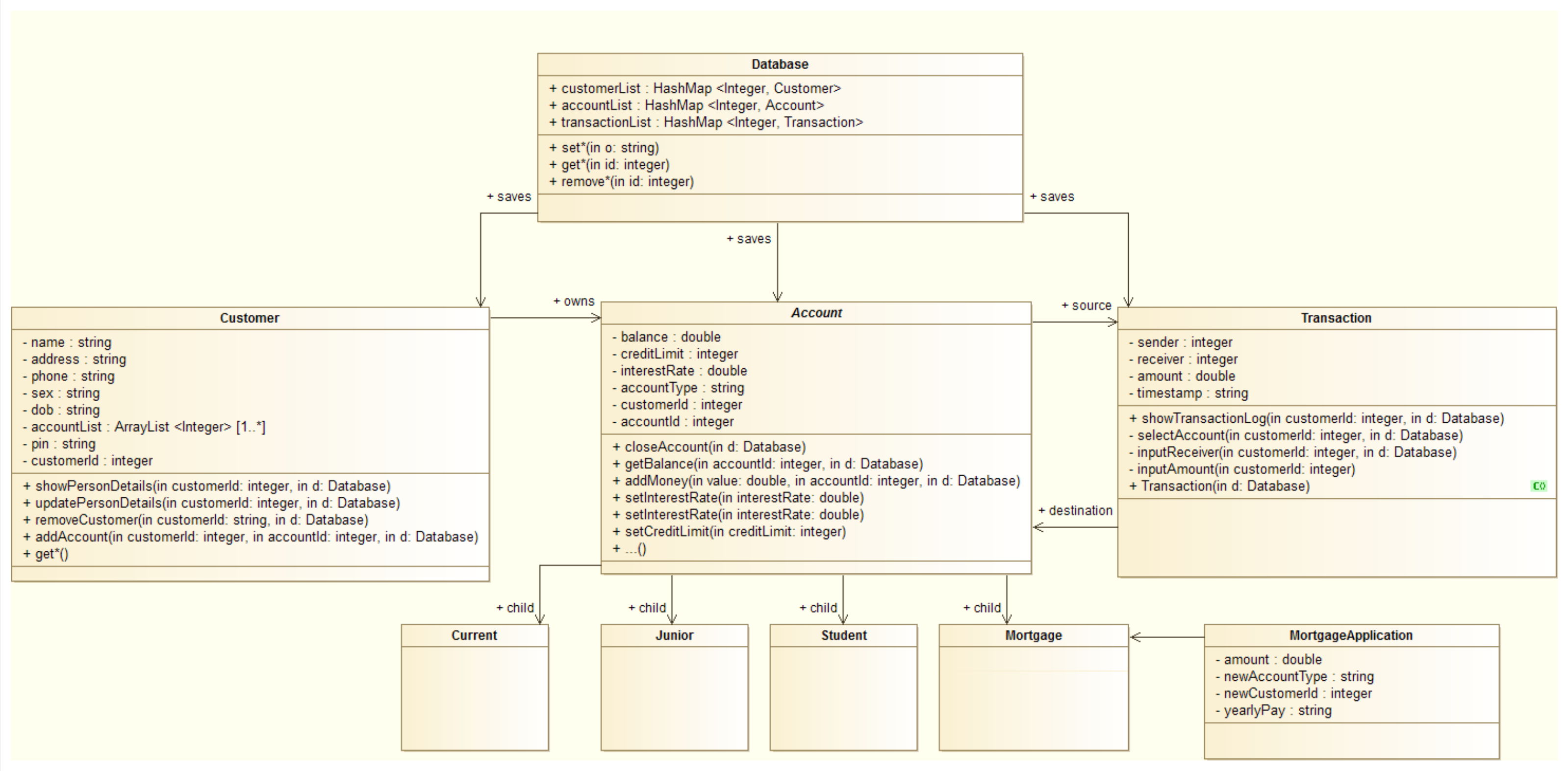
BANK SIM

>cd ./Overview_



Database

+ customerList : HashMap <Integer, Customer>
+ accountList : HashMap <Integer, Account>
+ transactionList : HashMap <Integer, Transaction>

+ set*(in o: string)
+ get*(in id: integer)
+ remove*(in id: integer)

Customer

- name : string
- address : string
- phone : string
- sex : string
- dob : string
- accountList : ArrayList <Integer> [1..*]
- pin : string
- customerId : integer

