

```

+-----+
|  BankAccount  |
+-----+
| - accountNumber: String |
| - accountHolderName: String |
| - accountType: String   |
| - balance: double       |
| - transactionHistory: ArrayList<Transaction> |
+-----+
| + BankAccount(accountNumber: String, accountHolderName: String, accountType: String,
initialDeposit: double) |
| + deposit(amount: double): void   |
| + withdraw(amount: double): void  |
| + getBalance(): double            |
| + addTransaction(transaction: Transaction): void |
| + getTransactionHistory(): ArrayList<Transaction> |
+-----+

+-----+
|  Transaction  |
+-----+
| - transactionID: String |
| - date: LocalDateTime   |
| - type: String          |
| - amount: double        |
| - balanceAfterTransaction: double |
+-----+
| + Transaction(type: String, amount: double, balanceAfterTransaction: double) |
| + getTransactionID(): String          |
| + getDate(): LocalDateTime            |
| + getType(): String                   |
| + getAmount(): double                 |
| + getBalanceAfterTransaction(): double |
+-----+

+-----+
|   Bank   |
+-----+
| - accounts: ArrayList<BankAccount> |
| - nextAccountNumber: int            |
+-----+
| + Bank()                               |
| + createAccount(accountHolderName: String, accountType: String, initialDeposit: double):
BankAccount |

```

```
| + findAccount(accountNumber: String): BankAccount |
| + deposit(accountNumber: String, amount: double): void |
| + withdraw(accountNumber: String, amount: double): void |
| + getBalance(accountNumber: String): double |
| + getTransactionHistory(accountNumber: String): ArrayList<Transaction> |
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```

## Relationships and Class Interactions

- **BankAccount** is the main class representing individual bank accounts. It contains fields for account number, holder name, account type, balance, and transaction history. Methods in this class manage deposits, withdrawals, balance inquiries, and transaction history.
- **Transaction** is a supporting class representing individual transactions. It contains fields for transaction ID, date, type, amount, and balance after the transaction. It also has methods to retrieve these details.
- **Bank** is the overarching class managing multiple **BankAccount** objects. It handles account creation, finding accounts, and performing transactions by interacting with the **BankAccount** class.

## Summary of Fields and Methods

### BankAccount Class

- **Fields:**
  - **accountNumber** (String) - private
  - **accountHolderName** (String) - private
  - **accountType** (String) - private
  - **balance** (double) - private
  - **transactionHistory** (ArrayList<Transaction>) - private
- **Methods:**
  - **BankAccount(String accountNumber, String accountHolderName, String accountType, double initialDeposit)** - public
  - **deposit(double amount)** - public
  - **withdraw(double amount)** - public
  - **getBalance()** - public
  - **addTransaction(Transaction transaction)** - public
  - **getTransactionHistory()** - public

### Transaction Class

- **Fields:**

- `transactionID` (String) - private
- `date` (LocalDateTime) - private
- `type` (String) - private
- `amount` (double) - private
- `balanceAfterTransaction` (double) - private
- **Methods:**
  - `Transaction(String type, double amount, double balanceAfterTransaction)` - public
  - `getTransactionID()` - public
  - `getDate()` - public
  - `getType()` - public
  - `getAmount()` - public
  - `getBalanceAfterTransaction()` - public

## Bank Class

- **Fields:**
  - `accounts` (ArrayList<BankAccount>) - private
  - `nextAccountNumber` (int) - private
- **Methods:**
  - `Bank()` - public
  - `createAccount(String accountHolderName, String accountType, double initialDeposit)` - public
  - `findAccount(String accountNumber)` - public
  - `deposit(String accountNumber, double amount)` - public
  - `withdraw(String accountNumber, double amount)` - public
  - `getBalance(String accountNumber)` - public
  - `getTransactionHistory(String accountNumber)` - public

Simple Banking System

Account Holder Name:


Account Type:

Initial Deposit:

Account Number:

Amount:

Transaction History

 2024-07-25T01:06:58.107158400 - Initial Deposit: 2000.0 - Balance: 2000.0  
2024-07-25T01:07:39.426847800 - Withdrawal: 100.0 - Balance: 1900.0  
2024-07-25T01:08:25.115008200 - Deposit: 200.0 - Balance: 2100.0

Simple Banking System

Account Holder Name:

Account Type:

Initial Deposit:

Account Number:

Amount:

Deposit

 Amount Deposited: 200.0

Simple Banking System

Account Holder Name:


Account Type:

Initial Deposit:

Account Number:

Amount:

Balance

 Current Balance: 1900.0

Simple Banking System

Account Holder Name:


Account Type:

Initial Deposit:

Account Number:

Amount:

Withdrawal

 Amount Withdrawn: 100.0


Simple Banking System

Account Holder Name:

Account Type:

Initial Deposit:

Account Created

 Account Number: 1000



Simple Banking System


Account Holder Name: Bobby Thomas

Account Type: Checkings

Initial Deposit: 400

Create Account

Account Created

 Account Number: 1001

OK

```
sactionPane = new GridPane();
```