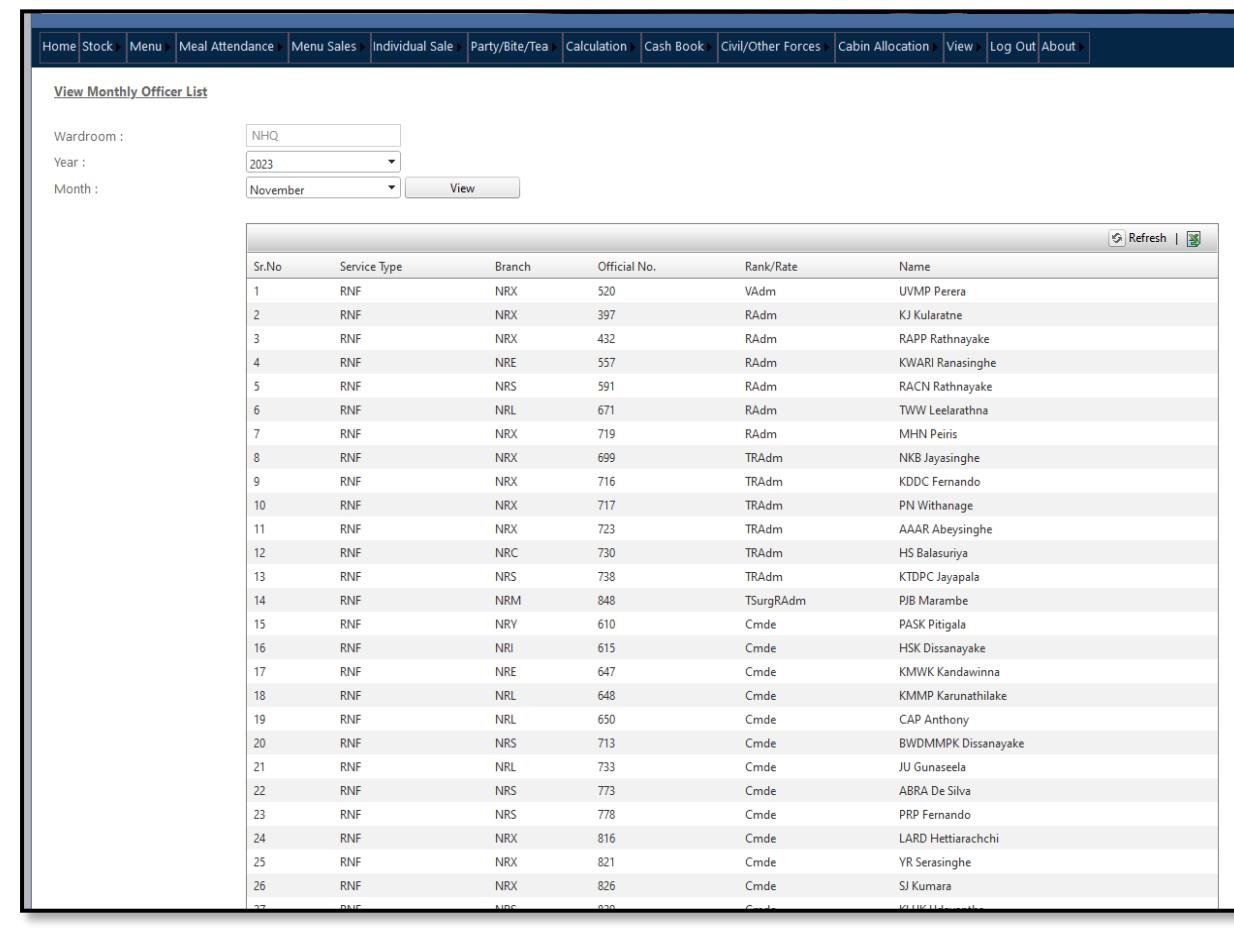
Upload

Add List to Grid

Save

Table 5.23 – Test case for Upload 304 Price List

Test Case ID	024
Test Case Name	View Monthly officer list
Steps to be followed	<ol style="list-style-type: none"> 1. Select Year and Month 2. Click ‘View’ button
Test Data	<p>Year = “2023” Month = “November”</p>
Expected Result	Display all officers who were used in the NHQ wardroom during the month of November.
Pass/Fail	Pass



The screenshot shows a web application interface for viewing monthly officer lists. At the top, there is a navigation bar with links: Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About. Below the navigation bar, the title "View Monthly Officer List" is displayed. On the left, there are three dropdown menus: "Wardroom" set to "NHQ", "Year" set to "2023", and "Month" set to "November". A "View" button is located next to the month dropdown. To the right of these controls is a large table containing the list of officers. The table has a header row with columns: Sr.No, Service Type, Branch, Official No., Rank/Rate, and Name. The body of the table contains 37 data rows, each representing an officer with their details. The table includes a "Refresh" button and a "Print" icon at the top right.

Sr.No	Service Type	Branch	Official No.	Rank/Rate	Name
1	RNF	NRX	520	VAdm	UVMP Perera
2	RNF	NRX	397	RAdm	KJ Kularatne
3	RNF	NRX	432	RAdm	RAPP Rathnayake
4	RNF	NRE	557	RAdm	KWARI Ranasinghe
5	RNF	NRS	591	RAdm	RACN Rathnayake
6	RNF	NRL	671	RAdm	TWW Leelarathna
7	RNF	NRX	719	RAdm	MHN Peiris
8	RNF	NRX	699	TRAdm	NKB Jayasinghe
9	RNF	NRX	716	TRAdm	KDDC Fernando
10	RNF	NRX	717	TRAdm	PN Withanage
11	RNF	NRX	723	TRAdm	AAAR Abeyasinghe
12	RNF	NRC	730	TRAdm	HS Balasuriya
13	RNF	NRS	738	TRAdm	KTDPK Jayapala
14	RNF	NRM	848	TSurgRAdm	PJB Marambe
15	RNF	NRY	610	Cmde	PASK Pitigala
16	RNF	NRI	615	Cmde	HSK Dissanayake
17	RNF	NRE	647	Cmde	KMWK Kandawinna
18	RNF	NRL	648	Cmde	KMMP Karunathilake
19	RNF	NRL	650	Cmde	CAP Anthony
20	RNF	NRS	713	Cmde	BWDMMPK Dissanayake
21	RNF	NRL	733	Cmde	JU Gunaseela
22	RNF	NRS	773	Cmde	ABRA De Silva
23	RNF	NRS	778	Cmde	PRP Fernando
24	RNF	NRX	816	Cmde	LARD Hettiarachchi
25	RNF	NRX	821	Cmde	YR Serasinghe
26	RNF	NRX	826	Cmde	SJ Kumara
27	RNF	NRC	829	Cmde	KLMS Hettiarachchi

Table 5.25: Test case for View Monthly officer list

Test Case ID	025
Test Case Name	View Monthly officer list for authorization
Steps to be followed	3. Select Year, Month and Reason 4. Click ‘View’ button
Test Data	Year = “2023” Month = “November” Reason = “ Main Menu Cost - Non-Vegetarian”
Expected Result	Display all officers who were used Non Vegetarian main menu in the NHQ wardroom during the month of November.
Pass/Fail	Pass

View Monthly Officer List

Wardroom : NHQ

Year : 2023

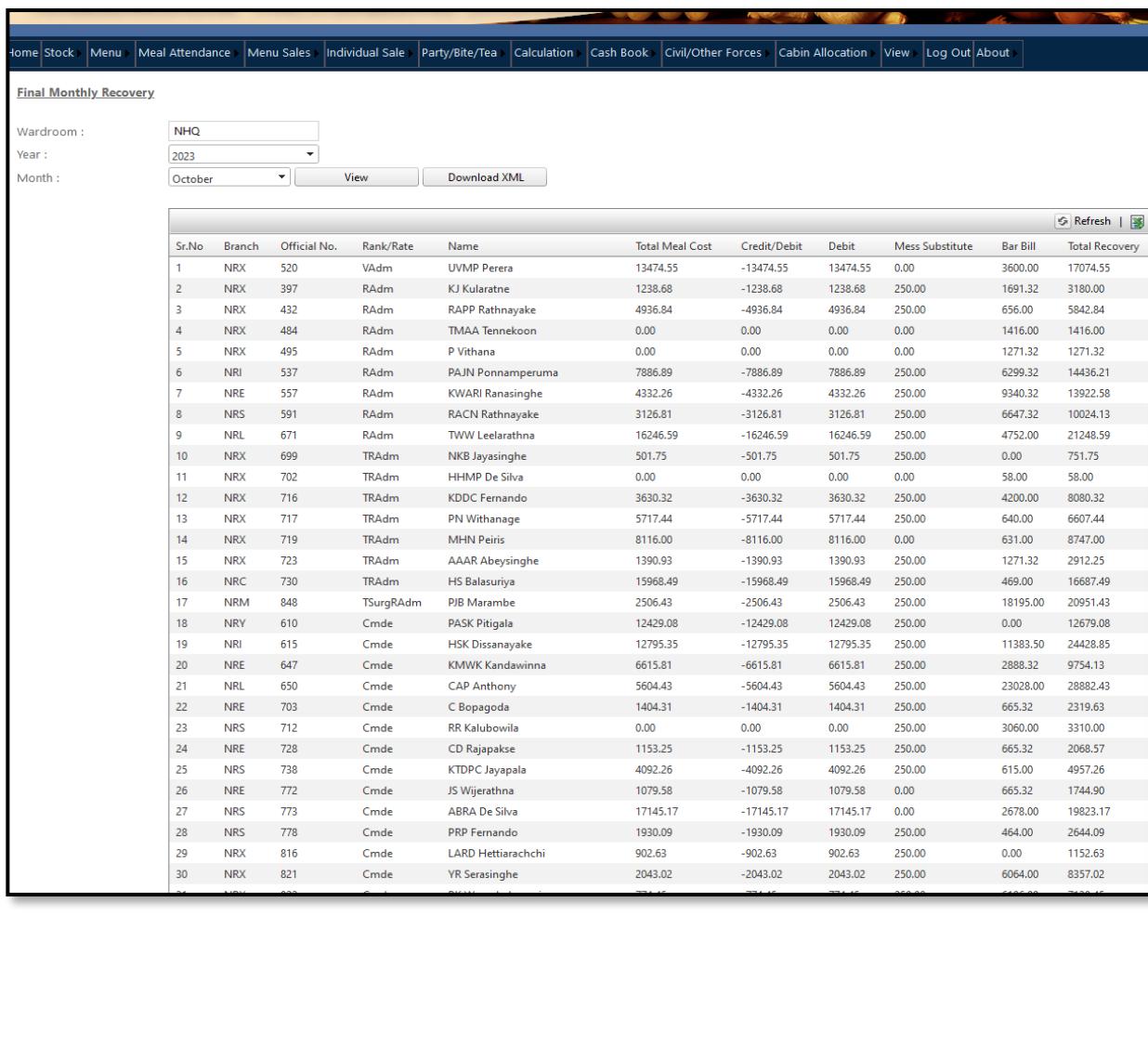
Month : November

Reason : Main Menu Cost - Non-Vegetarian

Sr.No	Service Type	Branch	Official No.	Rank/Rate	Name	Total Days	Sea	Base
1	RNF	NRX	397	RAdm	KI Kularatne	1031.29		
2	RNF	NRE	557	RAdm	KWARI Ranasinghe	810.9		
3	RNF	NRS	591	RAdm	RACN Rathnayake	460.72		
4	RNF	NRL	671	RAdm	TWW Leelarathna	1492.01		
5	RNF	NRX	699	TRAdm	NKB Jayasinghe	460.72		
6	RNF	NRX	716	TRAdm	KDDC Fernando	589.68		
7	RNF	NRX	717	TRAdm	PN Withanage	1637.12		
8	RNF	NRX	723	TRAdm	AAAR Abeyasinghe	1050.4		
9	RNF	NRS	738	TRAdm	KTDPC Jayapala	1050.4		
10	RNF	NRM	848	TSurgRAdm	PJB Marambe	1492.01		
11	RNF	NRY	610	Cmde	PASK Pitigala	972.59		
12	RNF	NRI	615	Cmde	HSK Dissanayake	1031.29		
13	RNF	NRE	647	Cmde	KMWK Kandawinna	2540.43		
14	RNF	NRL	650	Cmde	CAP Anthony	5487.2		
15	RNF	NRS	713	Cmde	BWDMMPK Dissanayake	3977.31		
16	RNF	NRS	778	Cmde	PRP Fernando	1492.01		
17	RNF	NRX	816	Cmde	LARD Hetiarachchi	1492.01		
18	RNF	NRX	821	Cmde	YR Serasinghe	1996.66		
19	RNF	NRX	826	Cmde	SI Kumara	589.68		
20	RNF	NRT	866	Cmde	CV Ranawera	849.13		
21	RNF	NRL	837	TCmde	MDCPK Gunathilake	965.37		
22	RNF	NRX	847	TCmde	HIA Gunawardana	441.61		
23	RNF	NRC	959	TCmde	KR Gunasinghe	1492.01		
24	RNF	NRX	963	TCmde	JMBSB Jayaweera	1094.33		
25	RNF	NRI	746	Capt	KS Dissanayake	1139.67		

Table 5.26: Test case for View Monthly officer list for authorization

Test Case ID	026
Test Case Name	View Final Monthly Recovery List
Steps to be followed	<ol style="list-style-type: none"> 1. Select Year and Month 2. Click ‘View’ button
Test Data	<p>Year = “2023” Month = “November”</p>
Expected Result	Display final recovery in the NHQ wardroom during the month of November.
Pass/Fail	Pass



The screenshot shows a web-based application titled "Final Monthly Recovery". The header includes links for Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About. Below the header, there are filters for Wardroom (set to NHQ), Year (set to 2023), and Month (set to October). There are also "View" and "Download XML" buttons. The main content area displays a table of recovery data for November 2023. The table has columns for Sr.No, Branch, Official No., Rank/Rate, Name, Total Meal Cost, Credit/Debit, Debit, Mess Substitute, Bar Bill, and Total Recovery. The data lists numerous individuals with their respective details and recovery amounts.

