Bank Management System Using Python

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Abstract-**Bank management system can be consider as a most important thing in economic world.in the present scenario the banking sector is the common need in everyday life.in day to day life we face the problems and then we realize something is not done in this sector like we want to change the location (branch) of our account then we need to fill the application and then some day waiting to complete bank process. In this process amount of time is more as well as here occur manual work which is increases man power. Also in current scenario aadhar card linking is must with bank account and it is possible through the ATM but if in urgent we want to link aadhar it may be not possible there is no ATM are available in that case we provide this facility through the our project i.e. Bank management system.**

1.INTRODUCTION

The project entitled "Bank management system" is a computerized telecommunications device that provides the customers of a financial institution with access to financial transactions in a public space without the need for a human clerk or bank taller (manpower). Thousands of bank performs millions of transactions every day and thousands of users used banking system in day to day life. As we know that if number of users increases us need more banks and more staff it means increasing manual work also we put more amount of money in bank it is more risky and not much secure. If we developed

advanced computerized based banking system so there is no need to open more branches as well the manpower is reduce and maximum information are stored automatically in banking server. Banking system requires authenticity and validity if a system provides these basic logics that mean we can developed a new system that authenticate and validate the user and user can do any type of virtual transaction any time anywhere in minimum amount of time. One of the most authentic codes i.e. the customer account number for recognition of any person. It always appear on and credit, withdraw, money transferring, linking aadhar with account and changing the account location in one branch to another branch in same bank. Day to day life banking system is most useful and important thing in economical world and which is very useful to develop country as well as economic power. Transaction: in banking

transaction is the execution of a program that performs an administrative or real time function, often by accessing shared data sources, usually on behalf of a banking users who have an account in the respective bank. This transaction executed by the program and it automatic do the transactions with balance and it check all conditions are satisfied or not in respective proses. This is the more secure and automatic process which do all the transaction with accuracy of calculation. In our project we also provide the facility to link aadhar with account number and we also provide the facility to change location of account with branch that mean the user can change the branch which is convenient for it. They will also change or update data like address, mobile number using online banking system.

2. LITERATURE SURVEY

In [1], Information and communication technology (ICT) has helped to drive increasingly intense global Competition. In the world history the most of the countries are most developed because of they are financially very clear for how to use the high amount of money in the developing process in own country . We also use the SOA architecture for providing the scalable and reliable service therefor we studied related to the SOA architecture to know how we use to implementation process in our project using Service Oriented Architectures (SOA).we also refer the paper who give the case study information about Scandinavian bank and a Swiss bank This two banks are working on the basis of service oriented architecture for providing the service for the customer. SOA provides potential for greater organizational agility (and thereby competitiveness). In [2], in the second paper we learn which type of problems are created in banking system during the different types of transactions. Here discuss about if any region the transaction may be fail then how to avoid it and fixed it. We also studied about Firms in Italy defaulted more against banks with high levels of past losses. This `selective' default increases where legal enforcement is weak. Poor enforcement thus can create a systematic transaction risk by encouraging banking users to defaulted masse once the continuation value of their bank relationships comes into doubt. In

banking sector the security also must and when we talk about money or property this case is more sensational then we found the security is the major thing to do in banking system. In our project we provide the security questions when customer login with account to prevent the fraud and provide the best security in the bank management system.

3.PROBLEM STATEMENT

The current banking industry faces numerous challenges in effectively managing and streamlining operations, resulting in inefficiencies, security vulnerabilities, and suboptimal customer experiences. Traditional manual processes and outdated systems hinder the bank's ability to meet the evolving demands of customers and regulatory requirements. Therefore, there is a need for a comprehensive Bank Management System (BMS) that addresses these challenges and provides a robust solution for efficient, secure, and customer-centric banking operations.

Key problems and challenges include:

1. Inefficient Customer Management: Existing systems often lack integrated customer relationship management capabilities, resulting in fragmented customer data, disjointed interactions, and subpar customer experiences. This leads to inefficiencies in customer onboarding, support, and personalized service delivery.

