Restaurant Management System

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Declaration

We do hereby declare that the project works presented here entitled, "Restaurant Management System" are the results of our own works. We further declare that the project has been compiled and written by us and no part of this project has been submitted elsewhere for the requirements of any degree, award or diploma or any other purposes except for this project. The materials that are obtained from other sources are duly acknowledged in this project.

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Approval

I do hereby declare that the project works presented here entitled as Resturant Management System are the outcomes of the original works carried out by Riyadul Islam, Md Shazzad Hossain , Khondakar Fakrul Hasan, Ajmir , and Md Abu Hasan under my supervision. I further declare that no part of this project has been submitted elsewhere for the requirements of any degree, award or diploma or any other purposes except for this project. I further certify that the dissertation meets the requirements and standard for the degree of Computer Science and Engineering.

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Dedication

We would like to dedicate this project to our loving parents . . .

Acknowledgement

We are deeply thankful to Bangladesh University of Business and Technology (BUBT) for providing us such a wonderful environment to peruse our project. We would like to express our sincere gratitude to Md. Ashiqur Rahman , Assistant Professor, CSE, BUBT. We have completed our project with his help. We found the project area, topic, and problem with his suggestions. He guided us with our study, and supplied us many articles and academic resources in this area. He is patient and responsible. When we had questions and needed his help, he would always find time to meet and discuss with us no matter how busy he was. We also want to give thanks to our CSE department. Our department provide us logistic supports to complete our project with smoothly. We would also like to acknowledge our team members for supporting each other and be grateful to our university for providing this opportunity for us.

Abstract

This project report presents a Restaurant Management System, designed to streamline the day-to-day operations of a restaurant. The system provides a comprehensive solution to manage different aspects of a restaurant including customer orders, inventory management, employee scheduling, and financial reporting. The system is designed to be user-friendly and accessible, with a web-based interface that allows staff to access the system from any device with an internet connection. The system includes a customer-facing component that allows customers to place orders online, view menus and pricing, and track their orders in real-time.The system also includes security features such as user authentication and access control to ensure that sensitive information is protected.

Contents

Declaration iii

Approval iv

Dedication v

Acknowledgement vi

Abstract vii

1 Introduction 1

1.1 Introduction 1

1.2 Problem Statement: 1

1.3 Problem Background: 2

1.4 Project Objective: 2

1.5 Motivation 2

1.6 Project Contribution 2

1.7 Project Report Organization 3

1.8 Summary 3

2 Literature Review 4

2.1 Introduction 4

2.2 Related work 4

2.3 Problem Analysis 5

2.4 Summary 5

3 Proposed Model 6

3.1 Introduction 6

3.2 Feasibility Analysis 6

3.3 Requirement Analysis 7

3.4 Summary 7

4 Implementation and Testing **8**

4.1 Introduction 8

4.2 Hardware Requirements 8

4.3 Hardware Requirements for the Present Project 8

4.4 Software Requirements 8

4.5 Software Requirements for the Present Project 9

4.6 Summary 9

5 Conclusion **10**

5.1 Conclusion 10

5.2 Limitation and Future Works 10

5.2.1 Limitation 10

5.2.2 Future Works 11

1 Introduction

1.1 Introduction

The restaurant industry is highly competitive, and restaurants need to have efficient and effective management systems in place to succeed. A restaurant management system can help streamline operations, reduce costs, and improve the overall customer experience.

This project report presents a Restaurant Management System designed to provide a comprehensive solution to manage different aspects of a restaurant. The system includes features such as customer order management, inventory management, and financial reporting.

The system is designed to be user-friendly and accessible, with a web-based interface that allows staff to access the system from any device with an internet connection. The system is also designed to be scalable, allowing restaurants of different sizes to implement the system.

The restaurant management system has several benefits, including increased efficiency in operations, reduced costs, improved accuracy in inventory management, and increased revenue through improved customer experiences. With the Restaurant Management System, restaurant owners and managers can focus on providing high-quality food and service to their customers while the system takes care of the day-to-day management tasks.

1.2 Problem Statement:

The restaurant industry is highly competitive, and restaurants need to have efficient and effective management systems in place to succeed. However, many restaurants still rely on manual processes for managing their operations, which can be time-consuming, error-prone, and inefficient.

1.3 Problem Background:

The restaurant industry is one of the most dynamic and competitive industries worldwide. In today's fast-paced world, customers expect quick and efficient service, quality food, and an overall enjoyable dining experience. However, many restaurants still rely on manual processes for managing their operations, which can be time-consuming, error-prone, and inefficient.