Sr.No	Branch	Official No.	Rank/Rate	Name	Total Meal Cost	Credit/Debit	Debit	Mess Substitute	Bar Bill	Total Recovery
1	NRX	520	VAdm	UVMP Perera	13474.55	-13474.55	13474.55	0.00	3600.00	17074.55
2	NRX	397	RAdm	KJ Kularatne	1238.68	-1238.68	1238.68	250.00	1691.32	3180.00
3	NRX	432	RAdm	RAPP Rathnayake	4936.84	-4936.84	4936.84	250.00	656.00	5842.84
4	NRX	484	RAdm	TMAA Tennekoon	0.00	0.00	0.00	0.00	1416.00	1416.00
5	NRX	495	RAdm	P Vithana	0.00	0.00	0.00	0.00	1271.32	1271.32
6	NRI	537	RAdm	PAJN Ponnampерuma	7886.89	-7886.89	7886.89	250.00	6299.32	14436.21
7	NRE	557	RAdm	KWARI Ranasinghe	4332.26	-4332.26	4332.26	250.00	9340.32	13922.58
8	NRS	591	RAdm	RACN Rathnayake	3126.81	-3126.81	3126.81	250.00	6647.32	10024.13
9	NRL	671	RAdm	TWW Leelarathna	16246.59	-16246.59	16246.59	250.00	4752.00	21248.59
10	NRX	699	TRAdm	NKB Jayasinghe	501.75	-501.75	501.75	250.00	0.00	751.75
11	NRX	702	TRAdm	HHMP De Silva	0.00	0.00	0.00	0.00	58.00	58.00
12	NRX	716	TRAdm	KDDC Fernando	3630.32	-3630.32	3630.32	250.00	4200.00	8080.32
13	NRX	717	TRAdm	PN Withanage	5717.44	-5717.44	5717.44	250.00	640.00	6607.44
14	NRX	719	TRAdm	MHN Peiris	8116.00	-8116.00	8116.00	0.00	631.00	8747.00
15	NRX	723	TRAdm	AAAR Abeysinghe	1390.93	-1390.93	1390.93	250.00	1271.32	2912.25
16	NRC	730	TRAdm	HS Balasuriya	15968.49	-15968.49	15968.49	250.00	469.00	16687.49
17	NRM	848	TSurgRAdm	PJB Marambe	2506.43	-2506.43	2506.43	250.00	18195.00	20951.43
18	NRY	610	Cmde	PASK Pitigala	12429.08	-12429.08	12429.08	250.00	0.00	12679.08
19	NRI	615	Cmde	HSK Dissanayake	12795.35	-12795.35	12795.35	250.00	11383.50	24428.85
20	NRE	647	Cmde	KMWK Kandawinna	6615.81	-6615.81	6615.81	250.00	2888.32	9754.13
21	NRL	650	Cmde	CAP Anthony	5604.43	-5604.43	5604.43	250.00	23028.00	28882.43
22	NRE	703	Cmde	C Bopagoda	1404.31	-1404.31	1404.31	250.00	665.32	2319.63
23	NRS	712	Cmde	RR Kalubowila	0.00	0.00	0.00	250.00	3060.00	3310.00
24	NRE	728	Cmde	CD Rajapakse	1153.25	-1153.25	1153.25	250.00	665.32	2068.57
25	NRS	738	Cmde	KTDPC Jayapala	4092.26	-4092.26	4092.26	250.00	615.00	4957.26
26	NRE	772	Cmde	JS Wijerathna	1079.58	-1079.58	1079.58	0.00	665.32	1744.90
27	NRS	773	Cmde	ABRA De Silva	17145.17	-17145.17	17145.17	0.00	2678.00	19823.17
28	NRS	778	Cmde	PRP Fernando	1930.09	-1930.09	1930.09	250.00	464.00	2644.09
29	NRX	816	Cmde	LARD Hettiarachchi	902.63	-902.63	902.63	250.00	0.00	1152.63
30	NRX	821	Cmde	YR Serasinghe	2043.02	-2043.02	2043.02	250.00	6064.00	8357.02
31	NRI	822	Cmde	OMAN	774.15	-774.15	774.15	250.00	2445.02	7264.15

Table 5.27: Test case for View Final Monthly Recovery List

Table 5.28 – Test case for View Final Monthly Recovery List

Test Case ID	027
Test Case Name	View Final Monthly Recovery Individual recovery List
Steps to be followed	<ol style="list-style-type: none"> Select Official No, Service Type, Year and Month Click ‘Person’ button Click ‘View Details’ button
Test Data	<p>Official No. = “3147” Service Type = “RNF” Year = “2023” Month = “November”</p>
Expected Result	Display final individual recovery in the NHQ wardroom during the month of November.
Pass/Fail	Pass

Home | Stock | Menu > Meal Attendance | Menu Sales | Individual Sale | Party/Bite/Tea | Calculation | Cash Book | Civil/Other Forces | Cabin Allocation | View > Log Out | About

Individual Meal Recovery Per Month

Official No :
Service Type :

Rank : Lieutenant Commander
Name : Welepathirage Heshanthi Kalani Gunasoma
Permanent Base : Parakrama

Year :
Month :
Wardroom : NHQ

Menu Cost :

Sr.No	Meal Date	Cost	Meal Count	Remarks
1	2023/11/14	478.08	1	Dinner
2	2023/11/22	444.29	1	Dinner
3	2023/11/28	382.42	1	Dinner
4	2023/11/29	387.77	1	Dinner
5	2023/11/7	182.67	1	Supper
6	2023/11/7	438.49	1	Dinner

Total Menu Cost : **2313.72**

Sr.No	Sale Date	Item	Unit Price	Sale Qty.	Messurement	Price
1	2023/11/1	Rice Raw White	220.00	0.4	Kg	88
2	2023/11/1	Eggs Hen	48.00	4	NOs	192
3	2023/11/1	Coconut With Out Husked	141.414	0.6	Kg	84.14
4	2023/11/1	B'Onion	240.00	0.17	Kg	39.6
5	2023/11/1	Chilli Green	450.00	0.03	Kg	13.5
6	2023/11/1	Tomatoes	200.00	0.04	Kg	8
7	2023/11/1	Lime	1800.00	0.02	Kg	39.73
8	2023/11/1	Table Salt	215.00	0.01	Kg	2.15
9	2023/11/2	Eggs Hen	46.00	2	NOs	92
10	2023/11/2	Carrot	280.00	0.07	Kg	19.6
11	2023/11/2	Leeks	253.333	0.07	Kg	17.73
12	2023/11/2	B'Onion	240.00	0.03	Kg	7.2
13	2023/11/2	Chicken Breast	1450.00	0.72	Kg	1044
14	2023/11/2	Raiam dewani batha	742.85	0.15	Kg	111.43

Table 5.28: Test case for View Final Monthly Recovery List

5.4. User Evaluation

The Victualing Management System stands as the optimal solution for addressing the pressing challenges within the victualing section of the Sri Lanka Navy. I am confident in my ability to create an appealing and user-friendly interface that captures the attention of end users. In addition to this, a well-designed menu navigation bar will be implemented to enhance the overall user experience. Careful consideration has been given to the design of interface and fonts, aligning them with the preferences of the target audience. A thorough user evaluation has been conducted upon the completion of the web application, revealing insights obtained from a recent assessment.

In the system's user evaluation phase, questionnaires were employed as a means to gather valuable feedback from users. Given the current situation in Sri Lanka, user evaluations were efficiently collected through Google Forms and subsequently analyzed. The chosen software engineering model for this project was the RAD (Rapid Application Development) model, which emphasizes iterative development with continuous user feedback.

Under the RAD model, evaluations were obtained at the time of delivery for each component of the system. These evaluations were primarily facilitated through review meetings, during which feedback was collected and utilized for making necessary modifications. This iterative approach ensured that user perspectives were incorporated into the development process, enhancing the responsiveness of the software to user needs.

A list of predefined criteria, coupled with practical testing, was employed by software evaluators to verify the fulfillment of project objectives. This criterion not only provided a structured framework for assessment but also enabled evaluators to systematically gauge the success of each project component. The feedback received during review meetings played a pivotal role in guiding modifications to address any identified shortcomings.

Table 5.30 was specifically designed to collect feedback from end users of the system. The questionnaire was distributed to users, and the returned modules were carefully evaluated to obtain

real customer feedback. This user-centric approach aimed to ensure that the system met user expectations and requirements effectively.

In the analysis of collected feedback, a Likert scale was utilized as a measure. The Likert scale provides a quantitative measure of user sentiment, allowing evaluators to discern the intensity of opinions and attitudes towards various aspects of the system. This systematic approach to feedback analysis not only facilitated a quantitative understanding of user satisfaction but also enabled the identification of specific areas for improvement.

The integration of user evaluations at various stages of the RAD model ensured a dynamic and responsive development process. It fostered collaboration between developers and end-users, resulting in a system that aligns closely with user needs. The iterative nature of the RAD model, combined with the structured evaluation process, contributed to the overall success of the project by enhancing software quality and user satisfaction.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
(1)	(2)	(3)	(4)	(5)

Table 5.29 – Likert scale Options and Value

The project's user evaluation concentrated on the assessment of specific subject areas.

- Appearance
- Usability
- Functionality
- Performance
- Security

Kindly refer Appendix ‘B’ for the questionnaire provided.

5.4.1. User Evaluation Results

The results have been gathered from Google Forms and systematically evaluated across main categories.

5.4.1.1. User Evaluation Result for Appearance

The outcomes for the four questions posed within the appearance category have been consolidated and presented in Table 5.31 as the conclusive evaluation results. Additionally, to enhance the visual representation, a graphical illustration (Figure 5.2) was crafted to present the results in a more refined manner.

Q1. Does the design appropriate for the purpose of the site and for the intended audience?

Q2. Is the page layout balanced, clean and uncluttered?

Q3. Are your eyes directed to the content or important page elements?

Q4. Is important content (such as navigation, site and page identification) visible without scrolling?

