PARSHWANATH CHARITABLE TRUST'S
A.P. SHAH INSTITUTE OF TECHNOLOGY
Department of Computer Science and Engineering
Data Science

Orderflow : Efficient Restaurant Order/Invoicing

Abhimanyu P Deshmukh - 22107036
Gauri Sasikumar Iyer - 22107030
Kisan Kumar Jena - 22107049
Ganesh Patil - 22107045

Project Guide
Ms. Sheetal Jadhav

Outline

- Introduction
- Literature Survey of the existing systems
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Introduction

- “Orderflow” is a restaurant ordering software designed to simplify order management, improve communication between front and back of house, and elevate the dining experience to new heights.
- One of the critical components of restaurant management is the billing and invoicing process, which directly impacts customer satisfaction and operational efficiency.
- The primary objective of this project is to develop a robust and efficient billing system.

- **Motivation :**

1. Servers need to accurately remember and relay orders to the kitchen, which requires strong memory and attention to detail.
2. Poor communication between servers and kitchen staff can lead to mistakes in order preparation.
3. Inadequate training or understaffing can result in inexperienced staff members, leading to inefficiencies in the ordering process.
4. When order took on paper notebook, the history of payments and orders is not maintained.

Introduction

- **Objectives :**

1. To create an application that will help make the process of ordering, serving and billing quick, easy and efficient.

2. To design an easy to use interface, so that the staff would only need minimal guidance before using the application.

3. To keep a record of orders and for future reference and analysis, the order and bill amount will be saved in the database.

Literature Survey of the existing system

Sr No.	Title	Author	Year	Outcomes	Methodology	Result
1	[1] Foody – Smart Restaurant Management and Ordering System	Vindya Liyanage, Achini Ekanayake, Hiranthi Premasiri, Prabhashi Munasingh, Samantha Thelijjagod	2018	Customers can check availability of tables before entering the restaurants, increase the accuracy of the food ordering process, maintain the customer feedback provided for each food item.	Google maps, sensor and Signal handling, graph API, 3D max and Natural Language Processing.	FOODY System handles all the reservations properly as well as the orders. Because of the use of latest and the most relevant technologies the time wastage is reduced and the accuracy and confidentiality is maximized.

Literature Survey of the existing system

Sr No.	Title	Author	Year	Outcomes	Methodology	Result
2	[2] Food Order Management System	Nikhil Soni, Eeshan Gupta, Santosh Kumar	2023	The system's user-friendly interface, seamless order entry and tracking, integration with payment gateways and delivery services, and data analytics capabilities will contribute to the success and	Kitchen Order Ticket (KOT), billing, customer relationship management (CRM) Order Location and Tracking. Communications and Notices. Integration with delivery services.	It helps customers to make orders easily. Provides customers with the information needed to create orders. The Food web application built for restaurants and canteen can help the restaurant and mess to take orders and edit its data, and it is also built for administrators to help administrators control the entire Food system.

Literature Survey of the existing system

Sr No.	Title	Author	Year	Outcomes	Methodology	Result
3	[3] Design and Development of Multi-Touchable E-Restaurant Management System	Soon Nyean Cheong Wei Wing Chiew Wen Jiun Yap	2010	Multi-touchable interactive dining menu where customers could use it to order their desired food by simply touching on the food item displayed on the table surface using their fingers.	The proposed MEMS was developed using PHP, MySQL and Adobe Flash AS3 scripting on top of Zend framework.	Multi-touchable E-restaurant management system on top of Zend framework that solved some of the limitations encountered by the PDA-based food ordering system. The MEMS provides a proper workflow for restaurant staffs to manage restaurant operations digitally, from ordering to billing systematically.

Limitations of existing systems

1. **Limited Integration** : Many restaurants still use different systems for order processing, inventory management, and invoicing, leading to errors in data synchronization.

2. **Outdated Technology** : Some restaurants rely on manual paper-based processes, which can be slow, prone to errors, and lack the features needed for modern operations.

3. **Poor User Experience** : The user interface may be are poorly made, leading to frustation to the staff.

4. **Inflexibility** : Some systems lack flexibility to accomodate changes in the menu, or adding more items into the bill.

