

**PROJECT REPORT**

***“Bank Management System”***

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| **Development Team (CSE115 – Section 7)** | | | |
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**Submitted to –**

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**1. INTRODUCTION**

The Bank Management System is a console-based application designed to enhance the operational efficiency of financial institutions. This user-friendly software solution simplifies account management, transaction processing, and report generation for both customers and bank employees. By leveraging the system, banks can streamline workflows, optimize resource allocation, and provide superior customer service. The Bank Management System represents a modern approach to banking operations, empowering institutions to adapt to industry trends and meet customer needs effectively.

**2. METHODOLOGY**

To develop the Bank Management System in C, the following methodology was employed, considering the requirements specified:

* **Design and Structure:**
  + The project utilized an array of structures to store and manage customer data.
  + The structure included fields such as account number, customer name, balance, and other relevant information.
  + The structure provided a convenient way to organize and access customer data.
* **File System:**
  + The project incorporated a file system to store and retrieve users' data.
  + Functions were implemented to write customer data to the file and read data from the file.
  + This approach ensured persistent storage of customer information, allowing for data retrieval even after program restarts.
* **Custom Functions:**
  + Several custom functions were implemented to perform specific tasks required by the project.
  + Functions were developed to write data, read data, sort data, search, delete, and edit customer records.
  + These functions provided the necessary functionality to manage customer accounts efficiently.
* **Error Handling:**
  + Appropriate error handling mechanisms were incorporated to handle various scenarios.
  + The program validated user inputs to detect and handle invalid inputs effectively.
  + Error handling was implemented for situations such as insufficient funds, duplicate account numbers, and file system errors.
  + By incorporating error handling, the project aimed to provide a robust and reliable banking system.
* **Different Interfaces:**
  + Appropriate error handling mechanisms were incorporated to handle various scenarios.
  + The Bank Management System implemented separate interfaces for bank employees and customers.
  + A password-based login system was introduced to ensure secure access and management of the system by authorized personnel.
  + The employee interface provided additional functionalities and privileges compared to the customer interface.

**3. BENEFITS**

* **Efficient Account Creation:**

Users can easily create new bank accounts by providing necessary information, simplifying the account opening process and saving time for both customers and bank employees.

* **Convenient Fund Deposits:**

Users can effortlessly deposit funds into their accounts, ensuring a seamless transaction experience. The system prompts for essential details, such as the date, account number, and deposit amount, facilitating accurate and hassle-free deposits.

* **Secure Fund Withdrawals:**

Users can conveniently withdraw funds from their accounts, ensuring the availability of sufficient balance. The system prompts for essential details, such as the date, account number, and withdrawal amount, while implementing checks to prevent overdrawing and maintain account security.

* **Quick Account Balance Inquiry:**

Users can easily check their account balance with a simple inquiry function. By entering the account number, users can swiftly access the current balance information, providing them with up-to-date financial insights.

* **Efficient Account Search:**

Users can search for specific account details based on the account number or name. This feature allows for quick retrieval of account information, enabling users to access relevant details without extensive manual searching.

* **Easy Account Deletion:**

Users have the flexibility to delete their accounts from the system when required. By providing the account number and confirming the deletion, users can efficiently remove their accounts, ensuring privacy and data management control.

* **Convenient Account Updating:**

Users can easily update their account details, such as name, address, or contact information, through the system. By entering the account number, users can view and modify their account information, ensuring accuracy and relevance.

* **Seamless Fund Transfer:**

Users can effortlessly transfer funds between different bank accounts using the system. With a straightforward process, including source and destination account numbers, date, and transfer amount, users can efficiently manage their finances and facilitate transactions.

* **Comprehensive Account Information:**

Bank employees can easily obtain the sum of all accounts' balances, allowing for efficient financial analysis and reporting. This function provides a consolidated view of the bank's financial status and aids in decision-making processes.

* **Streamlined Account Management:**

The system enables bank employees to print all accounts' information, ensuring convenient access to customer data for administrative purposes. This feature saves time and effort by providing a comprehensive overview of account details in a concise format.

* **Efficient Account Search:**

Bank employees can quickly search for specific accounts using the search functionality. By entering the account number or name, employees can promptly retrieve account information, facilitating efficient customer service and query resolution.

**4. CONCLUSION**

In conclusion, the Bank Management System offers streamlined account management, convenient fund transactions, and efficient inquiries for users. The system's different interfaces cater to both customers and bank employees, ensuring a user-friendly experience. Additionally, the implementation of error handling mechanisms and password-protected menus enhances security and reliability.

During the development of this project, we gained valuable experience in C programming, learning and applying various technicalities such as arrays of structures, data manipulation functions, error handling, and file system management. This project has expanded our knowledge and proficiency in C programming and provided us with practical problem-solving skills. Overall, it has been a valuable learning experience that has prepared us for future projects in this domain.