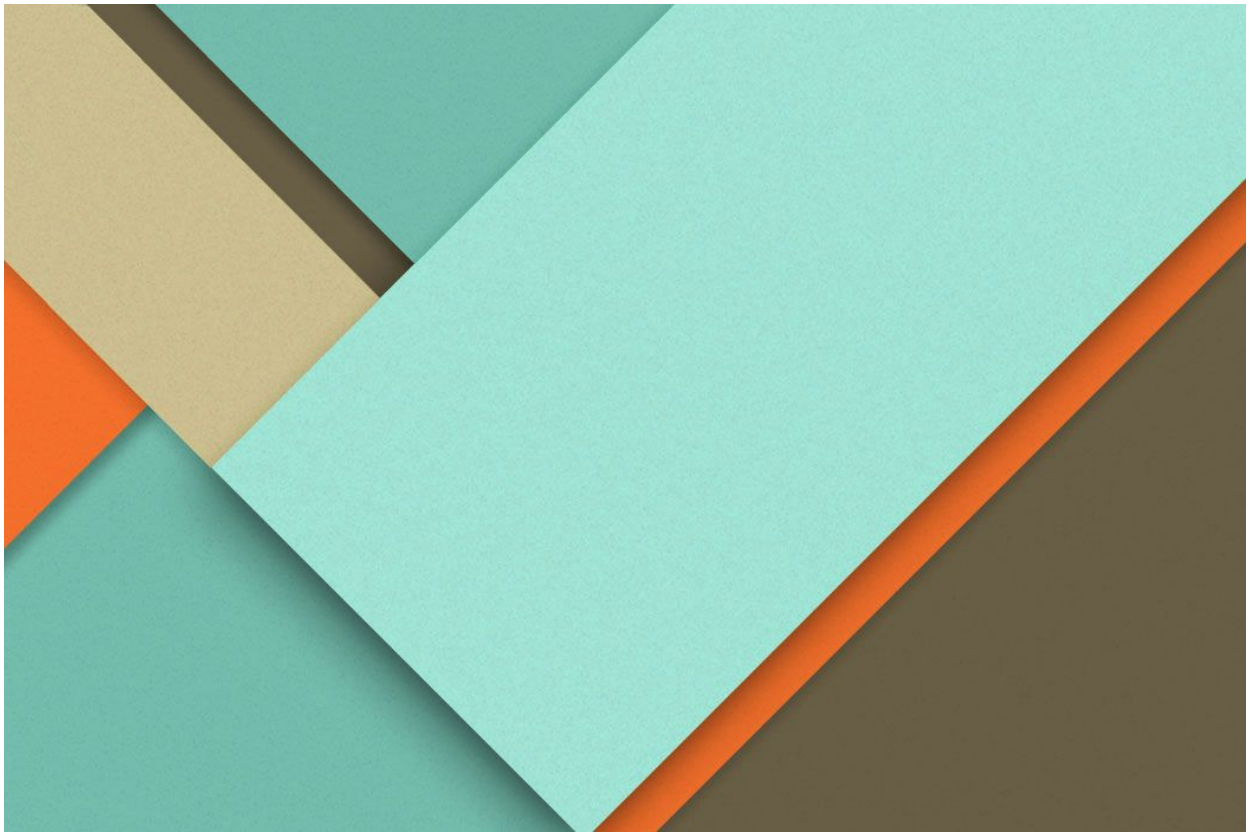

Banking made easy

Contributors

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Introduction

Through this project work, we aim to create a simplified version of a banking application. The application will act as a portal which provides it's users with various banking facilities like account management and transaction management. The aim is to learn how to create an application which uses a database in its backend. We also plan to make the application safe and secure so that it is not susceptible to vulnerabilities and security attacks.