Problem statement

Many inefficiencies and challenges are faced by restaurants in managing orders and invoicing. Other issues like miscommunication, poor order handling, absence of order records, late serving service are faced.

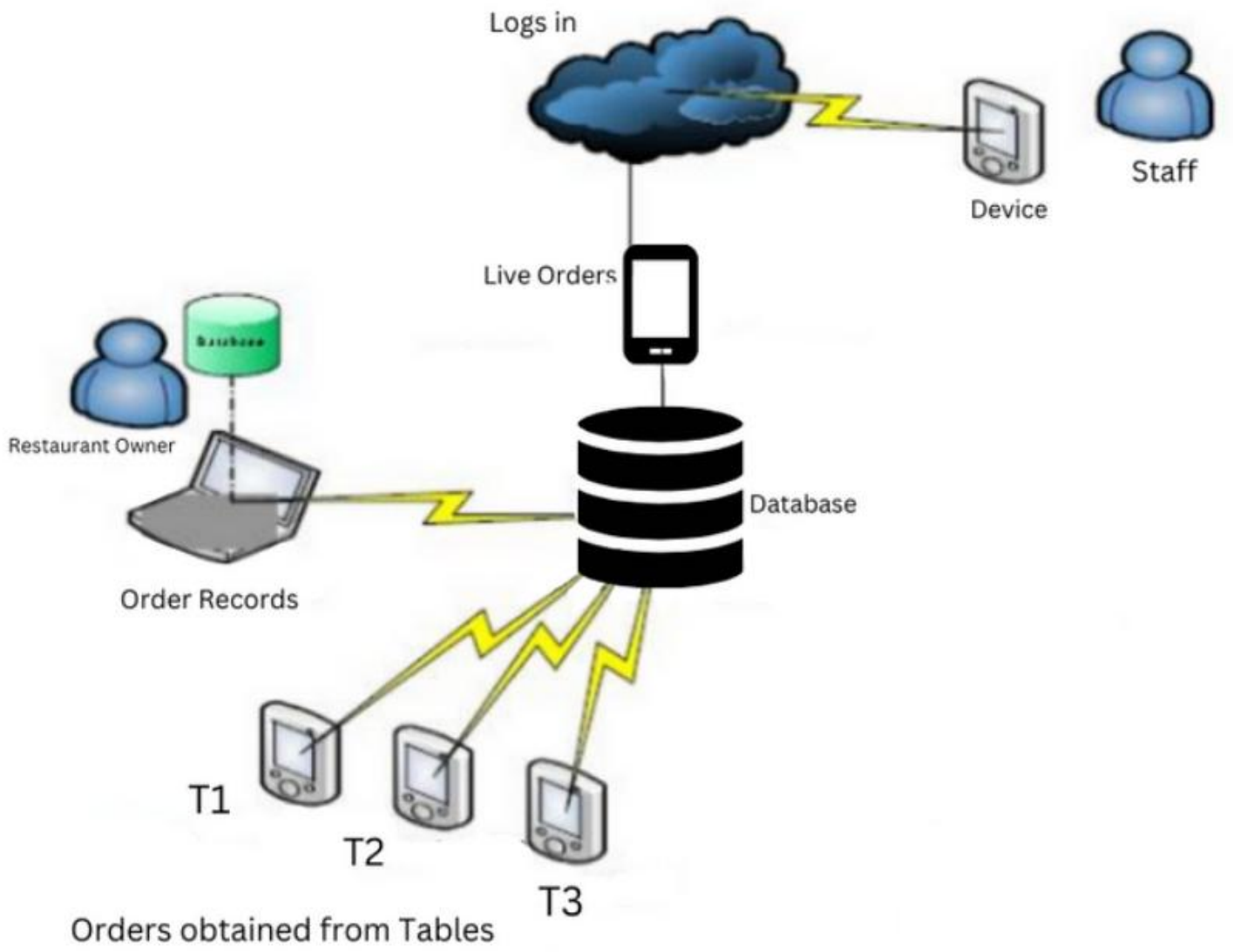
- **Solutions :**

1. Ordering Process Optimization: Designing an user-friendly interface for restaurant staff to place and manage orders efficiently. This helps quicken the ordering process and reduce wait times for customers.