Likert Scale	Individual Results				Total Result	In Percentage (%)
	Q1	Q2	Q3	Q4	T	
Strongly Disagree	0	0	0	0	0	0
Disagree	0	0	1	0	1	0.5
Neutral	7	5	6	4	22	11
Agree	15	15	23	29	82	41
Strongly Agree	28	30	20	17	95	47.5

Table 5.30 – User Evaluation Result for Appearance

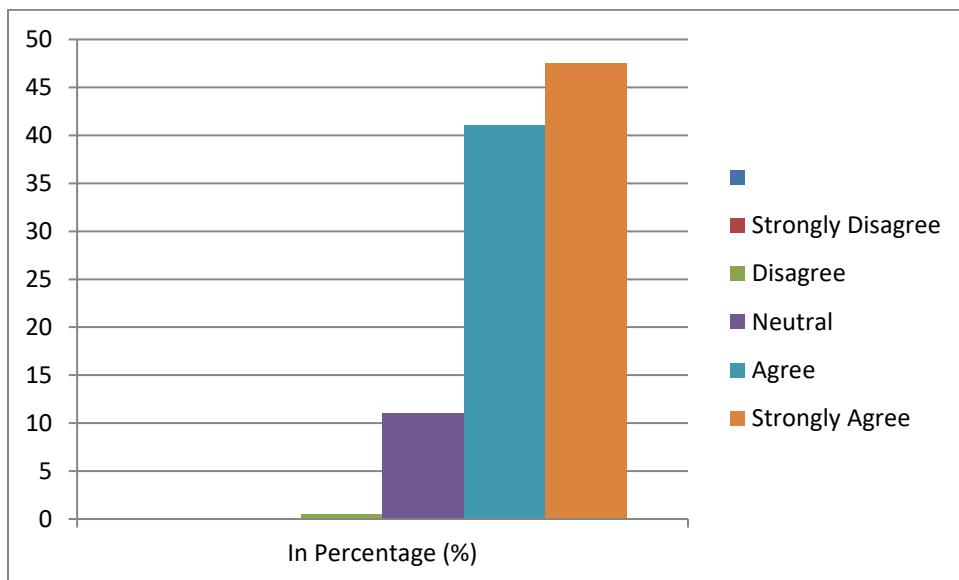


Figure 5.2 – User Evaluation Result graphical representation for Appearance

The graph unmistakably illustrates a prevailing positive sentiment among users regarding the user interfaces of the proposed system. The overwhelming majority of users have expressed satisfaction and approval, as evidenced by the upward trend in positive responses. This favorable reception indicates that the design and functionality of the user interfaces have resonated well with the user base.

The positive feedback from users suggests that the proposed system has successfully met or exceeded their expectations in terms of usability, aesthetics, and overall user experience. Such a positive reception is not only indicative of a well-designed interface but also implies a high level of user engagement and satisfaction.

This encouraging response from users serves as a valuable affirmation of the effectiveness of the system's user interfaces. It is a testament to the successful alignment of the system's design with user preferences and needs. The insights derived from this positive sentiment can be leveraged to reinforce the strengths of the current design and potentially inform future enhancements or updates.

5.4.1.2. User Evaluation Result for Usability

The results for the four questions asked under the usability category were summarized, and Table 5.32 displays the final evaluation results. Additionally, a graphical representation (Figure 5.3) was developed to present the results in a more elegant manner.

Q5. List view is helpful

Q6. Navigation methods are easy to understand

Q7. Helps are available

Q8. Data validation and constraint are up to the point

Likert Scale	Individual Results				Total Result	In Percentage (%)
	Q5	Q6	Q7	Q8		
Strongly Disagree	0	0	0	0	0	0
Disagree	0	2	5	0	7	3.5
Neutral	0	19	6	2	27	13.5
Agree	24	21	26	35	106	53
Strongly Agree	26	8	13	13	60	30

Table 5.31 – User Evaluation Result for Usability

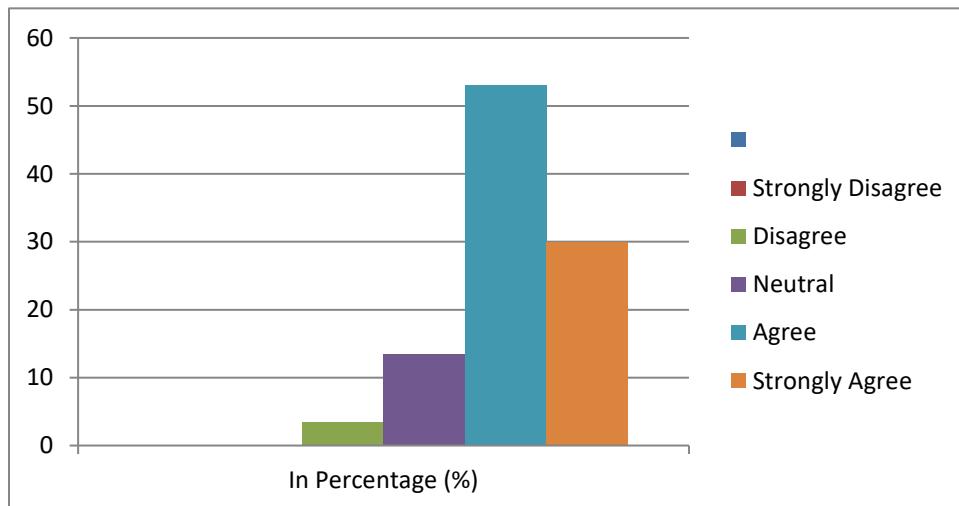


Figure 5.3– User Evaluation Result graphical representation for Usability

The graph provides a clear and positive depiction of user feedback regarding the usability of the proposed system. Almost all users express a favorable sentiment, suggesting a high level of satisfaction with the system's user-friendliness and overall usability.

This positive trend in user feedback indicates that the design and functionality of the system align well with user expectations. Users appear to find the app intuitive, easy to navigate, and effective in meeting their needs. Such positive responses are indicative of a successful implementation of user-centered design principles, where the app's interface and features resonate positively with the target audience.

The positive feedback on usability also suggests that any user interface modifications, such as the adjustment of the main color and the switch to any interface, have been well-received and contribute positively to the overall user experience.

It's worth acknowledging the significance of positive usability feedback, as it directly correlates with user satisfaction, engagement, and the likelihood of continued usage. The developers and designers involved in the project can take this positive feedback as validation of their efforts to create an app that not only meets functional requirements but also provides a smooth and enjoyable user experience.

Moving forward, it would be beneficial to continue monitoring user feedback, especially as the system undergoes further updates or enhancements. This iterative feedback loop ensures that any future modifications or features are aligned with user expectations, contributing to the ongoing success and improvement of the system.

5.4.1.3. User Evaluation Result for Functionality

The results for the four questions asked under the Functionality category were summarized, and Table 5.33 shows the final evaluation results. Subsequently, a graphical representation (Figure 5.3) was developed to present the results in a more elegant way.

Q9. Does the site provide sufficient assistant to get what you want done?

Q10. Will you be able to browse the site without an issue?

Q11. All the functionalities that required are available

Q12. Able to provide satisfactory output to the users

Likert Scale	Individual Results				Total Result	In Percentage (%)
	Q9	Q10	Q11	Q12		
Strongly Disagree	0	0	1	0	1	0.5
Disagree	0	2	2	3	7	3.5
Neutral	2	6	4	9	21	10.5
Agree	36	27	29	19	111	55.5
Strongly Agree	12	15	14	19	60	30

Table 5.32 – User Evaluation Result for Functionality

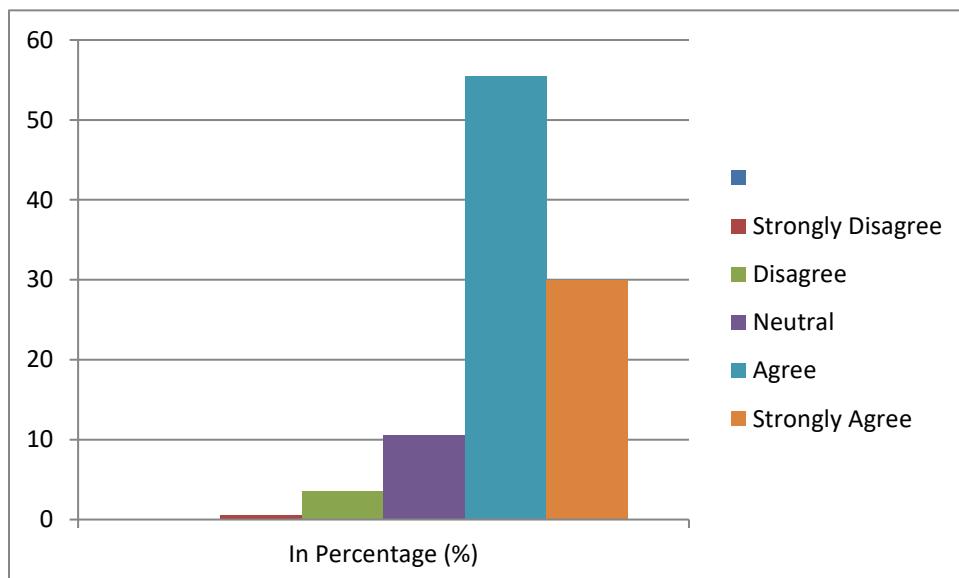


Figure 5.4– User Evaluation Result graphical representation for Functionality

The graphical representation, Figure 5.4, strongly indicates a unanimous sentiment among users regarding the system's functionality. Almost all users, as clearly demonstrated in the graph, share the belief that the system is capable of providing all the functionalities required. This overwhelmingly positive response suggests a high level of confidence and satisfaction among users in the system's ability to meet their needs and expectations.

The consistency in user perception regarding the system's functionality is a noteworthy achievement. It signifies that the development team has successfully aligned the system's features with user requirements, creating a robust and comprehensive solution. The positive consensus also implies that any modifications or updates made to enhance functionality, as indicated by the feedback and evaluation process, have been well-received by the user base.

Such a positive reception of the system's functionalities bodes well for its adoption and continued usage. User confidence in the system's capability to deliver the required functionalities is a key indicator of its success in fulfilling its intended purpose.

Moving forward, it would be beneficial to leverage this positive feedback to inform future development decisions and to maintain a user-centric approach. Regularly gathering user feedback and adapting the system based on evolving needs will contribute to its sustained success and user satisfaction over time.

5.4.1.4. User Evaluation Result for Performance

The results for the four questions asked under the Performance category were summarized, and Table 5.15 displays the final evaluation results. Subsequently, a graphical representation (Figure 5.5) was developed to present the results in a more elegant manner.

Q13. Response time for request is sufficient

Q14. Smoothly runs within any browser

Q15. Work well in background and do not lost the state

Q16. Works fine with huge amount of data

Likert Scale	Individual Results				Total Result	In Percentage (%)
	Q13	Q14	Q15	Q16	T	
Strongly Disagree	0	0	0	0	0	0
Disagree	3	0	0	0	3	1.5
Neutral	6	0	9	0	15	7.5
Agree	18	15	21	14	68	34
Strongly Agree	23	35	20	36	114	57

Table 5.33 – User Evaluation Result for Performance

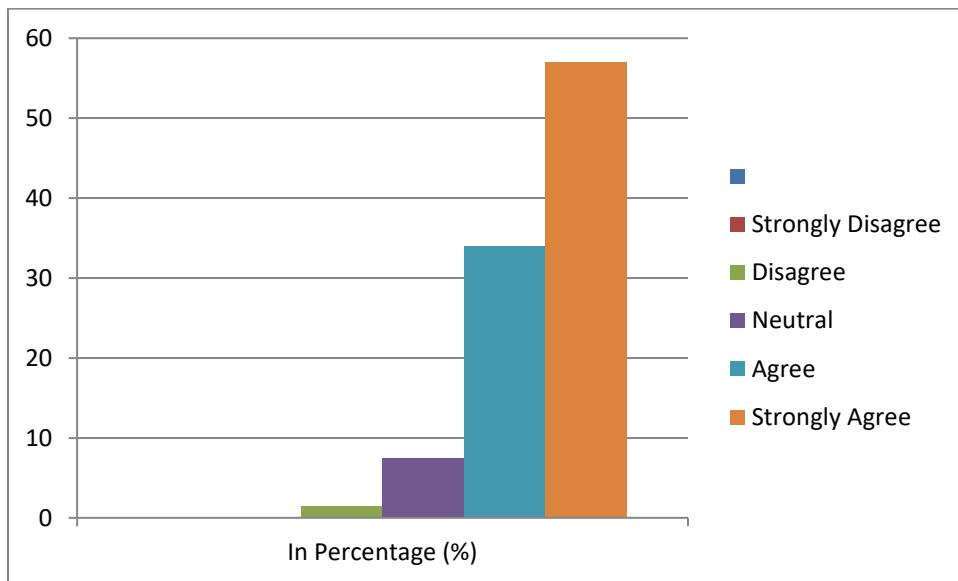


Figure 5.5– User Evaluation Result graphical representation for Performance

The graphical representation, likely captured in Figure 5.5, strongly communicates a consensus among users regarding the performance of the proposed system. The clear trend in the graph indicates that almost all users agree or strongly agree that the performance of the system is satisfactory. This widespread positive sentiment is a significant endorsement of the system's capabilities and efficiency.