Goals

1. Learn to create an application which uses a relational database management system
2. Learn how database systems work - how to decide the required tables and attributes

Specifications

We plan to provide the following features in the application:

- Create a new account, which may be one of the following types - Savings account, Current account, Recurring account, Fixed Deposit account
- Different categories of accounts: individual account, minor's account(needs a guardian who is above 18 years of age), senior citizen's account
- Deposit money to the account in the form cash or a cheque
- Withdraw money from the account in the form of cash
- Fund Transfer: Transfer fund to your own accounts, other bank accounts or other Bank account seamlessly
- View the transactions of the account within a specified window (passbook/balance sheet)
- Convert an individual account to a joint account
- Close the account and withdraw the balance amount as cash
- Account Details: View your bank account details, account balance, downloading bank statements, for example in PDF format
- Request Services: Give a request for Cheque book, Demand Draft, Stop Cheque Payment, Debit Card Loyalty Point Redemption etc
- Value Added Services: Pay Utility bills, Recharge Mobile, Pay any Visa Credit Card bills

Users of the application

The application aims to target the general public. There are millions of banking users across the country and the application will help them avail the services of banking with a few mouse clicks.

Data Stored

We will be using several tables in our database. Some of them are listed below:

- **Customer** - The customer table will store the data of each customer of the bank. *Attributes - customer ID, first name, last name, age, address, email ID, gender, contact number, account number, balance, account type, opening date*
- **Account** - The account table will store the data of each account managed by the bank. *Attributes - account number, account type, minimum balance, current balance, first owner ID, second owner ID, interest rate, branch ID*
- **Branch** - The branch table will store the details of the various branches of the bank. *Attributes - branch ID, address, IFSC code*
- **Transaction** - The transaction table stores the information about each transaction that happens in the bank. *Attributes - transaction ID, transaction type, transaction method, date, cheque number, account number, amount, remarks, customer ID, balance*
- **Transfer** - The transfer table stores the data of each transfer that happens across 2 bank accounts. *Attributes - transfer ID, account number of sender, account number of receiver, amount, date, remarks, balance of sender, balance of receiver*
- **Login** - The logic table stores the login credentials of various customers of the bank. Note that customer ID will act as the username for each customer and will be allotted by the bank. *Attributes - customer ID, password, last login date*
- **Cheque book** - We want to provide the facility of issuing cheque books to customers. However, we want to ensure that a customer requests a new cheque book only when he has completely used the last cheque book issued to him/her. For this, we maintain the cheque book table. *Attributes - account number, cheque book ID, number of cheques in the cheque book, first cheque ID, last cheque ID, date of issue, issuing branch ID*
- **Demand draft** - Our application has a facility of issuing demand drafts as well. *Attributes - account number, date, amount, draft ID, issuing branch ID, Payee name, balance*

- **Debit Card** - We also provide the facility of issuing debit cards. *Attributes - customer ID, account number, card number, expiry date, name on Card, issuing branch ID, CVV code, online password*
- **Utility bill** - customer ID, account number, bill amount, bill type, bill paid to, balance

Interfaces provided to customers

We will provide the following interfaces to the users of the application:

- **Create a new bank account** - For this, the customer will first have to register himself/herself as a customer (if not already a customer) and then he/she will be issued an account number by the bank. Changes will be made in login, customer and account table
- **Deposit money** - For this, the customer will simply enter the amount and select the type of transaction (cash/cheque) and appropriate changes will be made in the transaction table and the account table for this
- **Withdraw money** - This is essentially the same as depositing money. However, the application will take care of the fact that the account balance should not fall below the minimum balance. If such a thing happens, the withdrawal will be rolled back
- **Fund transfer** - The user will enter his account details and the account number of the account to which the fund has to be transferred. Appropriate changes will be made to the account and transfer tables
- **View the transactions within a specified window** - The application provides its users the facility of viewing their account details within a particular period. This query will not alter the database
- **Convert an individual account to a joint account** - A second customer has to be created before creating a joint account. For this, the login and the customer tables will be updated. Further, the account table will also be updated
- **Close the account** - The corresponding entry will be deleted from the account table and the balance money will be fetched. Also, the necessary changes will also be made in the debit card table. Note that we may choose to store the transaction data of the customer for future reference
- **Request services** - The customer will be provided with a facility of issuing cheque books, demand drafts, debit cards, etc. We will make necessary changes in the debit card, cheque book and demand draft tables
- **Value added services** - The customer may use the bank application to recharge mobiles and pay other bills. Changes will be made in the utility bill table