2. Invoicing Automation: Developing automated invoicing to generate accurate and itemized bills for customers based on their orders.

3. Order Tracking and Management: Implementing order tracking features to monitor the status of each order from placement to fulfillment.

System Design



Technologies and methodologies

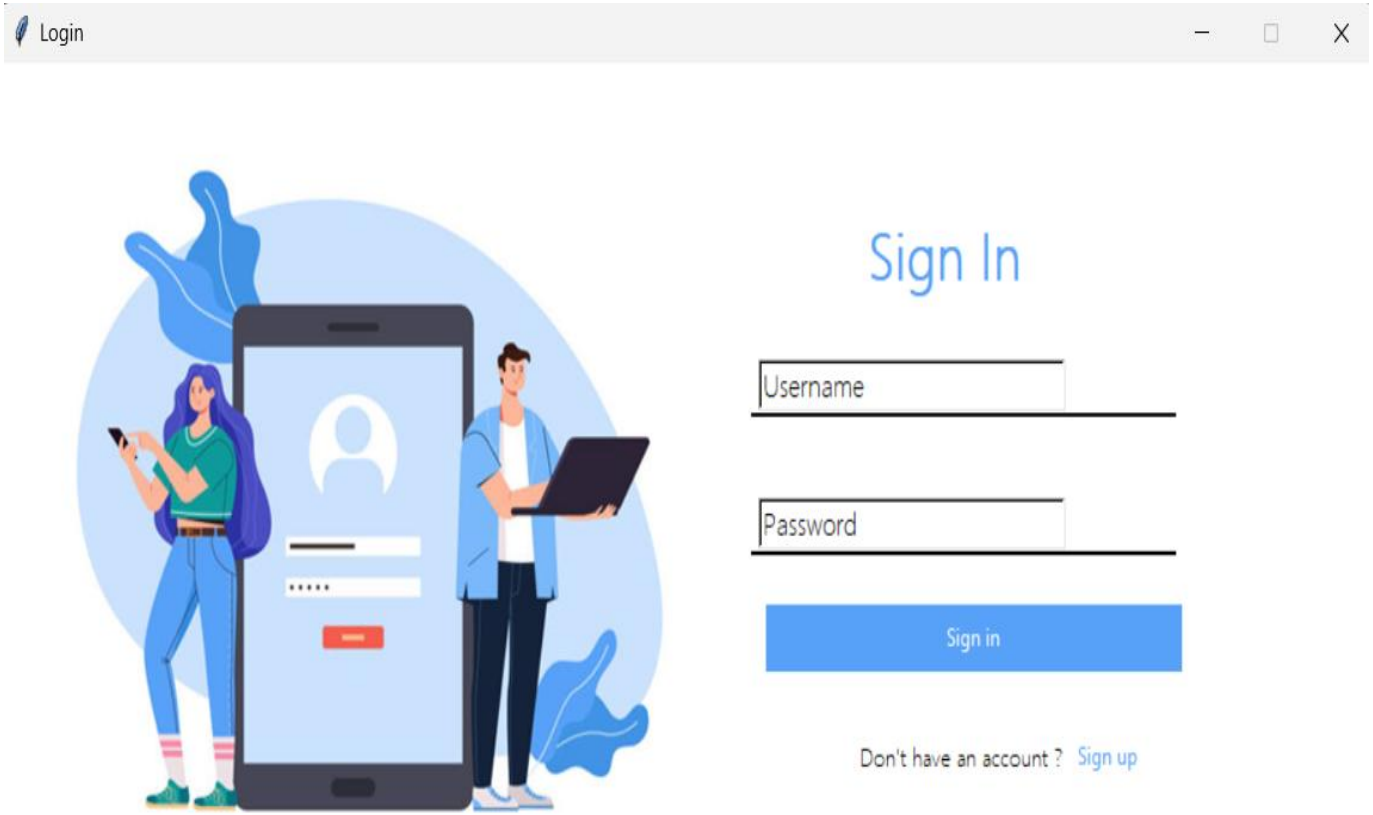
Front-End:

- Tkinter (version 8.6.14)
- Python (version 3.12.2)

Back-End:

- MySQL (version 8.1.0)
- Python (version 3.12.2)

