

Name: Manas Maheshwari
Enrollment Number: 0801CS221085

Bank Management System Project

Source Code

```
/**
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 *
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 */

import java.util.Scanner;
import java.util.ArrayList;

class Account
{
    private int accountNumber;
    private String accountHolder;
    private double balance;
    private String address;
    private long phoneNumber;
    private int age;

    //This is taking the details of User
    public Account(int age)
    {
        Scanner sc=new Scanner(System.in);

        System.out.print("Enter the Account Number : ");
        this.accountNumber=sc.nextInt();

        System.out.print("Enter the first name of Account Holder : ");
        this.accountHolder=sc.next();

        System.out.print("Enter the balance : ");
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```
        this.balance=sc.nextDouble();

        System.out.print("Enter the Phone Number : ");
        this.phoneNumber=sc.nextLong();

        System.out.print("Enter your Residential Address : ");
        this.address=sc.next();

        this.age=age;
    }

    public int getAccountNumber()
    {
        return accountNumber;
    }

    public String getAccountHolder()
    {
        return accountHolder;
    }

    public double getBalance()
    {
        return balance;
    }

    public long getPhoneNumber()
    {
        return phoneNumber;
    }

    public String getAddress()
    {
        return address;
    }
```

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```
        public void editAccountNumber(int newaccountNumber)
        {
            accountNumber = newaccountNumber;
        }

        public void editAccountHolder(String newaccountHolder)
        {
            accountHolder = newaccountHolder;
        }

        public void editPhoneNumber(long newphoneNumber)
        {
            phoneNumber = newphoneNumber;
        }

        public void editAddress(String newaddress)
        {
            address = newaddress;
        }

        public void editBalance(double newBalance)
        {
            balance = newBalance;
        }

        public int getAge()
        {
            return age;
        }

    }

    class Bank
    {
        private ArrayList<Account> accounts;
```

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```
public Bank()
{
    accounts = new ArrayList<>();
}

//adding account to arraylist
public void addAccount(Account account)
{
    accounts.add(account);
}

//for finding account
public Account findAccount(int accountNumberFind)
{
    for (Account account : accounts)
    {
        if (account.getAccountNumber() == accountNumberFind)
        {
            int count=0;
            while(count==0)
            {
                System.out.println("Account Number found.\n");
                count++;
            }
        }
        else
        {
            continue;
        }
    }
    return null;
}

//for showing details
public void showDetails(int accountNumberShow)
{

```

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```
        for(Account account : accounts)
        {
            if(account.getAccountNumber() == accountNumberShow)
            {
                Scanner sc=new Scanner(System.in);

                System.out.println("Account Number : "+account.getAccountNumber());
                System.out.println("Account Holder Name : "+account.getAccountHolder());
                System.out.println("Account Balance : Rs. "+account.getBalance());
                System.out.println("Phone Number : "+account.getPhoneNumber());
                System.out.println("Address : "+account.getAddress());
            }
            else
            {
                System.out.println("Account Number not found.\n");
            }
        }
    }
}
```

```
//for modifying details
public void editDetails(int accountNumberEdit)
{
    Scanner sc = new Scanner(System.in);

    for(Account account : accounts)
    {
        if(account.getAccountNumber() == accountNumberEdit)
        {
            int flag=0;
            while(flag==0)
            {
                System.out.println("Mention the index you want to edit : ");
                System.out.println("1. Account Number.");
                System.out.println("2. Account Holder Name.");
                System.out.println("3. Account Balance.");
                System.out.println("4. Phone Number.");
            }
        }
    }
}
```

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```
System.out.println("5. Residential Address.");

System.out.println("6. Exit Editing.");

int index=sc.nextInt();

switch(index)
{
    case 1:
        System.out.println("Account Number cannot be changed.\n");
        break;

    case 2:
        System.out.print("Enter new Account Holder Name : ");
        String newaccountHolder = sc.next();
        account.editAccountHolder(newaccountHolder);
        System.out.println("\nUpdated Details : \n");
        showDetails(accountNumberEdit);
        break;

    case 3:
        System.out.println("Sorry Balance cannot be edited.\n");
        break;

    case 4:
        System.out.print("Enter new Phone Number : ");
        long newphoneNumber = sc.nextLong();
        account.editPhoneNumber(newphoneNumber);
        System.out.println("\nUpdated Details : \n");
        showDetails(accountNumberEdit);
        break;

    case 5:
        System.out.print("Enter new Residential Address : ");
        String newaddress = sc.next();
        account.editAddress(newaddress);
        System.out.println("\nUpdated Details : \n");
```