The acknowledgment of satisfactory performance from the majority of users is a notable achievement. It suggests that the system not only meets functional requirements but also operates smoothly and responsively, contributing to a positive user experience. The positive feedback on performance is crucial, as it directly impacts user satisfaction, engagement, and the overall success of the application.

The development team can take this positive evaluation as an affirmation of their efforts to optimize the app's performance. It's an indicator that any performance enhancements or optimizations made during the development process have been effective in meeting or exceeding user expectations.

Continued monitoring of user feedback on performance, especially as the system undergoes updates or expands in functionality, will be essential. This iterative feedback loop ensures that the system's performance remains robust and responsive to the evolving needs of users. Overall, the positive response regarding performance is a strong foundation for the system's success and its continued acceptance among users.

5.4.1.5. User Evaluation Result for Security

The results for the four questions asked under the Security category were summarized, and Table 5.34 displays the final evaluation results. Subsequently, a graphical representation (Figure 5.6) was developed to present the results in a more elegant manner.

Q17. Login and Logout works fine

Q18. Can access relevant jobs only

Q19. Can access relevant Inventory information only

Q20. Can access relevant officers information only

Likert Scale	Individual Results				Total Result	In Percentage (%)
	Q17	Q18	Q19	Q20	T	
Strongly Disagree	0	0	0	0	0	0
Disagree	0	0	0	0	0	0
Neutral	0	0	0	4	4	2
Agree	6	3	2	6	17	8.5
Strongly Agree	44	47	48	40	179	89.5

Table 5.34 – User Evaluation Result for Security

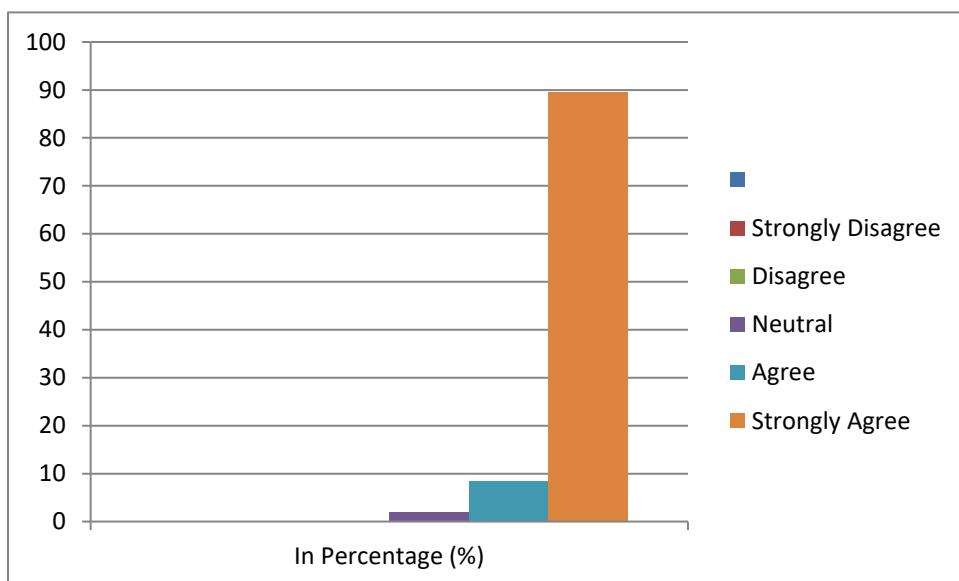


Figure 5.6– User Evaluation Result graphical representation for Security

The graph distinctly portrays a consensus among users, with an overwhelming majority acknowledging that the performance of the proposed system is satisfactory. The data reveals a high level of agreement among users, indicating a positive perception of the system's functionality and overall performance.

The widespread acceptance of the system's satisfactory performance is indicative of its successful alignment with user expectations and requirements. Users seem to find the system's performance to be in line with or exceeding their anticipated standards. This collective approval implies a successful development and implementation of features that contribute to a smooth and efficient user experience.

The positive sentiment expressed in the graph not only reflects the effectiveness of the system's performance but also suggests a high degree of user satisfaction. Such a consensus among users is valuable feedback that can be leveraged to reinforce the strengths of the system's performance and identify potential areas for further improvement.

In conclusion, the graph effectively communicates that users universally accept and find satisfactory the performance of the proposed app. This widespread approval is a positive indicator of the system's effectiveness in meeting user expectations and ensuring a satisfactory user experience.

5.4.1.6. User Evaluation Result Summary

The results for all the categories were summarized, and Table 5.35 displays the final evaluation summary results. Subsequently, a graphical representation (Figure 5.7) was developed to present the results in a more elegant manner.

Likert Scale	Appearance	Usability	Functionality	Performance	Security	Total	In Percentage (%)
Strongly Disagree	0	0	1	0	0	1	0.1
Disagree	1	7	7	3	0	18	1.8
Neutral	22	27	21	15	4	89	8.9
Agree	82	106	111	68	17	384	38.4
Strongly Agree	95	60	60	114	179	508	50.8

Table 5.35 – User Evaluation Result for Summary

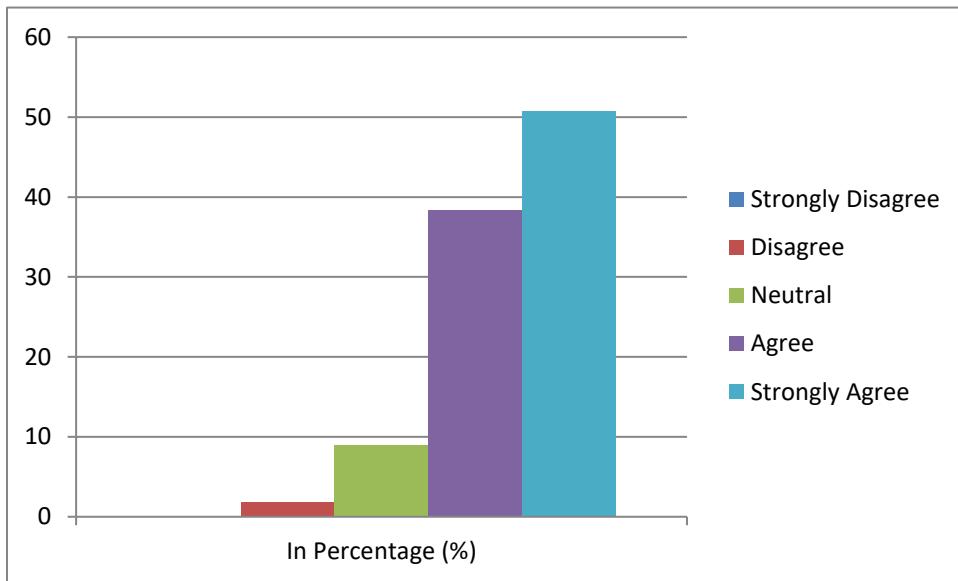


Figure 5.7– User Evaluation Result graphical representation for Summary

The graph provides a clear snapshot of user acceptance levels for the proposed system, revealing that a significant majority, specifically 89.2% of users, have expressed agreement with the system. This high percentage is composed of users who either "Agree" or "Strongly Agree" with the application, showcasing a robust positive sentiment towards the system. Conversely, a minor percentage, accounting for only 8.9% of users, finds them in a "Neutral" situation.

This overwhelming agreement from the majority of users is a positive indicator of the system's acceptance and alignment with user expectations. The "Neutral" category, while representing a smaller portion, could suggest a group of users who may have mixed feelings or require further clarification on certain aspects of the system.

Analyzing the reasons behind the "Neutral" responses, such as through additional surveys or targeted feedback sessions, could provide valuable insights into potential areas for improvement or clarification. Nonetheless, the substantial percentage of users expressing agreement underscores the success of the proposed application in resonating with its user base.

These findings affirm the effectiveness of the development process, user engagement strategies, and the overall alignment of the application with user needs. Regularly monitoring user sentiments and feedback will continue to be essential in maintaining high levels of user satisfaction and ensuring the system's ongoing success.

Chapter 6 – Conclusion

The Victualing Management System is set to revolutionize operations within the Sri Lanka Navy, offering advanced features designed to streamline processes and significantly enhance efficiency. To fully unlock the system's potential, it is essential that all officers and sailors collaborate closely, leveraging their collective expertise to maximize its benefits.

Originally developed as a web-based platform, the system is poised to evolve with plans for a mobile application. This shift reflects the increasing reliance on mobile devices in daily life, making mobile access a critical tool for efficiently utilizing vital resources. By extending the system to mobile platforms, the Navy can provide more responsive, user-friendly services that align with the changing needs of its personnel.

While the current focus is on optimizing the command wardroom's operations, future plans include expanding the system's capabilities to all wardrooms across the Sri Lanka Navy. This broader implementation will offer customized solutions to enhance productivity and efficiency for wardroom staff and their officers alike. The system's flexibility and scalability promise to improve service delivery and contribute to operational excellence.

Through strategic partnerships and ongoing innovation, the Victualing Management System has the potential to not only transform naval operations but also inspire advancements in the broader hospitality sector. This initiative is a step toward greater efficiency and service quality across industries, fostering a culture of excellence.

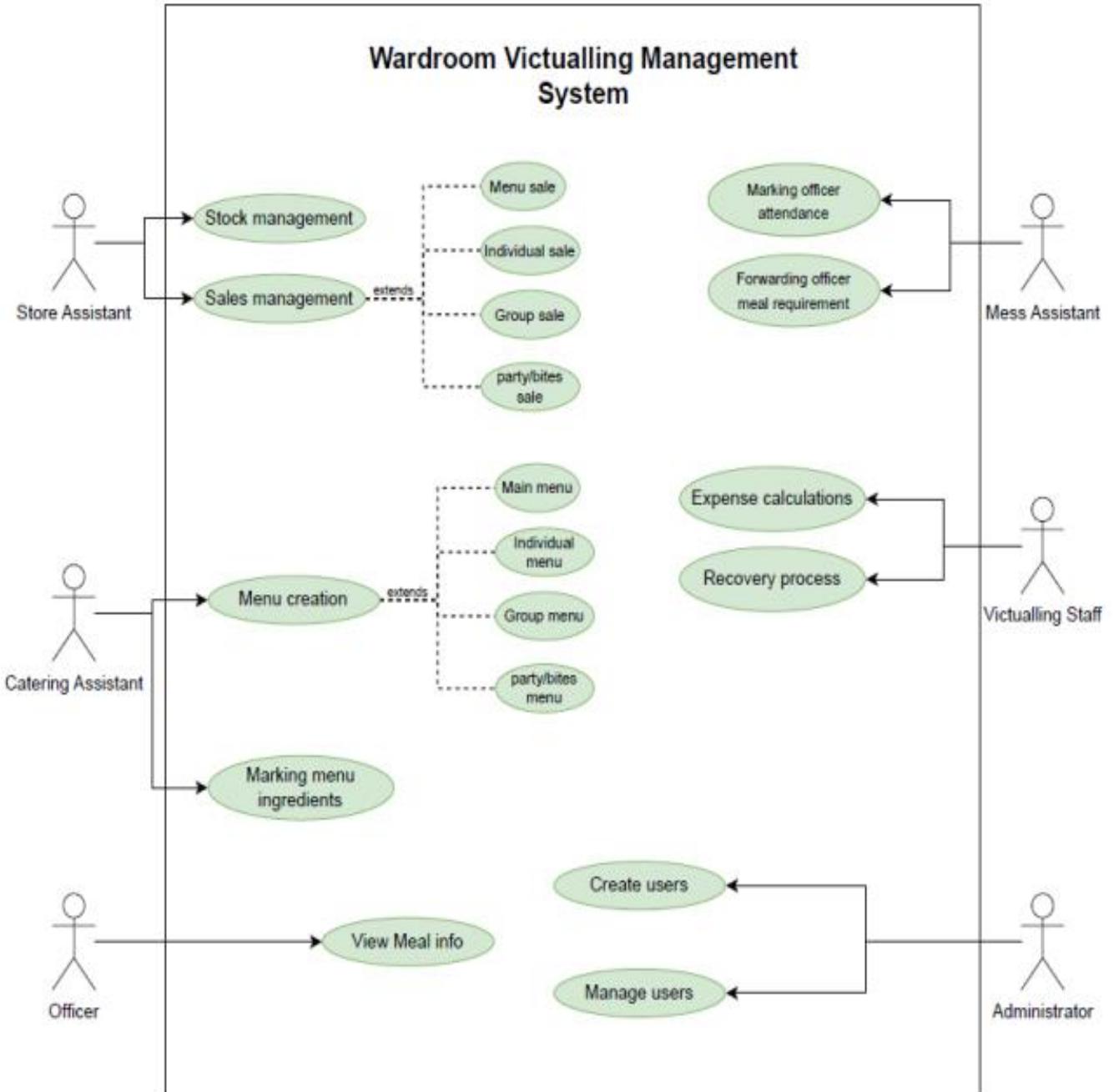
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Appendices

Appendix “A” - Use case diagram



Appendix B – Web Site Evaluation Form

Web Site Evaluation Form

Appearance

1. Does the design appropriate for the purpose of the site and for the intended audience?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
2. Is the page layout balanced, clean and uncluttered?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
3. Are your eyes directed to the content or important page elements?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
4. Is important content (such as navigation, site and page identification) visible without scrolling?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

Usability

5. List view are helpful
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
6. Navigation methods are easy to understand
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
7. Helps are available
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
8. Data validation and constraint are up to the pint
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

Functionality

9. Does the site provide sufficient assistant to get what you want done?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree
10. Will you be able to browse the site without an issue?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

11. All the functionalities that required are available
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

12. Able to provide satisfactory output to the users
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

Performance

13. Response time for request is sufficient
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

14. Smoothly runs within any browser
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

15. Work well in background and do not lost the state
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

16. Works fine with huge amount of data
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

Security

17. Login and Logout works fine
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

18. Can access relevant jobs only
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

19. Can access relevant Inventory information only
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

20. Can access relevant officers information only
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree

Appendix C –Main Interfaces.