+ showPersonDetails(in customerId: integer, in d: Database)
+ updatePersonDetails(in customerId: integer, in d: Database)
+ removeCustomer(in customerId: string, in d: Database)
+ addAccount(in customerId: integer, in accountId: integer, in d: Database)
+ get*()

Account

- balance : double
- creditLimit : integer
- interestRate : double
- accountType : string
- customerId : integer
- accountId : integer

+ closeAccount(in d: Database)
+ getBalance(in accountId: integer, in d: Database)
+ addMoney(in value: double, in accountId: integer, in d: Database)
+ setInterestRate(in interestRate: double)
+ setInterestRate(in interestRate: double)
+ setCreditLimit(in creditLimit: integer)
+ ...()

Transaction

- sender : integer
- receiver : integer
- amount : double
- timestamp : string

+ showTransactionLog(in customerId: integer, in d: Database)
- selectAccount(in customerId: integer, in d: Database)
- inputReceiver(in customerId: integer, in d: Database)
- inputAmount(in customerId: integer)
+ Transaction(in d: Database)

Current

Junior

Student

Mortgage

MortgageApplication

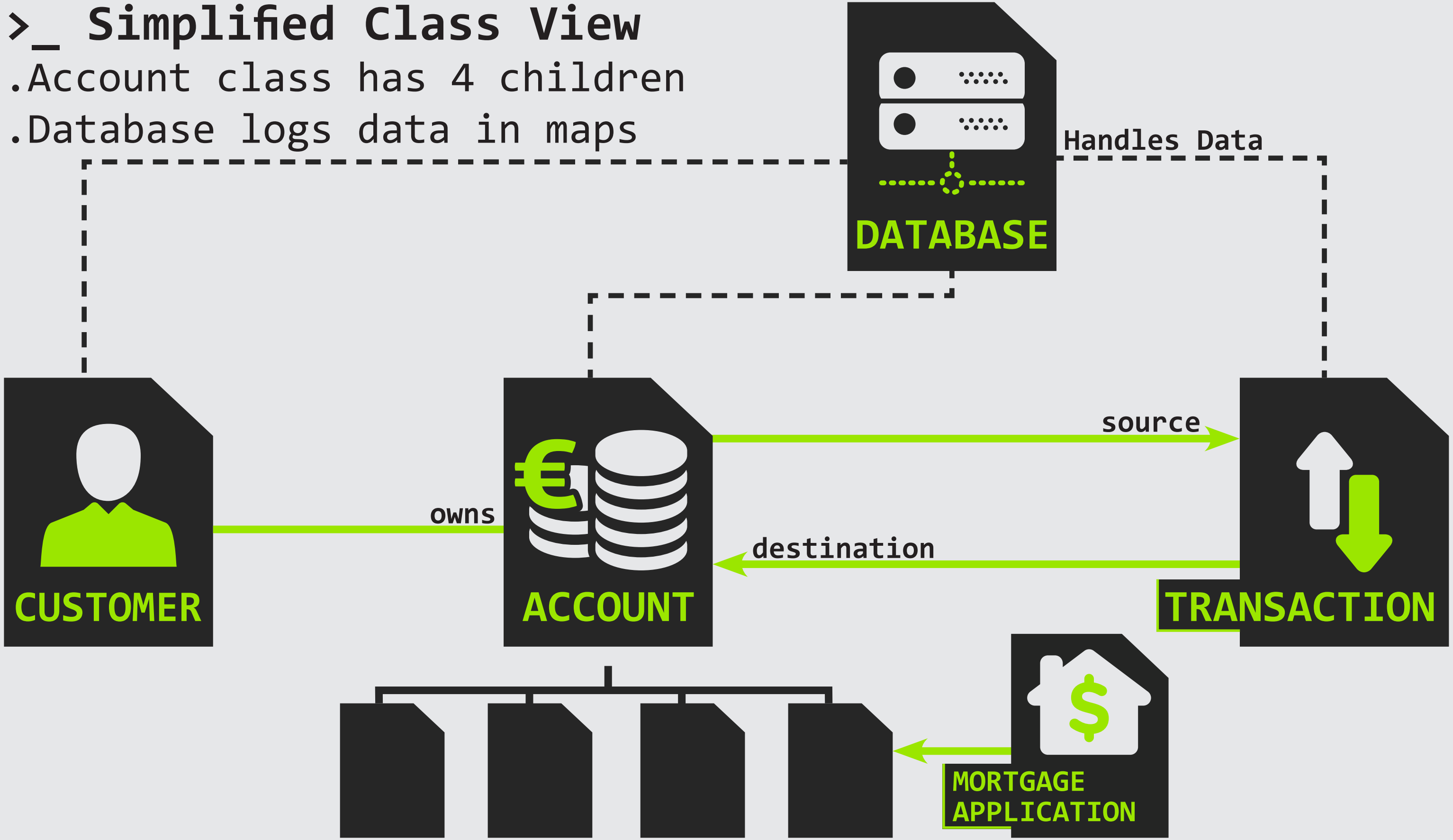
- amount : double
- newAccountType : string
- newCustomerId : integer
- yearlyPay : string