Implementation



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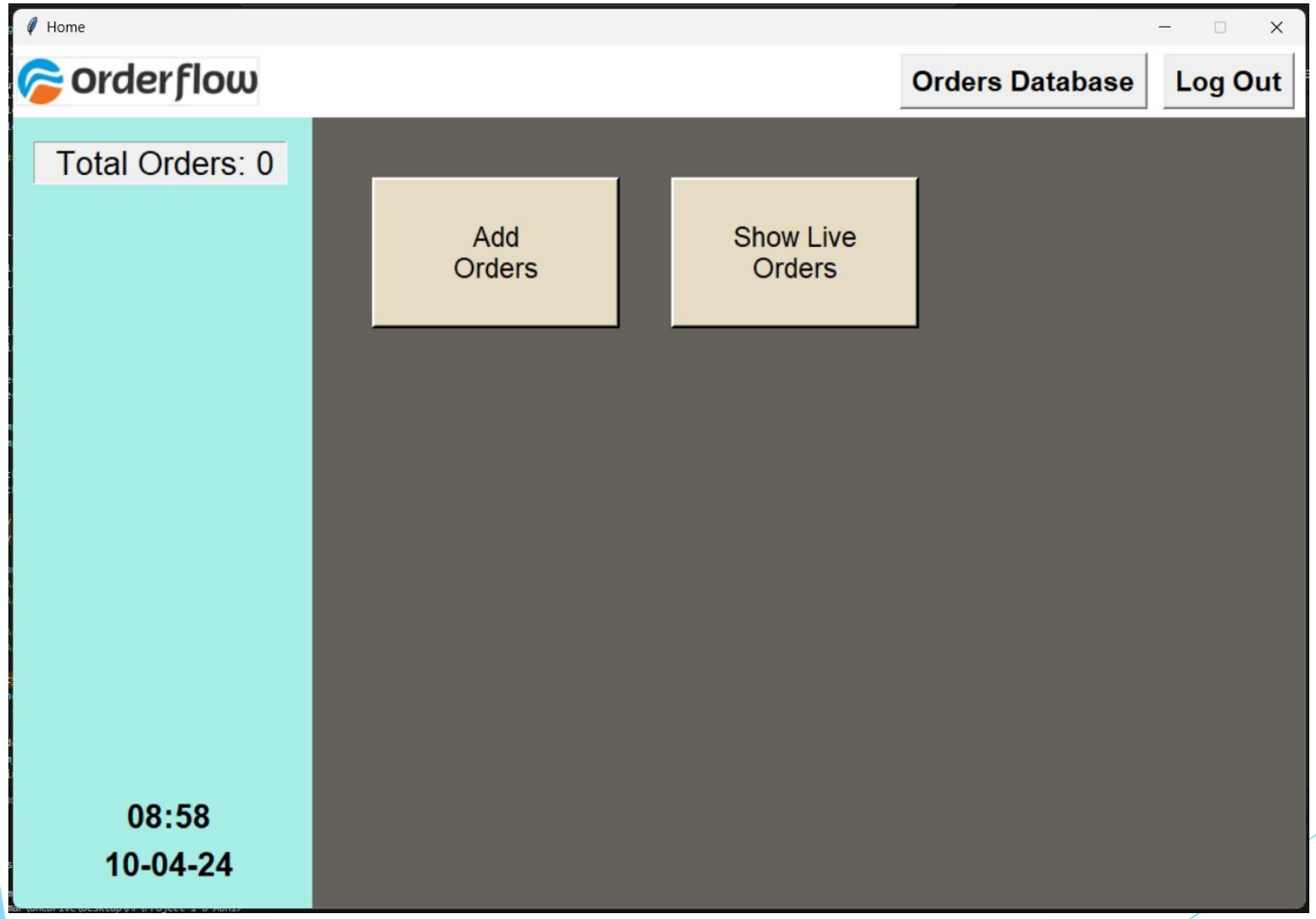