Login Page

The purpose of this webpage is to facilitate user authentication for a diverse range of individuals. Through this centralized login interface, users can securely access their respective accounts within the system. Whether it's administrators, CA, MA, SA and Officers, this webpage provides a unified entry point for all authorized users. By offering a streamlined and secure login process, the webpage ensures efficient access control and user authentication across various roles and functionalities within the system.

The screenshot shows the login page of the Wardroom Victualing System. At the top, there is a decorative banner with a blue and white emblem on the left, followed by the text "WARDROOM VICTUALING SYSTEM" in bold capital letters. Below the banner, the main content area has a dark blue header bar with three buttons: "Home", "Log Out", and "About". The main body of the page is white and contains a login form. On the left, there are two input fields: one for "User Name" and one for "Password". To the right of these fields is a "Login" button. The background of the page features a collage of various fruits and vegetables, including apples, grapes, onions, and carrots, arranged in a basket-like pattern.

>Login Page

Home Page

Upon successfully logging into the web application, users will be greeted by this welcoming page. It serves as the initial landing point, providing users with a seamless transition into the application's interface. Here, users can access various features, navigate through different sections, and initiate their tasks within the application. This welcome page is designed to offer a user-friendly and intuitive experience, facilitating smooth interaction and efficient utilization of the application's functionalities.



Home Page

Registration Page

Through this user interface, new users have the ability to create an account and register with the system. It offers a straightforward and user-friendly experience, guiding individuals through the registration process step by step. By providing essential information and adhering to the system's registration requirements, users can successfully create their accounts and gain access to the platform's features and functionalities. This interface ensures a seamless onboarding experience for new users, facilitating their integration into the system with ease.

Registration Page

Add Stock Item Page

To expand stock inventory, can utilize the "Add Stock Item" feature within the system. This functionality empowers users to seamlessly incorporate new items into the stock database. By navigating to the designated section and filling out relevant details such as date, received from, bill no., item, unit price, on charge quantity and measurement, users can efficiently add new items to the stock inventory. This ensures that inventory remains comprehensive and up-to-date, enabling smooth operations and fulfilling the evolving needs of SLN wardroom.

WARDROOM VICTUALING SYSTEM

Home | Stock | Menu | Meal Attendance | Menu Sales | Individual Sale | Party/Bite/Tea | Calculation | Cash Book | Civil/Other Forces | Cabin Allocation | View | Log Out | About

Add Stock Items

Wardroom : NHQ

On Charge Date :

Received From : ---Select---

Bill No. :

Item Category : ---Select---

Item :

Unit Price :

On Charge Qty :

Item Measurement : ---Select---

Reason : ---Select---

Official No. : ex. 1234

Add Item

Bill Discount/Rounding off : Add Item

Add Stock Item Page

Create Menu Page

Through this interface, CA can effortlessly create a daily menu tailored to the specific needs and preferences of their establishment. By accessing the designated menu creation feature, users can navigate through a user-friendly interface that enables them to select date, reason, meal category and menu items for each menu. With intuitive drag-and-drop functionality and customizable options, users can curate a diverse and appealing menu lineup for breakfast, lunch,

dinner, and any additional meal periods. This interface streamlines the menu creation process, empowering users to efficiently plan and organize daily dining offerings with ease and precision.

Create Menu Page

Menu Item Sale Page

To facilitate the sale of menu items can utilize the "Menu Item sale" feature accessible through the system interface. This functionality enables seamless transaction processing for menu items available for purchase. Users can navigate to the designated section, select the desired menu item(s) to be sold, specify the quantity, and complete the sale transaction. With user-friendly prompts and clear instructions, this interface ensures efficient handling of sales, providing a seamless experience for both users and customers. By leveraging this feature, users can effectively manage the sale of menu items, contributing to streamlined operations and enhanced user satisfaction.

WARDROOM VICTUALING SYSTEM

Home Stock Menu Meal Attendance Menu Sales Individual Sale Party/Bite/Tea Calculation Cash Book Civil/Other Forces Cabin Allocation View Log Out About

Menu Item Sale

Sale Date :	<input type="text"/>	<input type="button" value="Calendar"/>	
Reason :	<input type="button" value="...Select..."/>		
Group Type :	<input type="button" value="Normal Menu"/>		
Vegetarian/Non-Vegetarian :	<input type="button" value="...Select..."/>		
Wardroom :	NHQ	<input type="button" value="View Menu"/>	
Menu :	View Ingredients List		
Total Non-Vegetarian Count :			
Total Vegetarian Count :			
Total Ingredients List			

ID	Item ID	Item	From	Price	Mesu	Stock Qty.	Sale Qty.	Current Qty.
Get Ingredients Deduction List								
<input type="button" value="Get Hand Stock"/>								
<input type="button" value="Update Stock"/>								

Total Cost for Menu :

Menu Item Sale Page

Individual Item Sale Page

For individual item sales, users can leverage the dedicated "Individual Item Sale" feature within the system interface. This functionality streamlines the process of selling specific items to customers, offering a seamless transaction experience. Users can access the designated section, select the desired item(s) for sale, specify the quantity, and proceed with the transaction. With intuitive prompts and clear navigation, this interface ensures efficient handling of individual item sales, catering to the diverse needs of customers. By utilizing this feature, users can enhance customer service and streamline sales operations, ultimately contributing to improved satisfaction and business efficiency.



WARDROOM VICTUALING SYSTEM

LETTUCE

[Home](#)
[Stock](#)
[Menu](#)
[Meal Attendance](#)
[Menu Sales](#)
[Individual Sale](#)
[Party/Bite/Tea](#)
[Calculation](#)
[Cash Book](#)
[Civil/Other Forces](#)
[Cabin Allocation](#)
[View](#)
[Log Out](#)
[About](#)

Personal Item Sale

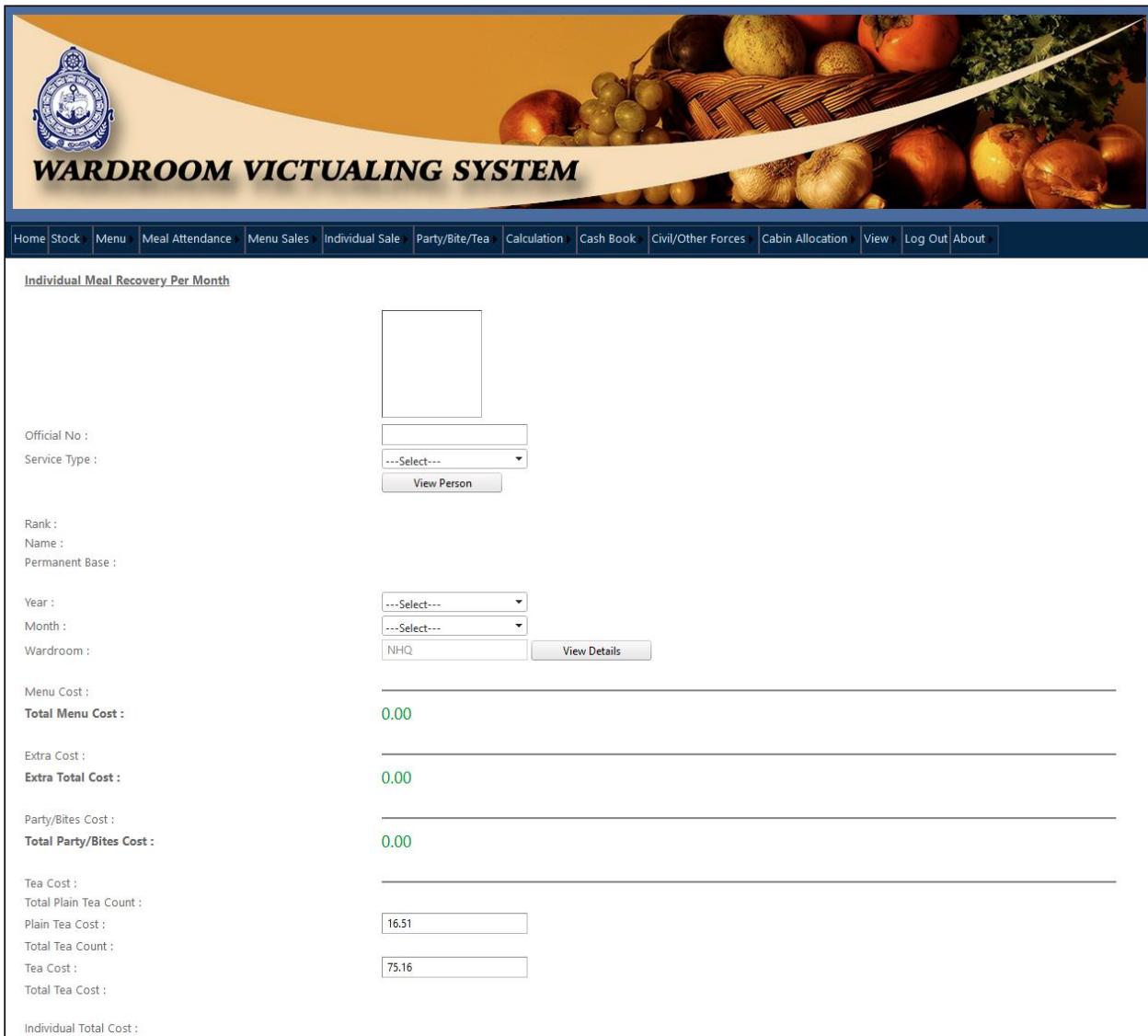
Official No :	<input type="text"/>				
Service Type :	<input type="button" value="...Select..."/> Officer				
O/S :	<input type="button" value="View Person"/>				
Rank :					
Name :					
Permanent Base :					
Service Type :					
Purchase Item Base :	<input type="button" value="4RS(Kaluthara)"/>				
Item Taken By (Official No.):	<input type="text"/> <input type="button" value="...Select..."/> Sailor				
O/S :	<input type="button" value="View Person"/>				
Rank :					
Name :					
Base :					
Sale Date :	<input type="text"/>				
Reason :	<input type="button" value="...Select..."/>				
Wardroom :	<input type="text" value="NHQ"/>				
Bill No. :	<input type="text"/>				
Item Category :	<input type="button" value="...Select..."/>				
Item :	<input type="button" value="...Select..."/>				
Item ID Item From Price Mesu Stock Qty. Sale Qty. Current Qty. To Off.					
<input type="button" value="Get Hand Stock"/>					
<input type="button" value="Update Stock"/>					
<input type="button" value="Print Bill"/>					

Personal Item Sale Page

Individual Meal Recovery per Month Page

Through the system interface, users can access the "View Individual Victualing Profile" feature, enabling them to review detailed profiles of individual customers' victualing activities. This functionality provides a comprehensive overview of each customer's dining preferences, consumption patterns, and transaction history. Users can navigate to the designated section, input

the customer's details, and access their personalized victualing profile. Within the profile, users can view information such as meal preferences, dietary restrictions, credit balances, and transaction records. With user-friendly navigation and intuitive layout, this interface empowers users to gain insights into individual customer behaviors, enabling personalized service and efficient management of victualing operations. By leveraging this feature, users can enhance customer satisfaction and optimize the dining experience for each individual.