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```
        showDetails(accountNumberEdit);
        break;

        case 6:
            flag++;
            break;

        default:
            System.out.println("Invalid Index.");
    }
}
else
{
    System.out.println("Account Number not found. \n");
}
}

}

//for transfereing amount
public void transferAmount(int accountNumber1, int accountNumber2, double amount)
{
    for(Account account : accounts)
    {
        if(amount >= 0.0)
        {
            if(account.getAccountNumber() == accountNumber1)
            {
                if(account.getBalance() >= amount)
                {
                    double balance1 = account.getBalance();
                    balance1 -= amount;
                    account.editBalance(balance1);
                }
            }
            else
```

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```
        {
            System.out.println("\nInsufficient Balance.\n");
        }
    }
    if(account.getAccountNumber() == accountNumber2)
    {
        if(account.getBalance() >= amount)
        {
            double balance2 = account.getBalance();
            balance2 += amount;
            account.editBalance(balance2);
            System.out.println("\nTransaction Successful.\n");
        }
    }
}
else
{
    System.out.println("\n Invalid Amount. \n");
}
}

//for deleting an account
public void deleteAccount(int accountNumberDelete)
{
    for(Account account : accounts)
    {
        if(account.getAccountNumber() == accountNumberDelete)
        {
            accounts.remove(account);
        }
        else
        {
            System.out.println("Account Number not found.\n");
            return;
        }
    }
}
```


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```
    }  
}  
  
//for depositing amount  
public void depositToAccount(int accountNumberDeposit, double amountDeposit)  
{  
    if(amountDeposit >= 0.0)  
    {  
        for(Account account : accounts)  
        {  
            if(account.getAccountNumber() == accountNumberDeposit)  
            {  
                double balanceDeposit = account.getBalance();  
                balanceDeposit += amountDeposit;  
                account.editBalance(balanceDeposit);  
                System.out.println("New Balance is : Rs. " + account.getBalance());  
                break;  
            }  
        }  
    }  
    else  
    {  
        System.out.println("Invalid Amount.\n");  
    }  
}  
  
//for withdrawing amount  
public void withdrawFromAccount(int accountNumberWithdraw, double amountWithdraw)  
{  
    if(amountWithdraw >= 0.0)  
    {  
        for(Account account : accounts)  
        {  
            if(account.getBalance() >= amountWithdraw)  
            {  
                if(account.getAccountNumber() == accountNumberWithdraw)
```

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```
        {
            double balanceWithdraw = account.getBalance();
            balanceWithdraw -= amountWithdraw;
            account.editBalance(balanceWithdraw);
            System.out.println("New Balance is : Rs. " +
account.getBalance());
            break;
        }
    }
    else
    {
        System.out.println("Insufficient Balance.\n");
        break;
    }
}

}

else
{
    System.out.println("Invalid Amount.\n");
}

}

//for loan
public void loan()
{
    Scanner sc = new Scanner(System.in);

    int flag = 0;

    while(flag==0)
    {
        System.out.println("\nChoose from below index about the type of loan : ");
        System.out.println("1. Education Loan");
        System.out.println("2. Home Loan");
        System.out.println("3. Vehicle Loan");
        System.out.println("4. Exit Loan Section");
    }
}
```