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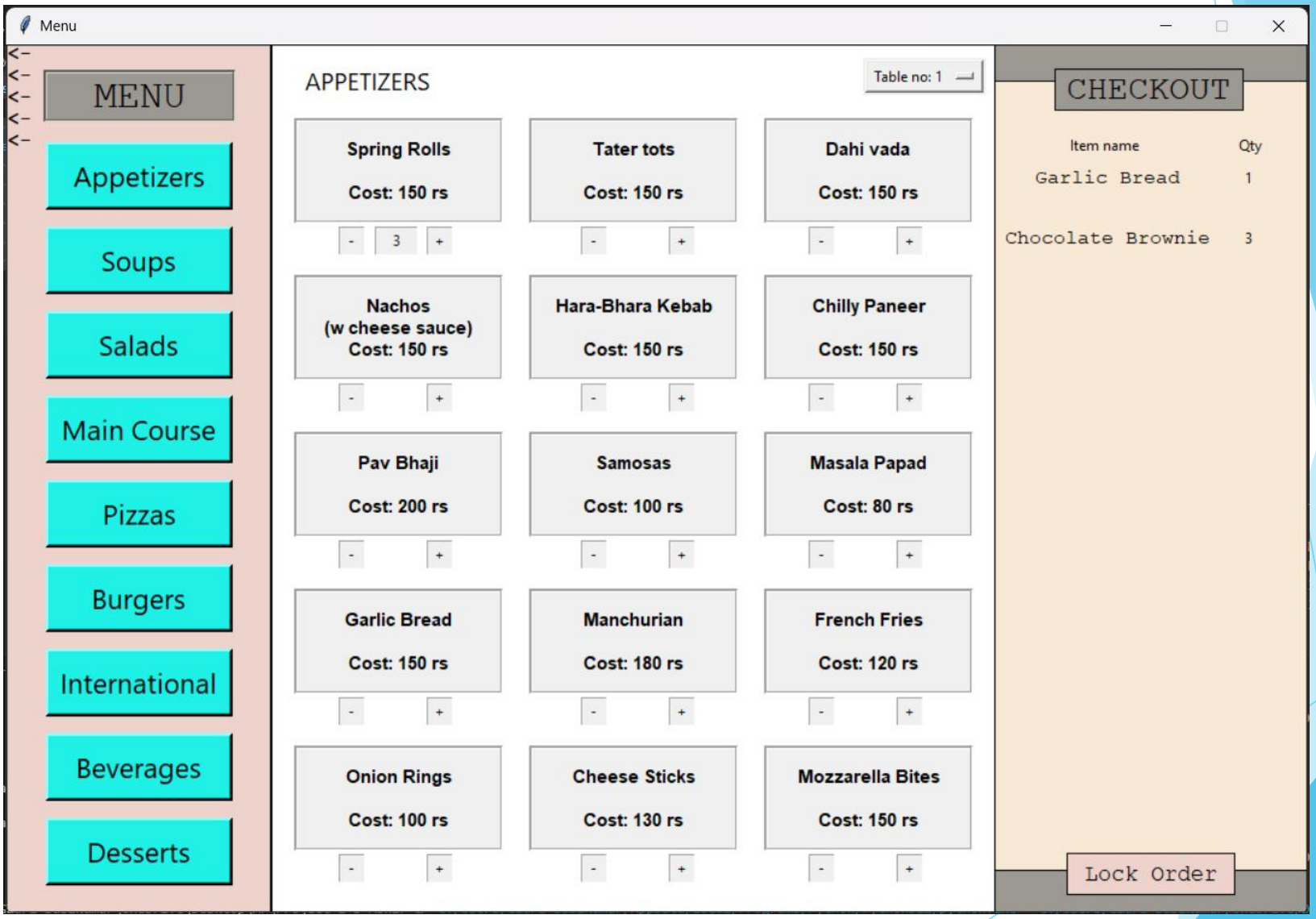