2. Manual and Tedious Account Operations: Manual processing of various banking operations, such as account opening, transaction processing, and balance management, is time-consuming and prone to errors. This inefficiency impacts transaction speed, customer satisfaction, and staff productivity.

3. Limited Risk Management Capabilities: Traditional banking systems struggle to effectively identify and manage risks associated with fraud, money laundering, and regulatory compliance. The lack of real-time monitoring and advanced risk detection mechanisms leaves banks vulnerable to financial losses and regulatory penalties.

4. Inadequate Reporting and Analytics: Outdated systems often lack comprehensive reporting and analytics functionalities, limiting the bank's ability to gain actionable insights from vast amounts of data. This hinders strategic decision-making, performance analysis, and compliance reporting.

5. Security Vulnerabilities: Legacy systems may lack robust security measures to safeguard sensitive customer data, leaving banks susceptible to cyber threats, data breaches, and reputational damage. The evolving nature of cybersecurity threats necessitates the implementation of advanced security protocols.

Addressing these problems through the development and implementation of an advanced Bank Management System (BMS) will enhance operational efficiency, strengthen security measures, improve risk management capabilities, and provide a seamless customer experience. A comprehensive BMS will integrate customer relationship management, automate account operations, implement advanced risk management techniques, and provide robust reporting and analytics capabilities. By addressing these challenges, banks can optimize their operations, ensure regulatory compliance, and deliver superior customer service in an increasingly competitive banking landscape.

4. PROPOSED SYSTEM

The proposed system is highly computerized in which the data related to user accounts will be secured high with high accuracy that even reduced the machine damage and human made errors and this existing system is highly efficient to offer best services to the customers as well as bank because it has user friendly access that customers less time when compare with a normal banking system. When the data is entered it will check for its validity. Appropriate massages are provided as when needed so that the user will not be in a maize of instant. The data entry screen is design such a way that all the data manipulates can be performed, it also provide record viewing facilities. Our Project developing as per the below figures. In the below fig (a) this project is use for online banking system, the user can register first

and then login. When user login successfully they will perform the operation like money withdraw, money transfer, deposit,transaction history,current balance etc. Admin has all authority to handle all the user account and transactions in a sequence to avoid unauthorized user.

In Bank management system we use n-tier architecture which is helpful to handle different tasks in fluently and sequential order. We use following architecture for the project are:
 [1]MVC architecture for Presentation layer
[2]SOA architecture for Service layer
[3]Design Pattern for data access layer
[4]Entity framework for Data access layer

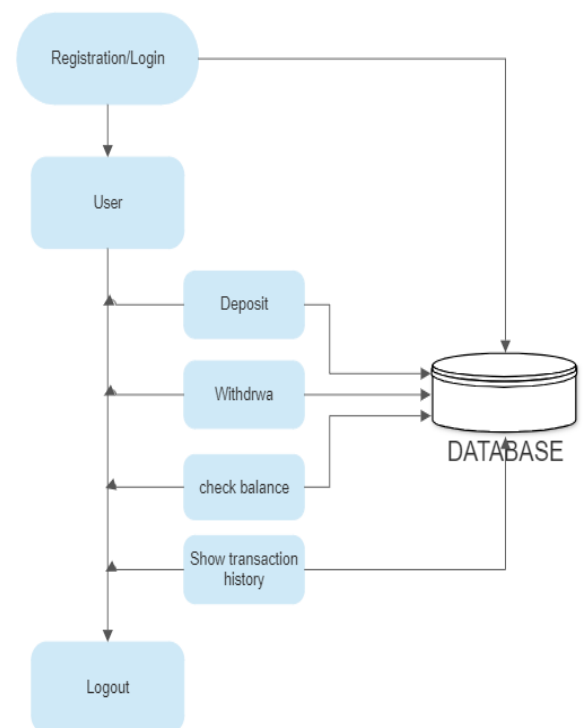The flow of working of the project as shown in below diagram:

Fig.1.Process Diagram

5.RESULTS AND DISCUSSIONS

The user can interact with the application using a GUI which was developed using python language. Here the user needs to register his account and gain the Unique Account Number generated by the system. And using the same Account Number the user is able to login to the system. After logged in the user can have the

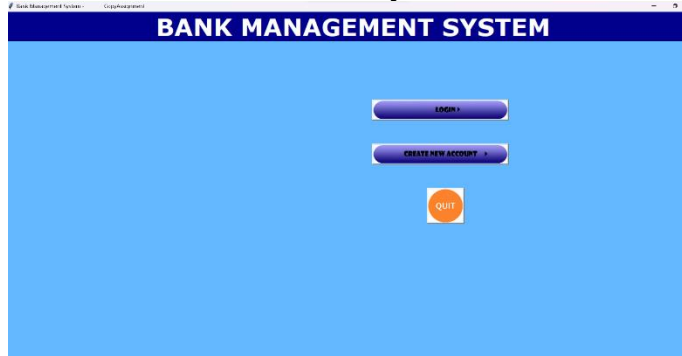services like deposit, withdraw,know current balance and transaction history.
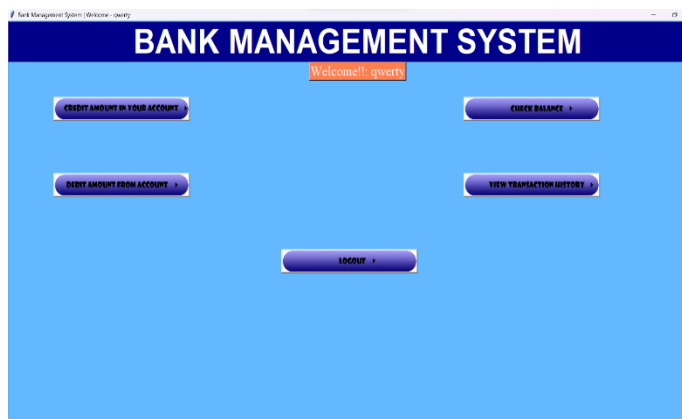

Fig .2 Login/Register Interface

Fig.3

After Registering the user details are stored in a text file(.txt) and the all the account related details are also stored in the user text file. As every user is allocated a separate text file named after their account number. And the admin can know the number of users in a txt file.
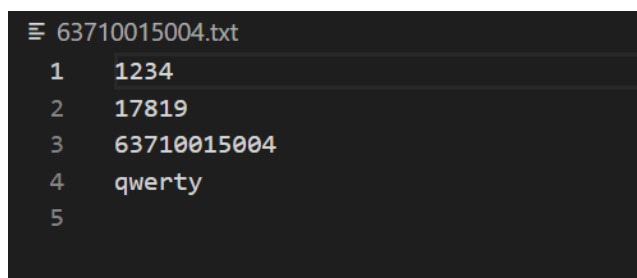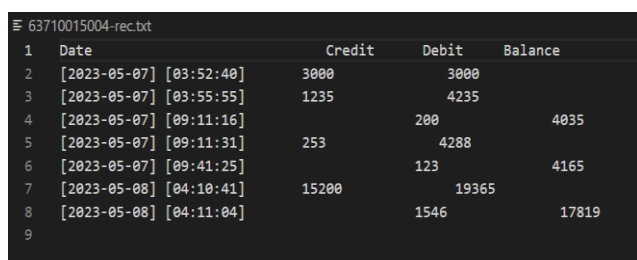

Fig.4 User Details

Fig.5 Transaction History

Here,Fig 4,5 Shows the database structure how the data is stored.

6.CONCLUSION

In conclusion, the Bank Management System (BMS) presents a valuable solution for banks to overcome operational challenges, enhance security, and deliver exceptional customer experiences. By adopting the BMS, banks can streamline processes, automate account operations, improve risk management, and access advanced reporting and analytics capabilities. The BMS enables banks to optimize efficiency, reduce costs, and stay competitive in the evolving banking landscape. Implementing the BMS is a strategic step towards efficient operations, improved security, and customer-centric banking services.

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