The screenshot shows the 'WARDROOM VICTUALING SYSTEM' homepage with a banner featuring a crest and various fruits and vegetables. The main menu bar includes Home, Stock, Menu, Meal Attendance, Menu Sales, Individual Sale, Party/Bite/Tea, Calculation, Cash Book, Civil/Other Forces, Cabin Allocation, View, Log Out, and About. Below the menu, a sub-menu titled 'Individual Meal Recovery Per Month' is displayed. This sub-menu contains fields for Official No (input field), Service Type (dropdown menu with '...Select---'), Rank (input field), Name (input field), Permanent Base (input field), Year (dropdown menu with '...Select---'), Month (dropdown menu with '...Select---'), Wardroom (input field with 'NHQ'), and a 'View Details' button. Further down, there are sections for Menu Cost (Total Menu Cost: 0.00), Extra Cost (Extra Total Cost: 0.00), Party/Bites Cost (Total Party/Bites Cost: 0.00), Tea Cost (Total Plain Tea Count: 16.51, Total Tea Count: 75.16), and Individual Total Cost (input field).

Individual Meal Recovery per Month Page

Reports

Sr.No	Item Code	Item Id	Bill No	Item	On Charge QTY	Item Measurement	Unit Price	Total Cost	
1	40000323	116033	218	Carrot	1.760	Kg	800.00	1408	Delete
2	40000329	116034	218	Chilli Green	01	Kg	1100.00	1100	Delete
3	40000332	116028	218	Cucumber	03	Kg	130.00	390	Delete
4	40002324	116029	218	Curry Leaves	01	Bundle	100.00	100	Delete
5	40000544	116036	218	Kochchi	0.100	Kg	2000.00	200	Delete
6	40000356	116035	218	Lime	01	Kg	200.00	200	Delete
7	40000374	116032	218	Salad Leaves	0.400	Kg	625.00	250	Delete
8	40000103	116031	218	Tamarine	01	Kg	400.00	400	Delete
9	40000384	116030	218	Tomatoes	02	Kg	900.00	1800	Delete

Gross Total Rs: **5848**
Discount Rs: **0**
Net Total Rs: **5848**

On-charge Bill Page



WARDROOM VICTUALING SYSTEM

[Home](#) [Stock](#) [Menu](#) [Meal Attendance](#) [Menu Sales](#) [Individual Sale](#) [Party/Bite/Tea](#) [Calculation](#) [Cash Book](#) [Civil/Other Forces](#) [Cabin Allocation](#) [View](#) [Log Out](#) [About](#)

[View Available Stock with Price](#)

Sr.No	Item Category	Item	Item Measurement	Current Stock	Unit Price	Amount	Received From	Re-Order Level
1	Bakery Product	Bread Sandwich	Packet	01	150.00	150	Cash	
2	Bakery Product	Fudge Cake	NOS	01	4480.00	4480	Cash	
3	Bakery Product	Mushroom Pie	NOS	75	140.00	10500	Cash	
4	Bakery Product Raw Material	Colouring 28 ML	Liter	0.036	7071.428	254.57	Cash	
5	Bakery Product Raw Material	Flour Ata	Kg	0.19	395.00	75.05	Cash	
6	Bakery Product Raw Material	Flour Ata	Kg	01	395.00	395	Cash	
7	Bakery Product Raw Material	Flour Ata	Kg	1	395.00	395	Cash	
8	Bakery Product Raw Material	Flour Ata	Kg	0.5	470.00	235	Cash	
9	Bakery Product Raw Material	Flour Ata	Kg	0.02	520.00	10.4	Cash	
10	Bakery Product Raw Material	Flour Ata	Kg	0.14	550.00	77	Cash	
11	Bakery Product Raw Material	Flour Kurakkan	Kg	0.165	875.00	144.38	Cash	
12	Bakery Product Raw Material	Flour MDK Hopper Red	Kg	0.700	378.571	265	Cash	
13	Bakery Product Raw Material	Flour MDK Red	Kg	2.775	300.00	832.5	Cash	
14	Bakery Product Raw Material	Flour MDK Red	Kg	2	320.00	640	Cash	
15	Bakery Product Raw Material	Flour MDK Red	Kg	0.09	435.00	39.15	Cash	
16	Bakery Product Raw Material	Flour MDK Red	Kg	2.265	435.00	985.28	Cash	
17	Bakery Product Raw Material	Flour MDK White	Kg	1	320.00	320	Cash	
18	Bakery Product Raw Material	Flour MDK White	Kg	2	320.00	640	Cash	
19	Bakery Product Raw Material	Flour MDK White	Kg	4	320.00	1280	Cash	
20	Bakery Product Raw Material	Flour MDK White	Kg	5	320.00	1600	Cash	
21	Bakery Product Raw Material	Flour MDK White	Kg	1.478	378.571	559.53	Cash	
22	Bakery Product Raw Material	Flour Prima	Kg	25	190.00	4750	Cash	
23	Bakery Product Raw Material	Flour Prima	Kg	23.35	202.00	4716.7	Cash	
24	Bakery Product Raw Material	Flour Prima	Kg	0.2998	205.00	61.46	Cash	
25	Biscuits & Confectioneries	Biscuit Chocolate Cream 1.0 KG	Kg	0.26	1495.00	388.7	309	
26	Biscuits & Confectioneries	Biscuit Cream Cracker 125 G	Packet	29	172.50	5002.5	309	
27	Biscuits & Confectioneries	Biscuit Ginger 1kg	Kg	1.095	1150.00	1259.25	Cash	
28	Biscuits & Confectioneries	Biscuit Lemon Puff 100 G	Packet	2	161.00	322	309	
29	Biscuits & Confectioneries	Biscuit Lemon Puff 100 G	Packet	22	161.00	3542	Cash	
30	Biscuits & Confectioneries	Biscuit Marri 1KG	Kg	0.4	1265.00	506	309	
31	Biscuits & Confectioneries	Biscuit Marri 1KG	Kg	5.4	1298.00	7009.2	309	
32	Biscuits & Confectioneries	Chocolate 18 - 25 G	NOS	9	47.916	431.24	Cash	
33	Biscuits & Confectioneries	Chocolate (S)	NOS	7	50.00	350	Cash	
34	Biscuits & Confectioneries	Toffee Menthol 3G	NOS	40	06.50	260	Cash	

View Available Stock with Price Page



WARDROOM VICTUALING SYSTEM

View Individual Sale by Date

WardRoom :

Date :

Non-Vegetarian Menu Cost : 62537.49
 Vegetarian Menu Cost : 2964.36
 Extra Menu Cost : 66767.5167999999
 Party Cost : 10300.90
 Tea Count : Tea : 80 * = 0.00
 Plain Tea : 61 * = 0.00 [Get Tea Cost](#)

Total Daily Individual Cost : **0.00**

View All Sale by Date Page



WARDROOM VICTUALING SYSTEM

View Menus

Date :

Reason :

Group :

Vegetarian/Non-Vegetarian :

Wardroom :

Sr.No	Item Category	Item	Remarks
1	Dhal Curry	Dhal dry (new)	
2	Fish	Fish kelevalla curry(new)	
3	Rice	Garlic Rice / Red Rice (New)	
4	Dessert	Ice Cream (New)	
5	Mallum	Kalawamkola Mallum (New)	
6	Deep Fried Food	Papadam / Mora Miris Fried(New) 2222	
7	Tempered Food	Thalanabatu Temped(new)	

View Menu Page

[View Menu Sale Item List](#)

Sale Date :

Reason :

Group Type :

Vegetarian/Non-Vegetarian :

Wardroom : [View Menu](#)

Menu :

Sr.No	Item Category	Item	Remarks
1	Dessert	Banana CIC	
2	Sri Lankan Style Curry	CASSAWA WHITE CURY (NEW)	
3	Fish	Fish kelevalla curry(new)	
4	Mallum	Mukunuvanna mallum(new)	
5	Deep Fried Food	Papadam (New)	
6	Rice	Rice Samba/ Red Rice	
7	Tempered Food	Thalanabatu Tempred(new)	

Total Non-Vegetarian Count : 65
Total Vegetarian Count : 2

[View Ingredients List](#)

Sr.No	Meal Name	Ingredients	Qty.	Item Messurement	Issue Qty.
1	Banana CIC	Plantain CIC	0.1791	Kg	11.6415
2	CASSAWA WHITE CURY (NEW)	Cassawa	0.1269	Kg	8.2485
3	CASSAWA WHITE CURY (NEW)	Chilli Dry	0.0007	Kg	0.0455
4	CASSAWA WHITE CURY (NEW)	Cinamon	0.0003	Kg	0.0195
5	CASSAWA WHITE CURY (NEW)	Coconut With Out Husked	0.1194	Kg	7.761
6	CASSAWA WHITE CURY (NEW)	Curry Laves	0.0149	Bundle	0.9685
7	CASSAWA WHITE CURY (NEW)	Mustard Seed	0.0007	Kg	0.0455
8	CASSAWA WHITE CURY (NEW)	Turmeric Powder	0.0007	Kg	0.0455
9	Fish kelevalla curry(new)	Cardamom	0.000077	Kg	0.000505
10	Fish kelevalla curry(new)	Chili Powder	0.0023	Kg	0.1495
11	Fish kelevalla curry(new)	Cloves	0.000077	Kg	0.005005
12	Fish kelevalla curry(new)	Corn Flour	0.0015	Kg	0.0975
13	Fish kelevalla curry(new)	Curry Powder	0.0015	Kg	0.0975
14	Fish kelevalla curry(new)	Curry Powder Roasted	0.0015	Kg	0.0975
15	Fish kelevalla curry(new)	Gamboge	0.0015	Kg	0.0975
16	Fish kelevalla curry(new)	Kelawalla Cleaned/Yellow Fin Tuna	0.0846	Kg	5.499
17	Fish kelevalla curry(new)	Pepper Powder	0.0015	Kg	0.0975
18	Fish kelevalla curry(new)	Sause Dark	0.0008	Liter	0.052
19	Mukunuvanna mallum(new)	B'Onion	0.0373	Kg	2.4245
20	Mukunuvanna mallum(new)	Chilli Green	0.0037	Kg	0.2405
21	Mukunuvanna mallum(new)	Lime	0.0037	Kg	0.2405
22	Mukunuvanna mallum(new)	Mukunuwenna	0.1940	Bundle	12.61
23	Papadam (New)	Oil Vegetable 01 LTR	0.0149	Liter	0.9685
24	Papadam (New)	Panadam	0.0090	Kg	0.585

View Menu Sale Item List Page

View Group Menu Sale																																																																																																							
Sale Date :	2/7/2024	<input type="button" value=""/>																																																																																																					
Ward Room :	NHQ																																																																																																						
Reason :	Breakfast																																																																																																						
Group Type :	Group Menu 01																																																																																																						
Vegetarian/Non-Vegetarian :	Non-Vegetarian	<input type="button" value="View Group Menu"/>																																																																																																					
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View Group Menu Sale Item List Page

WARDROOM VICTUALING SYSTEM

Home Stock Menu Meal Attendance Menu Sales Individual Sale Party/Bite/Tea Calculation Cash Book Civil/Other Forces Cabin Allocation View Log Out About

[View Party Menu](#)

Sale Date :

WardRoom :

Reason :

Group Type :

Vegetarian/Non-Vegetarian :

Meal ID	Meal Category	Meal Item	No of Potion	Remove	Item Code
236006	Drinks	Separate Tea	7	<input type="checkbox"/>	500011
236005	Sandwich	Vegetable Sandwich (party)	7	<input type="checkbox"/>	500011

[View Ingredients List](#)

