 **RNS Institute of Technology, Bengaluru – 98**

(AICTE Approved, VTU Affiliated and NAAC 'A' Accredited)

**Department of Information Science and Engineering**

(Accredited by NBA for the Academic years 2018-19, 2019-20 and 2020-2021)

**Data structures Laboratory-18CSL38**

**Mini Project Evaluation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Title** | ATM TRANSACTION | | |
| **USN** | 1RN19IS159 | 1RN19IS162 | 1RN19IS185 |
| **Name** | SUMIT KUSHWAHA | SURAJ CHAUDHARY | YASH PATHAK |

**Abstract**

*The project demonstrates the working of ATM machine. The program is build with C Language. The program takes input from user and depending on user input, the program performs corresponding task. The user can perform tasks like withdraw money, transfer money, change pin, balance enquiry & print mini statement in this program.*

**Introduction**

*As the program starts, the program asks user to enter his ATM card number and his pin number. When the user enters correct credentials, it will provide the below options that can be performed in his account :*

*1. Withdraw : The user withdraws some amount from his/her account and after successful withdrawal his balance gets updated.*

*2. Transfer Money : The user can transfer money to other people account, after successful transaction the user and receiver’s balance gets updated.*

*3. Pin Change : User has a option to change his pin number allocated to his account.*

*4. Mini Statement : All the transactions processed through the users account will be displayed once the user selects this option.*

*5. Balance Enquiry : If the user selects this option, the amount available on the users account is displayed.*

*6. Back to Login Page : The user will be logged out from the program once he selects this option and after then another person can login into the program.*

**Description about the project work**

*The project demonstrates the working of ATM Machine. The data structures used in the project are :*

*Array : Array is used in the project to store all customers details like account number, card number, pin number, balance & phone number. The array is defined with structure.*

*Single Linked List : Single linked list is used to store all transactions requested by the customers. It contains fields like sender account number, receiver account number & transaction amount.*

*The customers have options to perform the following tasks :*

1. *Withdrawal : If a customer wants to withdraw money from his account then the customer needs to select this option.*
2. *Transfer Money : If a customer wants to transfer money to account of other people then the customer needs to choose this option.*
3. *Pin Change : Customers can change their account’s pin by using this option.*
4. *Mini Statement : All the transactions occurred with the account of a customer will be displayed if the customer selects this option.*
5. *Balance Enquiry : If a customer wishes to check his account balance then this option will help him to display his account balance.*

*Apart from this, the customer has option to log out from his account or to terminate the program. All the transaction will be lost once the program is terminated.*

*Some accounts are already defined to realize the program which is stored in the array. So all the tasks occurring during execution will be lost after termination of the program.*

*When the program is executed,the user will be asked to enter his ATM card number and pin number. Then the program will authenticate the user and if the users pin do not match with his card number or if the user enters invalid card number then the program displays invalid credentials and asks user to try logging in again.*

*When withdrawal option is selected, the user is asked to enter the amount to be withdrawal, then the amount entered by the user is verified whether it is positive or not and the input amount is less than the balance in the users account. If both conditions are verified then the amount is deducted and the transaction is inserted in the linked list. Then a message is displayed that the input amount has been withdrawal successfully.*

*If the user requests to transfer money, the he will be asked to enter the account number to which he wants to transfer money. Then he will be asked to enter the amount he wants to transfer. Now, the program first checks whether the sender has that amount of balance available in his account or not. If the amount is present then that amount will be transferred to the receivers account and the balance will be updated in the account of sender as well as receiver. After then the program displays that the transaction was successful and the amount transferred & receivers account number.*

*If the user needs to change his account’s pin by selecting option Pin Change then he will be asked to enter a new four digit pin and then he will be asked to re-enter the pin to confirm the new pin. The pin will be checked once by the program whether the pin given by the user is positive or not. After validating positive input, the program displays that the pin has been changed successfully and then the pin will be updated in the array to the corresponding user.*

*Mini Statement option prints all the transaction occurred with the account of the current active user. This option calls a function which traverses the single linked list one by one. First the sender and receiver field is matched in the linked list, and when the matching node is detected after then the sender, receiver & transaction amount at that node is printed and the traversal continues until the linked list ends.*

*Balance Enquiry option displays the remaining balance in the account of the current active user. In this case, the balance field of the array of the active user is accessed and the balance is printed.*

*Back to Login Page option takes the user back to login page. This is performed with the help of a label. After this the user is taken back to login page where the user is asked to enter his card number and pin number.*

*Exit option exits the program, after selection of this program all the transactions are lost since the data is fixed at the starting of program in the array.*

**Results**

*With the help of this project we can realize the overall working of a ATM machine.*

*We are able to perform operations like withdrawal, transfer money, pin change, display mini statement and check balance of accounts which are already defined in the program.*

**Conclusion**

*Hence we can conclude that from this project we are able to perform operations similar to a real ATM machine. We are able to understand working of a real ATM.*

**Future Enhancements**

*Further looking towards the future enhancement, we will add file systems to the project that will help us to store and updated data. This will resolve current problem of updating data. In the current project, once the program is exited all data and transactions processed will be lost and every time we run the program we need to start with the compile time assigned data to the array and an empty single linked list.*

*But if we use file system we will always have the updated data and transactions stored in a file.*