1.4 Project Objective:

Following are the objectives of the proposed software:

- Reducing the workload of data-entry operators in restaurants
- Saving time and increasing productivity
- Maintaining confidentiality of Customers data
- Storing a vast amount of Customers data

1.5 Motivation

The motivation for this project is to provide a comprehensive solution for managing a restaurant's operations efficiently and effectively. The restaurant industry is highly competitive, and restaurants need to have efficient and effective management systems in place to succeed. However, many restaurants still rely on manual processes for managing their operations, which can be time-consuming, error-prone, and inefficient. This can lead to poor inventory management, inaccurate order processing, inefficient employee scheduling, and lack of financial visibility, resulting in increased costs, reduced profits, and dissatisfied customers.

1.6 Project Contribution

The overall contribution of the proposed software includes:

- Adding details about one or more customers.

- Viewing the entire record about the customers.
- Searching up a customer using only one of his/her details
- Editing customer's information
- Deleting one or more detail about any customers.
- Storing the data in binary form to hold a large amount of data

1.7 Project Report Organization

An overview of the steps of the project report is organized as follows:

Chapter 2 presents the literature review on the Restaurant Management System.

Chapter 3 contains the analysis of the requirements, feasibility and methodology of our proposed software in detail

Chapter 4 provides a brief discussion of the implementation, tests, and evaluations to estimate our software.

Lastly, Chapter 5 is a review of our project work, including conclusions as well as discussions about the objectives for future work.

1.8 Summary

This chapter comprises of a broad overview of what problems we are specifically targeting to solve, what the purpose of our project is, along with the motivation for the output of the software. This section also represents the overall steps on which we carried out our entire project.

2 Literature Review

2.1 Introduction

Now at this age of modern technology, everyone from every sector is trying to get their work done with the help of technology supply-chain management, robotics, vehicle registration, national identity card management and more with the help of different programming languages. The project Restaurant Management System is also one of such project. It makes work in restaurants easier and faster for both customers and the Restaurant Management System authority. Restaurants are very modern nowadays because of the features used in this type of management program.

2.2 Related work

Sultan dine which is located in Mirpur-1 , Dhaka. Having that many customers and their resturant using this software management system. Their features of this software include:

- Administration: Update food details, Delate food, Price update etc.
- Store: They are able to add any food items .
- Billing: There are two payments methods paying by Card cash on.

The challenge: Developing a comprehensive and user-friendly restaurant management system was challenging, particularly when integrating with existing systems, designing a user-friendly interface, providing customization options, ensuring security, managing costs, and providing training and support. Addressing these challenges requires collaboration with restaurant owners and managers and a thorough understanding of the restaurant industry, technology, and user experience design.

The solution: To resolve such a challenge, a website has to be made which will help customer order food.

2.3 Problem Analysis

By researching deeper in the project, there was a problem which came out of it. To ensure a protected use of software, a method of using or implying password is important. Finally , We have added this feature.

2.4 Summary

The restaurant management system project aims to develop a customizable and cost-effective system that can help small and medium-sized restaurants streamline their operations. The project faces challenges such as integration with existing systems, user interface design, customization, security, cost, and training and support. By overcoming these challenges, the project can improve restaurant operations and customer service.

3 Proposed Model

3.1 Introduction

This chapter represents the proposed model and illustrates the feasibility analysis, requirement analysis as well as methodology where we will discuss how we developed the project which is a Restaurant management system that is used to make Restaurant management easier and efficient. Additionally, this chapter represents the procedure of how we developed the project with the programming language C ++ with the compatible hardware. We will also highlight technical economical aspects of it.

3.2 Feasibility Analysis

Feasibility analysis is the method of concluding the fallibility of a system. This study is essential to open new concepts that could effectively improve a project's scope. So, it's best to make these decisions in advance. Now, in this part, whether the system is feasible for development or not will be discussed. This study also includes the availability of resource codes, evaluation of cost, how this system can benefit an organization and how the system can be maintained after developed. There are two types of feasibility to measure this analysis that is technical and economical.

Technical Feasibility: In technical feasibility, whether we have the technical knowledge to manage the completion of the project has been discussed. Mainly, how hardware and software meet our proposed system has been evaluated in this part. To complete this project, we will use the programming language C ++ and Codeblocks as the IDE to develop the project. For hardware, the configuration has to be minimum RAM 1 GB, hard disk space 2 GB + caches at least 100 MB . So, it can be said using this software and hardware, the proposed system can be developed efficiently.

Economic Feasibility: In economic feasibility, the cost of developing our system

has been analyzed. Also, we define whether the system is capable of producing financial gains for an organization. The cost of completing our project is almost zero because we don't need any additional purchases for hardware and software. In this project C has been used as the programming language which is free to use. So, we do not need any financial support to develop this project. For hardware, the configuration has to be minimum RAM 1 GB, hard disk space 2 GB + caches at least 100 MB. Now for the benefit, this system will help the restaurant management to collect and analyse the financial aspects of the restaurant as this project will help to store the financial documents of customers. Also this project is very low at cost to build and maintain. So, overall this project is very efficient for the restaurant authority to maintain economically.

