

BANK SYSTEM

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**Conditions:**

**\*** Minimum balance should be 300.

**\***Maximum amount withdrawal 100000.

**CODE:**

**package** Bank;

**import** java.util.ArrayList;

**import** java.util.Date;

**import** java.util.HashMap;

**import** java.util.Scanner;

**interface** SavingsAccount {

**final** **double** ***rate*** = 0.05, ***limit*** = 100000, ***limit1*** = 300;

**void** deposit(**double** n, Date d);

**void** withdraw(**double** n, Date d);

}

**class** Customer **implements** SavingsAccount {

**private** String username, name, password, address, phone;

**private** **double** balance;

ArrayList<String> transactions;

// constructor

**public** Customer(String username, String password, String name, String address, String phone, **double** balance,

Date date) {

**this**.username = username;

**this**.password = password;

**this**.name = name;

**this**.address = address;

**this**.phone = phone;

**this**.balance = balance;

**this**.transactions = **new** ArrayList<String>(5);

addTransaction("Initial deposit - " + **this**.balance + " as on " + date);

System.***out***.println("Account created successfully");

}

**private** **void** addTransaction(String detail) {

// **TODO** Auto-generated method stub

transactions.add(0, detail);

**if** (transactions.size() > 5) {

transactions.remove(5);

transactions.trimToSize();

}

}

@Override

**public** **void** deposit(**double** amount, Date d) {

// **TODO** Auto-generated method stub

balance += amount;

addTransaction(amount + " credited to your account. Balance - " + **this**.balance + " as on " + d);

}

@Override

**public** **void** withdraw(**double** amount, Date d) {

// **TODO** Auto-generated method stub

**if** (amount > (balance -***limit1*** )&& amount<***limit***) {

System.***out***.println("Insufficient balance.");

System.***out***.println("RETRY");

} **else** {

balance -= amount;

addTransaction(amount + " debited from your account. Balance - " + **this**.balance + " as on " + d);

}

System.***out***.println("Balance left :" + **this**.balance);

}

**void** update(Date date) {

**if** (balance >= 2000) {

balance += ***rate*** \* balance;

} **else** {

balance -= (**int**) (balance / 100.0);

}

addTransaction("Account updated. Balance - " + **this**.balance + " as on " + date);

System.***out***.println("CURRENT BALANCE IS: " + **this**.balance);

}

**public** **boolean** checkPass(String pass) {

**return** **this**.password.equals(pass);

}

**public** **void** Details() {

System.***out***.println("Username : " + **this**.username);

System.***out***.println("Accountholder name : " + **this**.name);

System.***out***.println("Accountholder address : " + **this**.address);

System.***out***.println("Accountholder contact : " + **this**.phone);

System.***out***.println("Balance: " + **this**.balance);

}

}

**public** **class** BankSystem {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

HashMap<String, Customer> bank = **new** HashMap<String, Customer>();

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

Customer customer;

String username, password;

**double** amount;

**int** choice;

**while** (**true**) {

System.***out***.println("\n-------------------");

System.***out***.println("BANK OF JAVA");

System.***out***.println("-------------------\n");

System.***out***.println("1. Register account.");

System.***out***.println("2. Login.");

System.***out***.println("3. Update accounts.");

System.***out***.println("4. Exit.");

System.***out***.print("\nEnter your choice : ");

choice = sc.nextInt();

**switch** (choice) {

**case** 1: {

System.***out***.print("Enter name : ");

sc.nextLine();

String name = sc.nextLine();

System.***out***.print("Enter address : ");

String address = sc.nextLine();

System.***out***.print("Enter contact number : ");

String phone = sc.nextLine();

System.***out***.println("Set username : ");

username = sc.next();

**while** (bank.containsKey(username)) {

System.***out***.println("Username already exists. Set again : ");

username = sc.next();

}

System.***out***.println(

"Set a password (minimum 8 chars; minimum 1 digit, 1 lowercase, 1 uppercase, 1 special character[!@#$%^&\*\_]) :");

password = sc.next();

**while** (!password.matches((("(?=.\*\\d)(?=.\*[a-z])(?=.\*[A-Z])(?=.\*[!@#$%^&\*\_]).{8,}")))) {

System.***out***.println("Invalid password condition. Set again :");

password = sc.next();

}

System.***out***.print("Enter initial deposit : ");

amount = sc.nextDouble();

sc.nextLine();

customer = **new** Customer(username, password, name, address, phone, amount, **new** Date());

bank.put(username, customer);

**break**;

}

**case** 2: {

System.***out***.println("Enter username : ");

username = sc.next();

System.***out***.println("Enter password : ");

password = sc.next();

**if** (bank.containsKey(username)) {

customer = bank.get(username);

**if** (customer.checkPass(password)) {

**while** (**true**) {

System.***out***.println("\n-------------------");

System.***out***.println("W E L C O M E");

System.***out***.println("-------------------\n");

System.***out***.println("1. Deposit.");

System.***out***.println("2. Transfer.");

System.***out***.println("3. Last 5 transactions.");

System.***out***.println("4. User information.");

System.***out***.println("5. Withdraw");

System.***out***.println("6. Log out.");

System.***out***.print("\nEnter your choice : ");

choice = sc.nextInt();

sc.nextLine();

**int** flag = 0;

**switch** (choice) {

**case** 1:

System.***out***.print("Enter amount : ");

**while** (!sc.hasNextDouble()) {

System.***out***.println("Invalid amount. Enter again :");

sc.nextLine();

}

amount = sc.nextDouble();

sc.nextLine();

customer.deposit(amount, **new** Date());

**break**;

**case** 2:

System.***out***.print("Enter payee username : ");

username = sc.next();

sc.nextLine();

System.***out***.println("Enter amount : ");

**while** (!sc.hasNextDouble()) {

System.***out***.println("Invalid amount. Enter again :");

sc.nextLine();

}

amount = sc.nextDouble();

sc.nextLine();

**if** (amount > 300000) {

System.***out***.println("Transfer limit exceeded. Contact bank manager.");

**break**;

}

**if** (bank.containsKey(username)) {

Customer payee = bank.get(username);

payee.deposit(amount, **new** Date());

customer.withdraw(amount, **new** Date());

} **else** {

System.***out***.println("Username doesn't exist.");

}

**break**;

**case** 3:

**for** (String transactions : customer.transactions) {

System.***out***.println(transactions);

}

**break**;

**case** 4:

customer.Details();

**break**;

**case** 5: {

System.***out***.println("Enter withdrawal amount:");

**double** value = sc.nextDouble();

customer.withdraw(value, **new** Date());

**break**;

}

**case** 6: {

flag = 1;

**break**;

}

**default**:

System.***out***.println("Wrong choice !");

}

**if** (flag != 0) {

**break**;

}

}

} **else** {

System.***out***.println("Wrong username/password.");

}

} **else** {

System.***out***.println("Wrong username/password. 1");

}

**break**;

}

**case** 3: {

System.***out***.println("Enter username : ");

username = sc.next();

**if** (bank.containsKey(username)) {

bank.get(username).update(**new** Date());

} **else** {

System.***out***.println("Username doesn't exist.");

}

**break**;

}

**case** 4: {

System.***out***.println("\nThank you for choosing Bank Of Java.");

System.*exit*(1);

**break**;

}

**default**:

System.***out***.println("Wrong choice !");

}

}

}

}

**OUTPUT:**