Sr.No	Meal Name	Ingredients	Qty.	Item Messurement	Issue Qty.
1	Separate Tea	Bopf 01 KG	0.005	Kg	0.035
2	Separate Tea	Sugar White	0.025	Kg	0.175
3	Separate Tea	Fresh Milk 1 L	0.100	Liter	0.7
4	Vegetable Sandwich (party)	Astra Magarine	0.01	Kg	0.07
5	Vegetable Sandwich (party)	B'Onion	0.01	Kg	0.07
6	Vegetable Sandwich (party)	Chilli Green	0.002	Kg	0.014
7	Vegetable Sandwich (party)	Table Salt	0.001	Kg	0.007
8	Vegetable Sandwich (party)	Pepper Powder	0.002	Kg	0.014
9	Vegetable Sandwich (party)	Bread Sandwich	0.1	NOS	0.7
10	Vegetable Sandwich (party)	Salad Leaves	0.005	Kg	0.035
11	Vegetable Sandwich (party)	Potatoes Fresh	0.045	Kg	0.315
12	Vegetable Sandwich (party)	Carrot	0.010	Kg	0.07
13	Vegetable Sandwich (party)	Sauce Mayonaise 473 G	0.015	Kg	0.105

[Total Ingredients List](#)

Sr.No	Ingredients	Qty.	Item Messurement	Item Code
1	Astra Magarine	0.07000	Kg	40000852
2	B'Onion	0.07000	Kg	40000314
3	Bopf 01 KG	0.03500	Kg	40000146
4	Bread Sandwich	0.70000	NOS	40000441
5	Carrot	0.07000	Kg	40000323
6	Chilli Green	0.01400	Kg	40000329
7	Fresh Milk 1 L	0.70000	Liter	40000281
8	Pepper Powder	0.01400	Kg	40000095
9	Potatoes Fresh	0.31500	Kg	40000364
10	Salad Leaves	0.02500	Kg	40000374
11	Sauce Mayonaise 473 G	0.10500	Kg	40000183
12	Sugar White	0.17500	Kg	40000106

View Party Menu Page



Home Stock Menu Meal Attendance Menu Sales Individual Sale Party/Bite/Tea Calculation Cash Book Civil/Other Forces Cabin Allocation View Log Out About

Menu Attendance List

Menu Date :	2/5/2024	<input type="button" value=""/>
Reason :	Dinner	<input type="button" value=""/>
Wardroom :	NHQ	<input type="button" value=""/>
Vegetarian/Non-Vegetarian :	Non-Vegetarian	<input type="button" value="View List"/>

Sr.No	Official No.	Rank/Rate	Name	Meal Count
1	648	Cmde	KMMP Karunathilake	1
2	733	Cmde	JU Gunaseela	1
3	1381	Surg Cmde	AH Mullegama	1
4	920	Capt	DMDC Bandara	1
5	936	Capt	HKA Amaranath	1
6	1156	Capt	YR Edrisinghe	1
7	1300	TCapt	KRGRS Rantenna	1
8	1577	TCapt	WMMSB Wahala	1
9	2904	LCdr	DAR Chathuranga	1
10	3500	TLCdr	EMGDN Ekanayake	1
11	3506	TLCdr	WPVS Gunawardana	1
12	3678	TLCdr	CS Serasinghe	1
13	3705	TLCdr	SL Hughmaye	1
14	3471	LT	KJDCS Jayawrdane	1
15	3543	LT	CY Withanasiri	1
16	3567	LT	CPB Yaparathna	1
17	3682	LT	WU Peramunugamage	1
18	3696	LT	KS Maussawala	1
19	3697	LT	GKI Gamage	1
20	3700	LT	SMRMB Sakalasooriya	1
21	3779	LT	KL Madumadawa	1
22	3789	LT	AI Gunawardhana	1
23	3828	LT	KMP Jayasekara	1
24	3843	LT	RU Liyanage	1
25	3915	LT	SWGMS Wijekoon	1
26	3998	LT	WAN Dhanushka	1
27	4475	LT	AE Sooriyapperumaarachchi	1
28	4485	LT	RHMI Nadushika	1
29	4490	LT	MMSS Marasinghe	1
30	5797	LT	KAC Karunarathna	1
31	5842	LT	A.Jayasundara	1
32	5863	LT	MTK Gimasha	1
33	5883	LT	NAPID Jayapala	1
34	5911	LT	MA Kaushalie	1
35	3883	ALT	KGSP Ambadenimulla	1
36	3905	ALT	LPK Mallawaarachchi	1
37	3951	ALT	HGDN Tharaka	1
38	3961	ALT	IGVK Vijayakeerthi	1
avascript:void(0)	4004	ALT	DC Ravasiyake	1

Menu Attendance List Page



WARDROOM VICTUALING SYSTEM

Home Stock Menu Meal Attendance Menu Sales Individual Sale Party/Bite/Tea Calculation Cash Book Civil/Other Forces Cabin Allocation View Log Out About

Menu Item Sale

Wardroom : NHQ
 Sale Date : 2/1/2024
 Reason : Breakfast
 Vegetarian/Non-Vegetarian : Non-Vegetarian

Official No. List : 1163,5250

Sr.No	Item	Unit Price	Sale Qty.	Measurement	Total Price
1	B'Onion	480.00	0.11	Kg	52.8
2	Chilli Green	1100.00	0.014	Kg	15.4
3	Chilli Pieces	1100.00	0.016	Kg	17.6
4	Chilli Powder	1290.00	0.002	Kg	2.58
5	Coconut With Out Husked	155.00	0.7	Kg	108.5
6	Curry Powder	1310.00	0.008	Kg	10.48
7	Dry Sprates	1200.00	0.06	Kg	72
8	Fenugreek	900.00	0.001	Kg	0.9
9	Garlick	570.00	0.022	Kg	12.54
10	Leeks	350.00	0.07	Kg	24.5
11	Lime	280.00	0.02	Kg	5.6
12	Mustard Seed	650.00	0.002	Kg	1.3
13	Pepper Powder	1600.00	0.006	Kg	9.6
14	Red Pumpkin	285.714	0.24	Kg	68.57
15	Rice Samba	270.00	0.4	Kg	108
16	Table Salt	162.50	0.018	Kg	2.92
17	Tomatoes	750.00	0.02	Kg	15
18	Turmeric Powder	2400.00	0.002	Kg	4.8

533.09

Group Menu Count : 2
 Cost Per Head : 266.545

Menu Item Sale



WARDROOM VICTUALING SYSTEM

Home Stock Menu Meal Attendance Menu Sales Individual Sale Party/Bite/Tea Calculation Cash Book Civil/Other Forces Cabin Allocation View Log Out About

Group Menu Item Sale List

Sale Date : 2/1/2024
 Ward Room : NHQ
 Reason : Breakfast
 Group Type : Group Menu 01
 Vegetarian/Non-Vegetarian : Non-Vegetarian

Official No. List : 1224,1461,3245,3385,5341

Sr.No	Item	Unit Price	Sale Qty.	Measurement	Total Price
1	Yellow Gram	641.00	0.625	Kg	400.63
2	Chilli Pieces	1100.00	0.05	Kg	55
3	Coconut With Out Husked	180.00	0.5	Kg	90
4	B'Onion	440.00	0.25	Kg	110
5	Lime	280.00	0.05	Kg	14
6	Tomatoes	750.00	0.125	Kg	93.75
7	Table Salt	162.50	0.045	Kg	7.31

770.69

Total Rs: 770.69
 Group Menu Count : 5
 Cost Per Head : 154.138

Group Menu Item Sale

Sr.No	Off No	Item Code	Item	Unit Price	Sale Qty.	Measurement	Price	Received From	(T/B)Official No.	(T/B)Rank/Rate	(T/B)Name	ID
1	432	40000314	B'Onion	480.00	0.045	Kg	21.6	Cash				2718439
2	432	40000323	Carrot	1200.00	0.055	Kg	66	Cash				2718437
3	432	40000329	Chilli Green	1100.00	0.005	Kg	5.5	Cash				2718440
4	432	40000354	Leeks	350.00	0.01	Kg	3.5	Cash				2718438
5	432	40000424	Eggs Hen	55.00	1	NOs	55	Cash				2718436
6	432	40000748	Maggi	123.00	1	Packet	123	Cash				2718435
7	520	40000281	Fresh Milk 1 L	460.00	2	Packet	920	Cash				2718407
8	610	40000008	Dry Fish Bayala	1604.477	0.268	Kg	430	Cash				2718382
9	610	40000106	Sugar White	285.00	0.3	Kg	85.5	Cash				2718380
10	615	40000009	Dry Fish Keeramin	1350.00	0.05	Kg	67.5	Cash				2718092
11	615	40000153	Rice Raw White	208.00	1	Kg	208	Cash				2718094
12	615	40000299	Coconut With Out Husked	146.341	0.705	Kg	103.17	Cash				2718088
13	615	40000314	B'Onion	440.00	0.12	Kg	52.8	Cash				2718090
14	615	40000329	Chilli Green	1100.00	0.07	Kg	77	Cash				2718093
15	615	40000543	Linna	400.00	0.43	Kg	172	Cash				2718089
16	615	40000574	Papadam	780.00	0.05	Kg	39	Cash				2718091
17	647	40000133	Biscuit Lemon Puff 100 G	161.00	1	Packet	161	309				2718379
18	713	40000281	Fresh Milk 1 L	460.00	1	Packet	460	Cash				2718393
19	713	40000543	Linna	400.00	0.135	Kg	54	Cash				2718394
20	713	40000774	Flour Prima	205.00	0.4	Kg	82	Cash				2718395
21	716	40000146	Bopf 01 KG	1550.00	0.1	Kg	155	309				2718376
22	716	40000384	Tomatoes	750.00	0.135	Kg	101.25	Cash				2718378
23	716	40000424	Eggs Hen	55.00	1	NOs	55	Cash				2718375
24	716	40000929	Oil Vegetable	675.00	0.33	Kg	222.75	Cash				2718377
25	719	40000078	Chilli Dry	1200.00	0.05	Kg	60	Cash				2718087
26	719	40000251	Chicken Broiler Dressed	1000.00	1.132	Kg	1132	Cash				2718086
27	719	40000281	Fresh Milk 1 L	490.00	0.999	Packet	489.51	Cash				2718381
28	730	40000424	Eggs Hen	55.00	10	NOs	550	Cash				2718095
29	745	40000251	Chicken Broiler Dressed	1150.00	0.25	Kg	287.5	Cash				2718364
30	745	40000314	B'Onion	480.00	0.045	Kg	21.6	Cash				2718358
31	745	40000329	Chilli Green	1100.00	0.005	Kg	5.5	Cash				2718360
32	745	40000424	Eggs Hen	55.00	1	NOs	55	Cash				2718356
33	745	40000424	Eggs Hen	55.00	1	NOs	55	Cash				2718406
34	745	40000929	Oil Vegetable	675.00	0.1	Kg	67.5	Cash				2718362
35	746	40000038	Dhall Mysoor	300.00	0.04	Kg	12	Cash				2718315
36	746	40000080	Chilli Powder	1290.00	0.005	Kg	6.45	Cash				2718329
37	746	40000153	Rice Raw White	208.00	0.2	Kg	41.6	Cash				2718311
38	746	40000251	Chicken Broiler Dressed	1150.00	0.145	Kg	166.75	Cash				2718313
39	746	40000299	Coconut With Out Husked	155.00	0.15	Kg	23.25	Cash				2718521
40	746	40000299	Coconut With Out Husked	155.00	0.35	Kg	54.25	Cash				2718317

View Daily Personal Item Sale



WARDROOM VICTUALING SYSTEM

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[View Party Sale](#)

Sale Date :

WardRoom :

Reason :

Group Type :

Vegetarian/Non-Vegetarian :