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```
int index = sc.nextInt();

switch(index)
{
    //education loan interest rate = 6%.
    case 1:
        System.out.println("Enter your Account Number : ");
        int accountNumberLoan1 = sc.nextInt();
        System.out.println("Enter the name of the candidate : ");
        String candidateName1 = sc.next();
        System.out.println("Enter the amount of loan : ");
        double amountLoan1 = sc.nextDouble();
        System.out.println("Enter the tenure of loans in year : ");
        int loanTime1 = sc.nextInt();
        for(Account account : accounts)
        {
            if(account.getAccountNumber() == accountNumberLoan1)
            {
                double balanceLoan1 = account.getBalance();
                balanceLoan1 += amountLoan1;
                account.editBalance(balanceLoan1);
                System.out.println("Loan ammount has been credited.");
                System.out.println("New Balance is :
Rs."+account.getBalance());
            }
        }
        System.out.println("Interest Rate = 6%.");
        double amountPerMonth1 = (amountLoan1/(loanTime1*12)) +
0.06*(amountLoan1/(loanTime1*12));
        System.out.println("You have to pay : Rs." + amountPerMonth1 + " every
month.");

        flag++;
        break;

    //home loan interest rate = 7%.
    case 2:
```

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```
        System.out.println("Enter your Account Number : ");
        int accountNumberLoan2 = sc.nextInt();
        System.out.println("Enter the name of the eligible person : ");
        String candidateName2 = sc.next();
        System.out.println("Enter the amount of loan : ");
        double amountLoan2 = sc.nextDouble();
        System.out.println("Enter the tenure of loans in year : ");
        int loanTime2 = sc.nextInt();
        for(Account account : accounts)
        {
            if(account.getAccountNumber() == accountNumberLoan2)
            {
                double balanceLoan2 = account.getBalance();
                balanceLoan2 += amountLoan2;
                account.editBalance(balanceLoan2);
                System.out.println("Loan ammount has been credited.");
                System.out.println("New Balance is :
Rs."+account.getBalance());
            }
        }
        System.out.println("Interest Rate = 7%.");
        double amountPerMonth2 = (amountLoan2/(loanTime2*12)) +
0.07*(amountLoan2/(loanTime2*12));
        System.out.println("You have to pay : Rs." + amountPerMonth2 + " every
month.");

        flag++;
        break;

//Vehicle loan interest rate = 5%.
case 3:
    System.out.println("Enter your Account Number : ");
    int accountNumberLoan3 = sc.nextInt();
    System.out.println("Enter the name of the candidate : ");
    String candidateName3 = sc.next();
    System.out.println("Enter the amount of loan : ");
    double amountLoan3 = sc.nextDouble();
    System.out.println("Enter the tenure of loans in year : ");
```

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```
        int loanTime3 = sc.nextInt();
        for(Account account : accounts)
        {
            if(account.getAccountNumber() == accountNumberLoan3)
            {
                double balanceLoan3 = account.getBalance();
                balanceLoan3 += amountLoan3;
                account.editBalance(balanceLoan3);
                System.out.println("Loan ammount has been credited.");
                System.out.println("New Balance is :
Rs."+account.getBalance());
            }
        }
        System.out.println("Interest Rate = 5%.");
        double amountPerMonth3 = (amountLoan3/(loanTime3*12)) +
0.05*(amountLoan3/(loanTime3*12));
        System.out.println("You have to pay : Rs." + amountPerMonth3 + " every
month.");

        flag++;
        break;

    case 4:
        flag++;
        break;

    default:
        System.out.println("Enter correct Index.\n");
    }
}

}

//for fixed deposit
public void fixedDeposit()
{
    Scanner sc = new Scanner(System.in);
```

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```
        System.out.println("Enter your Account Number : ");
        int accountNumberFixedDeposit = sc.nextInt();
        System.out.println("Enter the amount to be deposited : ");
        double amountFixedDeposit = sc.nextDouble();
        System.out.println("Enter time for fixed deposit in years : ");
        int fixedDepositTime = sc.nextInt();

        for(Account account : accounts)
        {
            if(account.getAccountNumber() == accountNumberFixedDeposit)
            {
                double balanceFixedDeposit = account.getBalance();
                balanceFixedDeposit -= amountFixedDeposit;
                account.editBalance(balanceFixedDeposit);
                System.out.println("Fixed Deposit has been debited from your Account.");
                System.out.println("New Balance is : Rs."+account.getBalance());
            }
        }

        double amountMature = (amountFixedDeposit*fixedDepositTime*4)/100;
        System.out.println("You will be credited : Rs."+ (amountMature +
amountFixedDeposit) +" after completion of tenure.\n");
    }
}

public class BankManagementSystem
{
    public static void main(String args[])
    {
        //Welcome Message

        System.out.println("Welcome to Bank Management System. We are here to assist you
with your financial needs.");

        //Terms and Conditions
        System.out.println("Terms and Conditions : \n");
        System.out.println("1. Account Opening and Eligibility : ");
        System.out.println("Your age should be greater than 15\n");
        System.out.println("2. Interest Rates : ");
        System.out.println("->We will be charging 8% interest rate on Home loan.");
    }
}
```