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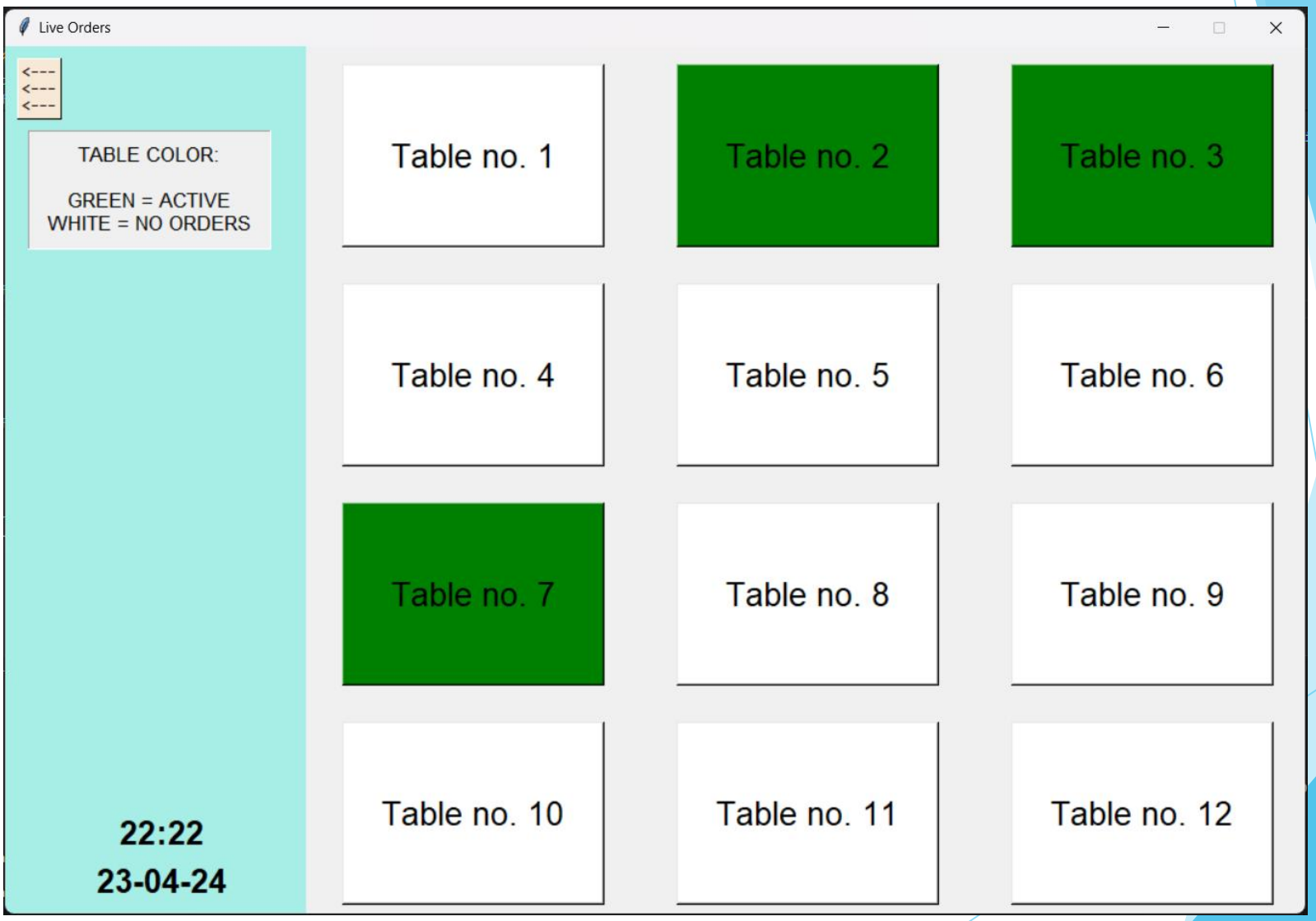

