Kathmandu Model College

Science

Computer

Rabindra Sir

Group Project

A Collection of Small Projects

- LMS, BMS, Hangman, Tic-tac-toe, Quiz -

Student Names	
Studies:	C Programming
Semester:	2
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Abstract

This project delves into the intricate design and meticulous implementation of three diverse console-based systems, namely a Library Management System (LMS), Billing Management System (BMS), and a Tic Tac Toe game. The algorithms presented not only provide a functional blueprint for each system but also exemplify a commitment to efficient, modular, and user-friendly programming practices.

The Library Management System algorithm meticulously outlines the step-by-step process for managing book information. Utilizing file handling techniques, the system seamlessly handles the display, addition, and removal of books while incorporating a robust mechanism for data storage and retrieval in the books.txt file. The inclusion of unique IDs and clear user instructions ensures a smooth and intuitive experience.

In the Billing Management System, the algorithm showcases an innovative approach to customer record management. Leveraging the power of structures, the system elegantly handles tasks such as adding, viewing, modifying, and deleting customer records. The inclusion of a well-structured menu enhances user interaction, offering a streamlined experience in managing phone billing records.

The Tic Tac Toe game algorithm, while seemingly simple, exhibits a deep understanding of game logic and board management. The use of a 2D array for the game board, coupled with functions for displaying and updating the board, creates a dynamic and engaging gaming experience. The incorporation of a game loop ensures seamless gameplay, while the modular design allows for extensibility and potential future enhancements.

Declaration

We, the undersigned, collectively declare that the work presented in this project, titled "An Innovative Trio: Exploring the Algorithms and Implementation of Library Management, Billing Management, and Tic Tac Toe Systems," is a result of collaborative efforts among five brilliant students. Each student has contributed actively and responsibly to various aspects of the project, bringing their unique skills and insights to the table.

1. **Student One:** *Bhashkar Paudyal*

   - Contribution: Library Management System (LMS) Algorithm
   - Responsibilities: File handling, book management functionalities, and algorithmic design for the Library Management System.
   - Verification: I verify that my contributions align with the outlined responsibilities and demonstrate a comprehensive understanding of the LMS algorithm.

2. **Student Two:** Progress Shrestha

   - Contribution: Billing Management System (BMS) Algorithm
   - Responsibilities: Structure implementation, customer record management, and algorithmic design for the Billing Management System.
   - Verification: I verify that my contributions align with the outlined responsibilities and demonstrate a comprehensive understanding of the BMS algorithm.

3. **Student Three:** *Subin Shrestha*

   - Contribution: Tic Tac Toe Game Algorithm
   - Responsibilities: 2D array implementation, game logic, and algorithmic design for the Tic Tac Toe game.
   - Verification: I verify that my contributions align with the outlined responsibilities and demonstrate a comprehensive understanding of the Tic Tac Toe algorithm.

4. **Student Four:** *Saugat Thapa*

   - Contribution: Quiz Game
   - Responsibilities: Drafting a comprehensive game algorithm
   - Verification: I verify that my contributions align with the outlined responsibilities and effectively communicate the essence of the project.

5. **Student Five:** *Dibyam Shrestha*

   - Contribution: Hangman Game
   - Responsibilities: Drafting the algorithm for hangman game, writing comprehensive code
   - Verification: I verify that my contributions align with the outlined responsibilities and accurately represent the collaborative efforts of all students involved.

This project represents the collective knowledge, skills, and dedication of the aforementioned students, and we affirm that all contributions are original and have been made with integrity. Each student has actively participated in discussions, coding, and documentation, fostering a collaborative and enriching learning experience.

Signatures:

1. *Student One:*

2. *Student Two:*

3. *Student Three:*

4. *Student Four:*

5. *Student Five:*

Acknowledgement

We extend our heartfelt gratitude and appreciation to all those who have contributed to the successful completion of this project.

First and foremost, we express our sincere thanks to our academic instructors for their guidance, support, and encouragement throughout the development of this project. Their insights and expertise have been instrumental in shaping our understanding and refining our skills in software development.

We would also like to acknowledge the collaborative spirit and commitment of each team member. Our collective efforts have resulted in a comprehensive exploration of three distinct systems, showcasing the diversity of our skills and knowledge. The dynamic exchange of ideas and constructive feedback within the team has undoubtedly enriched the quality of the project.

Furthermore, we appreciate the open-source community and the wealth of resources available online that have significantly contributed to our learning and problem-solving processes. The ability to access a plethora of coding examples, algorithms, and best practices has been invaluable in overcoming challenges and refining our code.

Lastly, we express our gratitude to our families and friends for their unwavering support and understanding during the demanding phases of this project. Their encouragement has been a driving force in our pursuit of excellence.

In conclusion, this project represents a collective effort and collaborative journey. We acknowledge the invaluable contributions of all those mentioned and unmentioned, recognizing that this achievement is a reflection of shared knowledge, dedication, and a passion for continuous learning.

Thank you.