Sr.No	Item Code	Item	Unit Price	Sale Qty.	Measurement	Price	Received From	ID	
1	40000103	Tamarine	800.00	0.055	Kg	44	Cash	277779	Delete
2	40001117	Ice Cream	520.00	1	Liter	520	Cash	277780	Delete
3	40001116	Ice Cream Vanilla	515.00	1.75014	Liter	901.32	Cash	277781	Delete
4	40003087	Mango Alponsu	350.00	07	Kg	2450	Cash	277782	Delete
5	40000522	Flour MDK Red	280.00	02	Kg	560	Cash	277783	Delete
6	40000521	Flour MDK White	378.571	0.400	Kg	151.43	Cash	277784	Delete
7	40000521	Flour MDK White	378.571	2.100	Kg	795	Cash	277785	Delete
8	40000251	Chicken Broiler Dressed	1000.00	0.310	Kg	310	Cash	277786	Delete
9	40000251	Chicken Broiler Dressed	1000.00	7.690	Kg	7690	Cash	277787	Delete
10	40000038	Dhall Mysoor	300.00	01	Kg	300	Cash	277788	Delete
11	40000299	Coconut With Out Husked	155.00	05	Kg	775	Cash	277789	Delete
12	40000479	Handalla	1600.00	02	Kg	3200	Cash	277790	Delete
13	40000479	Handalla	1400.00	01	Kg	1400	Cash	277791	Delete
14	40000813	Biscuits Krisco 170G	380.00	03	Packet	1140	Cash	277792	Delete
15	40003162	Lanka Potatoes	300.00	04	Kg	1200	Cash	277793	Delete
16	40000314	B'Onion	370.00	05	Kg	1850	Cash	277794	Delete
17	40000366	Radish	250.00	01	Kg	250	Cash	277795	Delete
18	40000378	Spring Onion	350.00	01	Kg	350	Cash	277796	Delete
19	40000323	Carrot	1200.00	0.250	Kg	300	Cash	277797	Delete
20	40000323	Carrot	1200.00	01	Kg	1200	Cash	277798	Delete
21	40000328	Chilli Capsicum	1415.00	0.510	Kg	721.65	Cash	277799	Delete
22	40000329	Chilli Green	1200.00	0.500	Kg	600	Cash	277800	Delete
23	40000079	Chilli Pieces	1360.00	0.200	Kg	272	Cash	277801	Delete
24	40000106	Sugar White	285.00	02	Kg	570	Cash	277802	Delete
25	40000594	Jelly	2300.00	0.500	Kg	1150	Cash	277803	Delete
26	40000575	Jelatine	5000.00	0.050	Kg	250	Cash	277804	Delete
27	40000363	Parsley	3500.00	0.100	Kg	350	Cash	277805	Delete
28	40000090	Garlick	570.00	0.300	Kg	171	Cash	277806	Delete
29	40000339	Ginger Fresh	1600.00	0.298	Kg	476.8	Cash	277807	Delete
30	40001099	Sauce Tomato 400g	575.00	0.900	Kg	517.5	Cash	277808	Delete
31	40000188	Sauce Oyester 375 G	750.00	0.300	Liter	225	Cash	277809	Delete
32	40001109	Corn Flour	450.00	02	Kg	900	Cash	277810	Delete
33	40000774	Eflour Prima	205.00	02	Kg	410	Cash	277811	Delete

View Party Sale



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View Tea Mark Details

Select Date :

Wardroom :

Sr.No	Service Type	Branch	Official No.	Rank/Rate	Name	Tea Type	Tea Count	ID	Actions
1	RNF	NRE	2446	LCdr	KGC Pathmal	Tea	2	35613	Delete
2	RNF	NRL	2760	LCdr	RPJH Rajapaksha	Tea	1	35618	Delete
3	RNF	NRL	2767	LCdr	TASH Thambugala	Tea	1	35619	Delete
4	RNF	NRZ	3056	LCdr	BMR Gunarathna	Tea	2	35612	Delete
5	RNF	NRC	3405	TLCdr	DTL Dissanayake	Tea	1	35620	Delete
6	RNF	NRS	3562	TLCdr	HDKS Perera	Tea	2	35614	Delete
7	RNF	NRL	3543	LT	CY Withanasiri	Plain Tea	1	35621	Delete
8	RNF	NRT	3567	LT	CPB Yaparathna	Tea	2	35615	Delete
9	RNF	NRS	3682	LT	WU Peramunugamage	Tea	1	35616	Delete
10	RNF	NRS	4490	LT	MMSS Marasinghe	Tea	3	35617	Delete

Tea Count : 15

Plain Tea Count : 1

Year :

Month :

Wardroom :

Total Plain Tea Count :

Total Tea Count :

View Daily Tea Mark Details

Sr.No	Service Type	Branch	Official No.	Rank/Rate	Name	Tea Type	Tea Count	Date
1	RNF	NRX	695	TRAdm	WDCCU Kumarasinghe	Tea	1	2023/2/23
2	RNF	NRE	916	TCmdr	WKA Waduge	Tea	1	2023/2/16
3	RNF	NRE	916	TCmdr	WKA Waduge	Tea	1	2023/2/20
4	RNF	NRE	916	TCmdr	WKA Waduge	Tea	2	2023/2/23
5	RNF	NRI	750	Capt	HMUI Samarakoon	Tea	3	2023/2/3
6	RNF	NRI	750	Capt	HMUI Samarakoon	Tea	3	2023/2/6
7	RNF	NRI	750	Capt	HMUI Samarakoon	Tea	6	2023/2/8
8	RNF	NRI	750	Capt	HMUI Samarakoon	Tea	6	2023/2/12
9	RNF	NRI	750	Capt	HMUI Samarakoon	Tea	5	2023/2/16
10	RNF	NRI	750	Capt	HMUI Samarakoon	Tea	1	2023/2/3
11	RNF	NRX	884	Capt	Ti Wijesuriya	Tea	1	2023/2/20
12	RNF	NRX	884	Capt	Ti Wijesuriya	Tea	7	2023/2/16
13	RNF	NRX	884	Capt	Ti Wijesuriya	Tea	1	2023/2/23
14	RNF	NRX	884	Capt	Ti Wijesuriya	Tea	1	2023/2/23
15	RNF	NRE	887	Capt	MADDM Piyathilake	Tea	2	2023/2/2
16	RNF	NRE	887	Capt	MADDM Piyathilake	Tea	2	2023/2/16
17	RNF	NRE	887	Capt	MADDM Piyathilake	Tea	1	2023/2/27
18	RNF	NRE	887	Capt	MADDM Piyathilake	Tea	1	2023/2/27
19	RNF	NRE	887	Capt	MADDM Piyathilake	Tea	1	2023/2/28
20	RNF	NRR	1088	Capt	SPNPK Dawson	Tea	1	2023/2/12
21	RNF	NRX	1219	Capt	EGT Hemantha	Tea	1	2023/2/2
22	RNF	NRX	1219	Capt	EGT Hemantha	Tea	1	2023/2/3
23	RNF	NRX	1219	Capt	EGT Hemantha	Tea	1	2023/2/6
24	RNF	NRX	1219	Capt	EGT Hemantha	Tea	2	2023/2/8
25	RNF	NRC	1868	Capt	KMDDB Kollalpitya	Tea	1	2023/2/20
26	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	1	2023/2/11
27	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	2	2023/2/15
28	RNF	NRS	1365	TCapt	AKPK Akneemana	Plain Tea	1	2023/2/15
29	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	1	2023/2/16
30	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	2	2023/2/21
31	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	1	2023/2/21
32	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	1	2023/2/22
33	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	1	2023/2/23
34	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	1	2023/2/25
35	RNF	NRS	1365	TCapt	AKPK Akneemana	Tea	4	2023/2/28
36	RNF	NRS	1566	TCapt	HLNT Gunasena	Tea	2	2023/2/2
37	RNF	NRX	1566	TCapt	HLNT Gunasena	Tea	5	2023/2/3
38	RNF	NRX	1566	TCapt	HLNT Gunasena	Tea	6	2023/2/6
39	RNF	NRX	1566	TCapt	HLNT Gunasena	Tea	4	2023/2/8

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Final Monthly Recovery

Wardroom :

Year :

Month :

Sr.No	Branch	Official No.	Rank/Rate	Name	Total Meal Cost	Credit/Debit	Debit	Mess Substitute	Bar Bill	Total Recovery
1	NRX	520	VAdm	UVMP Perera	6680.13	-6680.13	6680.13	0.00	5185.00	11865.13
2	NRM	305	Surg RAdm	GSR Jayawardena	0.00	0.00	0.00	200.00	533.00	733.00
3	NRX	397	RAdm	KJ Kularatne	19384.66	-19384.66	19384.66	200.00	3624.00	23208.66
4	NRX	432	RAdm	RAPP Rathnayake	3872.18	-3872.18	3872.18	200.00	0.00	4072.18
5	NRE	557	RAdm	KWARI Ranasinghe	6147.53	-6147.53	6147.53	200.00	1549.35	7896.88
6	NRX	564	RAdm	TSK Perera	566.94	-566.94	566.94	0.00	174.00	740.94
7	NRX	662	RAdm	MSK Mahawatte	1579.09	-1579.09	1579.09	200.00	1527.70	3306.79
8	NRL	671	RAdm	TWW Leelarathna	6023.97	-6023.97	6023.97	200.00	895.43	7119.40
9	NRX	9111	RAdm	DC Gunawardena	1377.72	-1377.72	1377.72	0.00	0.00	1377.72
10	NRX	485	TRAdm	AN Amarosa	0.00	0.00	0.00	0.00	68.15	68.15
11	NRI	537	TRAdm	PAJN Ponnampерuma	12287.76	-12287.76	12287.76	200.00	4188.20	16675.96
12	NRX	568	TRAdm	BAKSP Banagoda	177.84	-177.84	177.84	0.00	462.15	639.99
13	NRX	589	TRAdm	KAPSK Kariyapperuma	0.00	0.00	0.00	0.00	58.00	58.00
14	NRS	591	TRAdm	RACN Rathnayake	4648.28	-4648.28	4648.28	200.00	7171.80	12020.08
15	NRS	635	TRAdm	MWV Marapana	22754.08	-22754.08	22754.08	200.00	10393.93	33348.01
16	NRX	641	TRAdm	KMGNC Navaratne	444.40	-444.40	444.40	200.00	9105.00	9749.40
17	NRX	654	TRAdm	LHA Ranasuriya	715.16	-715.16	715.16	200.00	0.00	915.16
18	NRC	670	TRAdm	MURR Medagoda	136.45	-136.45	136.45	200.00	0.00	336.45
19	NRX	719	TRAdm	MHN Peiris	6825.98	-6825.98	6825.98	0.00	2872.00	9697.98
20	NRI	543	Cmde	PHN Peiris	1088.71	-1088.71	1088.71	200.00	3781.20	5069.91
21	NRV	610	Cmde	PASK Pitigala	7796.18	-7796.18	7796.18	200.00	295.70	8291.88
22	NRS	632	Cmde	JC Liyanagamage	11555.37	-11555.37	11555.37	200.00	11041.80	22797.17
23	NRE	647	Cmde	KMWK Kandawinna	2618.66	-2618.66	2618.66	200.00	2577.85	5396.51
24	NRL	648	Cmde	KMMP Karunathilake	100.00	-100.00	100.00	200.00	0.00	300.00
25	NRL	650	Cmde	CAP Anthony	6661.93	-6661.93	6661.93	200.00	7176.43	14038.36
26	NRE	667	Cmde	DSPK De Silva	4725.44	-4725.44	4725.44	200.00	828.35	5753.79
27	NRX	695	Cmde	WDCU Kumarasinghe	7881.80	-7881.80	7881.80	200.00	805.60	8887.40
28	NRS	712	Cmde	RR Kalubowila	0.00	0.00	0.00	200.00	4899.80	5099.80
29	NRS	713	Cmde	BWDMMPK Dissanayake	0.00	0.00	0.00	0.00	925.80	925.80
30	NRX	717	Cmde	PN Withanage	0.00	0.00	0.00	0.00	498.00	498.00
31	NRC	730	Cmde	HS Balasuriya	17806.05	-17806.05	17806.05	200.00	2768.00	20774.05
32	NRL	733	Cmde	JU Gunaseela	280.00	-280.00	280.00	200.00	6276.00	6756.00
33	NRS	738	Cmde	KTDP C Jayapala	0.00	0.00	0.00	0.00	925.80	925.80
34	NRS	778	Cmde	PRP Fernando	0.00	0.00	0.00	0.00	983.80	983.80
35	NRL	799	Cmde	TDS De Silva	1301.05	-1301.05	1301.05	200.00	895.43	2396.48
36	NRX	821	Cmde	YR Serasinghe	3694.22	-3694.22	3694.22	200.00	2469.89	6364.11
37	NRX	822	Cmde	PK Warnakulasooriya	2157.50	-2157.50	2157.50	0.00	692.00	2849.50
38	NRX	823	Cmde	B Liyanagamage	3107.69	-3107.69	3107.69	200.00	1963.45	5271.14
39	NRX	826	Cmde	SJ Kumara	4507.96	-4507.96	4507.96	0.00	4635.00	9142.96

View Final Monthly Recovery

Individual Meal Recovery Per Month

	3147	RNF	<input type="button" value="View Person"/>																																																																																																																																												
Official No :	Lieutenant Commander Welepathirage Heshanthi Kalani Gunasoma Parakrama																																																																																																																																														
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