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```
System.out.println("->We will be charging 7% interest rate on Vehicle loan.");
System.out.println("->We will be charging 6% interest rate on Education loan.");
System.out.println("->We will be giving 4% interest rate on Fixed Deposit.\n");
```

```
Scanner sc = new Scanner(System.in);
```

```
//object creation
```

```
Bank bank = new Bank();
```

```
int age;
```

```
int check=0;
```

```
while(check==0)
```

```
{
```

```
    System.out.println("\nEnter your choice : ");
    System.out.println("1. Add new Account.");
    System.out.println("2. Show Account Details.");
    System.out.println("3. Edit Account Details.");
    System.out.println("4. Transfer Amount to another Account.");
    System.out.println("5. Finding Account.");
    System.out.println("6. Deleting Account.");
    System.out.println("7. Deposit Amount.");
    System.out.println("8. Withdraw Amount.");
    System.out.println("9. Apply for Loan.");
    System.out.println("10. Fixed Deposit.");
    System.out.println("11. Exit.");
    int index=sc.nextInt();
```

```
    switch(index)
```

```
    {
```

```
        case 1:
```

```
            System.out.print("\nEnter your Age : ");
            age=sc.nextInt();
            if(age>=15)
            {
                Account newAccount = new Account(age);
```

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```
        bank.addAccount(newAccount);
    }
    else
    {
        System.out.println("You are a Minor. Your account cannot be
created.\n");
    }
    break;
```

case 2:

```
    System.out.println("Enter your Account Number : ");
    int accountNumberShow = sc.nextInt();
    bank.showDetails(accountNumberShow);
    break;
```

case 3:

```
    System.out.println("Enter your Account Number : ");
    int accountNumberEdit = sc.nextInt();
    bank.editDetails(accountNumberEdit);
    break;
```

case 4:

```
    System.out.println("Enter your Account Number : ");
    int accountNumber1 = sc.nextInt();
    System.out.println("Enter reciever's Account Number : ");
    int accountNumber2 = sc.nextInt();
    System.out.println("Enter amount to be transfered : ");
    double amount = sc.nextDouble();
    bank.transferAmount(accountNumber1, accountNumber2, amount);
    break;
```

case 5:

```
    System.out.println("Enter your Account Number : ");
    int accountNumberFind = sc.nextInt();
    bank.findAccount(accountNumberFind);
    break;
```


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case 6:

```
System.out.println("Enter your Account Number : ");  
int accountNumberDelete = sc.nextInt();  
bank.deleteAccount(accountNumberDelete);  
break;
```

case 7:

```
System.out.println("Enter your Account Number : ");  
int accountNumberDeposit = sc.nextInt();  
System.out.println("Enter Amount : ");  
double amountDeposit = sc.nextDouble();  
bank.depositToAccount(accountNumberDeposit,amountDeposit);  
break;
```

case 8:

```
System.out.println("Enter your Account Number : ");  
int accountNumberWithdraw = sc.nextInt();  
System.out.println("Enter Amount : ");  
double amountWithdraw = sc.nextDouble();  
bank.withdrawFromAccount(accountNumberWithdraw,amountWithdraw);  
break;
```

case 9:

```
bank.loan();  
break;
```

case 10:

```
bank.fixedDeposit();  
break;
```

case 11:

```
System.out.println("Thank you for choosing us.");  
System.out.println("Do Visit us again :) ");  
check++;  
break;
```

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```
        default:
            System.out.println("Invalid Index.");
        }
    }
}
```