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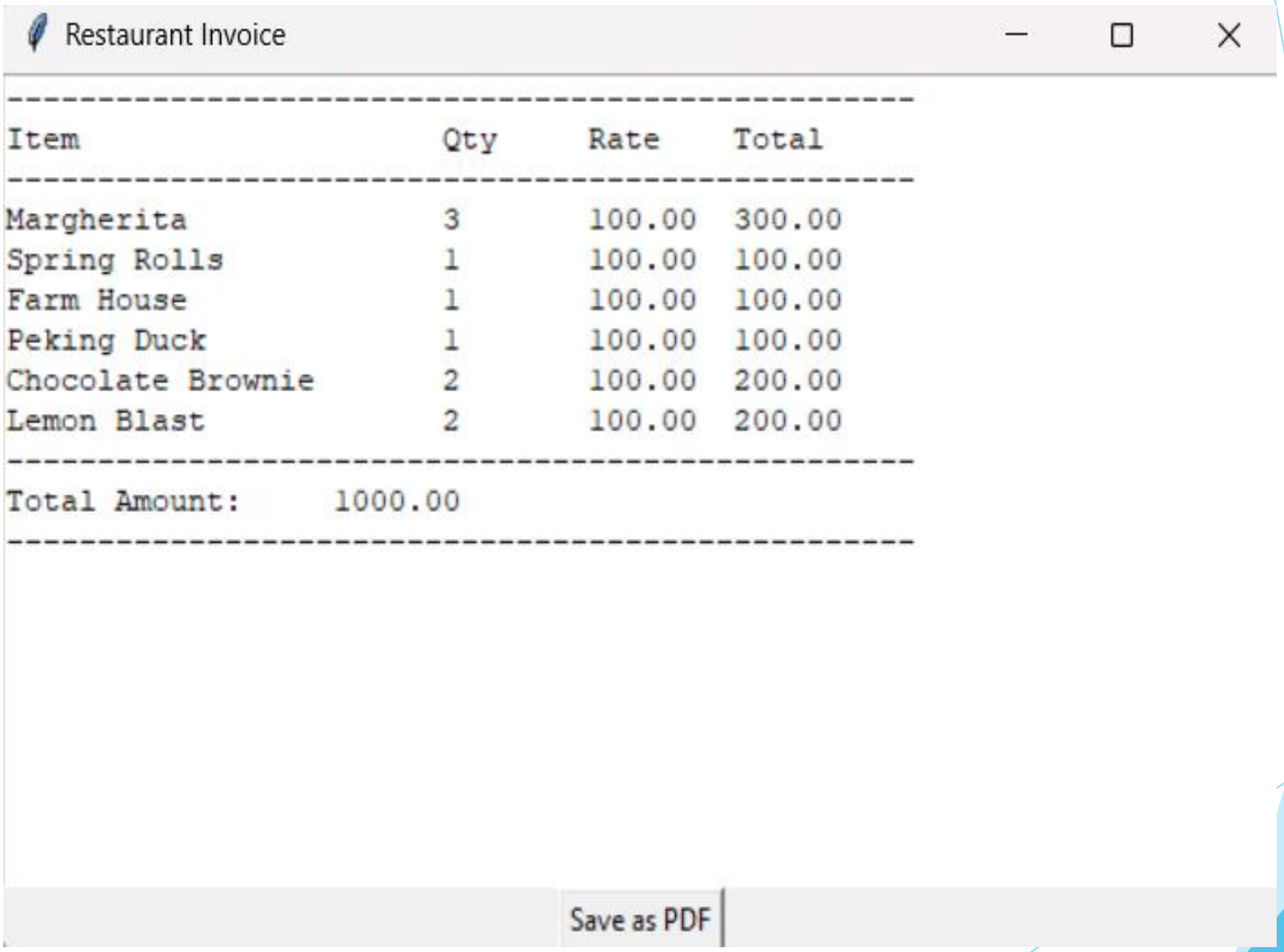

References

- [1] Nikhil Soni, Eeshan Gupta, Santosh Kumar, "*Food Order Management System"*,International Journal of Advances in Engineering and Management (IJAEM),Volume 5, *2023*

- [2] Vindya Liyanage,Achini Ekanayake,Hiranthi Premasiri,Prabhashi Munasinghe,Samantha Thelijjagoda, "*Foody – Smart Restaurant Management and Ordering System"*, Sri Lanka Institute of Information Technology Malabe, Sri Lanka, IEEE *2018.*

- [3] Soon Nyean Cheong, Wei Wing Chiew, Wen Jiun Yap, "*Design and Development of Multi-Touchable*", 2010 International Conference on Science and Social Research, IEEE *2010.*

Conclusion

- In conclusion, the development of an efficient restaurant order and invoicing system is crucial for streamlining operations, enhancing customer satisfaction, and driving business success in the competitive restaurant industry.

- Additionally, methodologies such as agile development, user experience design enables improvement, seamless user experiences, and data-driven decision-making.

- Ultimately, a well-designed and implemented order and invoicing system empowers restaurants to deliver exceptional service, maximize efficiency, and foster long-term customer loyalty.

Thank You...!!