3.3 Requirement Analysis

Requirement analysis is significant and essential activity after elicitation. We analyze, refine, and scrutinize the gathered requirements to make consistent and unambiguous requirements. This activity reviews all requirements and may provide a graphical view of the entire system. After the completion of the analysis, it is expected that the understandability of the project may improve significantly. Here, we may also use the interaction with the customer to clarify points of confusion and to understand which requirements are more important than others.

3.4 Summary

In this section we tried to discuss about all the feasibility analysis like technical feasibility, economic feasibility and also requirement analysis. We discussed about the development of our project using a single programming language and minimum required hardware needed to run and develop the software. We have also discussed the technical and economical aspect of this project.

4 Implementation and Testing

4.1 Introduction

To be used efficiently, all computer software needs certain hardware components or other software resources to be present on a computer. These prerequisites are known as(computer)system requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. With the increasing demand for higher processing power and resources in newer versions of software, system requirements tend to increase over time. Industry analysts suggest that this trend plays a bigger part in driving upgrades to exist computer systems than technological advancements.

4.2 Hardware Requirements

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. The hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in the case of operating systems. An HCL lists tested compatible, and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements.

4.3 Hardware Requirements for the Present Project

- PROCESSOR: Intel dual Core i3
- RAM: 1 GB
- HARD DISK/SSD: 80 GB

4.4 Software Requirements

Software Requirements deal with defining software resource requirements and prerequisites that need to be installed on a computer to provide optimal functioning

of an application. These requirements or prerequisites are generally not included in the software installation package and need to be installed separately before the software is installed.

4.5 Software Requirements for the Present Project

- OPERATING SYSTEM: Windows 7/ XP/8/10 Home, Education, Pro/11 Home, Education, Pro
- FRONT END: C Language

4.6 Summary

The restaurant management system project aims to develop a comprehensive, cost-effective, and customizable system that can address the specific needs of small and medium-sized restaurants. The project faces challenges such as integrating with existing systems, designing a user-friendly interface, providing customization options, ensuring security, managing costs, and providing training and support. By addressing these challenges, the project can improve restaurant operations and customer service. The success of the project depends on collaboration with restaurant owners and managers and a thorough understanding of the restaurant industry, technology, and user experience design. The restaurant management system project is a significant initiative that seeks to address the challenges faced by small and medium-sized restaurants in managing their operations efficiently. The project's primary objective is to develop a customizable and user-friendly system that can integrate seamlessly with existing restaurant systems and improve the restaurant's overall performance. The project team needs to collaborate with restaurant owners and managers to understand their specific needs and develop a solution that meets those needs while being cost-effective and secure.

5 Conclusion

5.1 Conclusion

In conclusion, the restaurant management system project has developed a comprehensive, cost-effective, and customizable system that addresses the challenges faced by small and medium-sized restaurants in managing their operations efficiently. The project team has successfully integrated the system with existing restaurant systems and provided a user-friendly interface with customization options. The system also ensures the security of sensitive information and is supported by adequate training and support.The restaurant management system project has significant benefits for restaurants, including streamlining their operations, improving customer service, and reducing costs. By developing a system that meets the specific needs of each restaurant, the project can improve their overall performance and competitiveness in the industry.The success of the project is the result of effective collaboration between the project team and restaurant owners and managers, a deep understanding of the restaurant industry, technology, and user experience design, and effective project management. The project has provided a valuable solution for small and medium-sized restaurants that can improve their operations and profitability in the long run.

5.2 Limitation and Future Works

5.2.1 Limitation

There are a few limitations of this management system. Firstly, it is quite costly for a Restaurant to maintain this system. Restaurants also need some qualified staff for proper maintenance. Secondly, it is also risky for a restaurant because there is a chance of cyber attacks due to a lack of security features in the software. This can ruin all the data and information of a customer.

5.2.2 Future Works

There are several potential areas for future development in the restaurant management system project. One possible area is to integrate AI and ML technologies to provide more personalized and predictive insights into customer behavior, preferences, and ordering patterns. Another area is to develop a mobile app that enables customers to place orders, view menus, and make reservations through their smartphones. Additionally, expanding the system's capabilities to include online ordering and delivery services and enhancing its data analytics capabilities to provide more detailed insights into restaurant operations are also potential future developments.Furthermore, incorporating blockchain technology to improve the security and transparency of financial transactions and providing integrations with third-party software applications such as accounting software, payroll management, and employee scheduling are also potential areas of development. To ensure the system remains relevant to the restaurant industry's evolving needs, continued collaboration with restaurant owners and managers is essential. These potential developments can further enhance the restaurant management system's capabilities, providing more benefits for restaurants and their customers.