>cd ./Overview_

>_ Simplified Class View

.Account class has 4 children

.Database logs data in maps



>cd ./Class/Database_

>_ Constructor

.A database will be created as an "instance"

.Includes HashMaps for:

```
    ./account
    ./customer
    ./transaction
```

>_ Methods

.Every Map has several setters and getters

.Setters return the ID, which is used for the new object

>_ Outline

Ⓒ Database

- ▪accountList:*Map<...>*
- ▪customerList:*Map<...>*
- ▪transactionList:*Map<...>*
- •Database(...)
- •set*(...): *return*
- •get*(...): *return*

>cd ./Class/Customer_

>_ Constructor

.Has 8 Attributes to set

.Personal Details like name and address

.The Customer Object has an ArrayList with AccountIDs

>_ Methods

.Methods to show personal details on screen

.Updating and removing are also included

.Some getters and setters for other classes

>_ Outline

```
Ⓒ Customer
    ▪name:String
    ▪address:String
    ▪phone:String
    ▪sex:String
    ▪dob:String
    ▪accountList: List<Integer>
    ▪pin:String
    ▪customerId:int
    •Customer(…)
    •showPersonDetails(…):void
    •updatePersonDetails(…):void
    •removeCustomer(…):void
     …
```

>cd ./Class/Account_

>_ Constructor

.Construct mainly used for accountType

.Children inherits constructer

.Balance is initialized with 0

.Saves customerID and own ID

>_ Methods

.Methods for getting balance

.Add and subtract money

.Some getters and setters for other classes

>_ Outline

Ⓒ Account

```
▪balance:double
▪creditLimit:int
▪interestRate:double
▪accountType:String
▪customerID:int
•Account(...)
•closeAccount(...):void
•getBalance(...):double
•addMoney(...):void
•subtractMoney(...):void
•setInterestRate(...):void
•setCreditLimit(...):void
 ...
```

>cd ./Class/Account/Children_

>_ accountType

.Current
.CorporateSavings
.StudentSavings
.Mortgage
.JuniorCurrent

>_ Constructer (inherited)

.Sets interest rate
.Sets credit limit
.JuniorCurrent method: isAllowed

>_ Outline

- C Account
  - C Current
    - Current(...)
  - C CorporateSavings
    - CorporateSavings(...)
  - C StudentSavings
    - StudentSavings(...)
  - C Mortgage
    - Mortgage(...)
  - C JuniorCurrent
    - JuniorCurrent(...)
    - isAllowed(...)

>cd ./Class/MortgageApplication_

>_ Constructor

.MortgageApplication gets/sets

- ./costumerId
- ./accountType
- ./yearly payment

>_ Methods

.Interview method for user input

.MakeMortgage sets every value with mortgageCondition

>_ Outline

```
C MortgageApplication
    ▪amount:double
    ▪newAccountType:String
    ▪newCustomerId:int
    ▪yearlyPay:double
    •MortageApplication(...)
    •interview():void
    •mortgageCondition():void
    •makeMortgage():void
```

>cd ./Class/Transaction_

>_ Constructor

.Includes sender, receiver and amount

.Timestamp is created

>_ Methods

.Withdraw, deposit and transfer

.Accounts are selected within a method

.Every transaction is logged in the database

>_ Outline

Ⓒ Transaction

- ▪sender:*int*
- ▪receiver:*int*
- ▪amount:*double*
- ▪timeStamp:*String*
- •Transaction(...)
- •selectAccount(...):*int*
- •inputReceiver(...):*int*
- •inputAmount(...):*double*
- •showTransactionLog(...):*void*

```
>javac -g LiveDemo.java
```