package com.timbuchalka;

public class Main {

public static void main(String[] args) {

Bank bank = new Bank("National Australia Bank");

if (bank.addBranch("Adelaide")) {

System.out.println("Adelaide branch created");

}

bank.addCustomer("Adelaide", "Tim", 50.05D);

bank.addCustomer("Adelaide", "Mike", 175.34D);

bank.addCustomer("Adelaide", "Percy", 220.12D);

bank.addBranch("Sydney");

bank.addCustomer("Sydney", "Bob", 150.54D);

bank.addCustomerTransaction("Adelaide", "Tim", 44.22D);

bank.addCustomerTransaction("Adelaide", "Tim", 12.44D);

bank.addCustomerTransaction("Adelaide", "Mike", 1.65D);

bank.listCustomers("Adelaide", true);

bank.listCustomers("Sydney", true);

bank.addBranch("Melbourne");

if (!bank.addCustomer("Melbourne", "Brian", 5.53D)) {

System.out.println("Error Melbourne branch does not exist");

}

if (!bank.addBranch("Adelaide")) {

System.out.println("Adelaide branch already exists");

}

if (!bank.addCustomerTransaction("Adelaide", "Fergus", 52.33D)) {

System.out.println("Customer does not exist at branch");

}

if (!bank.addCustomer("Adelaide", "Tim", 12.21D)) {

System.out.println("Customer Tim already exists");

}

}

}

CUSTOMER CLASS:

import java.util.ArrayList;

public class Customer {

private String name;

private ArrayList<Double> transactions;

public Customer(String name, double initialAmount) {

this.name = name;

this.transactions = new ArrayList();

this.addTransaction(initialAmount);

}

public void addTransaction(double amount) {

this.transactions.add(amount);

}

public String getName() {

return this.name;

}

public ArrayList<Double> getTransactions() {

return this.transactions;

}

Package com.timbuchalka;

import java.util.ArrayList;

public class Branch {

private String name;

private ArrayList<Customer> customers;

public Branch(String name) {

this.name = name;

this.customers = new ArrayList();

}

public String getName() {

return this.name;

}

public ArrayList<Customer> getCustomers() {

return this.customers;

}

public boolean newCustomer(String customerName, double initialAmount) {

if (this.findCustomer(customerName) == null) {

this.customers.add(new Customer(customerName, initialAmount));

return true;

} else {

return false;

}

}

public boolean addCustomerTransaction(String customerName, double amount) {

Customer existingCustomer = this.findCustomer(customerName);

if (existingCustomer != null) {

existingCustomer.addTransaction(amount);

return true;

} else {

return false;

}

}

private Customer findCustomer(String customerName) {

for(int i = 0; i < this.customers.size(); ++i) {

Customer checkedCustomer = (Customer)this.customers.get(i);

if (checkedCustomer.getName().equals(customerName)) {

return checkedCustomer;

}

}

return null;

}

}

BANK CLASS

package com.timbuchalka;

import java.util.ArrayList;

public class Bank {

private String name;

private ArrayList<Branch> branches;

public Bank(String name) {

this.name = name;

this.branches = new ArrayList();

}

public boolean addBranch(String branchName) {

if (this.findBranch(branchName) == null) {

this.branches.add(new Branch(branchName));

return true;

} else {

return false;

}

}

public boolean addCustomer(String branchName, String customerName, double initialAmount) {

Branch branch = this.findBranch(branchName);

return branch != null ? branch.newCustomer(customerName, initialAmount) : false;

}

public boolean addCustomerTransaction(String branchName, String customerName, double amount) {

Branch branch = this.findBranch(branchName);

return branch != null ? branch.addCustomerTransaction(customerName, amount) : false;

}

private Branch findBranch(String branchName) {

for(int i = 0; i < this.branches.size(); ++i) {

Branch checkedBranch = (Branch)this.branches.get(i);

if (checkedBranch.getName().equals(branchName)) {

return checkedBranch;

}

}

return null;

}

public boolean listCustomers(String branchName, boolean showTransactions) {

Branch branch = this.findBranch(branchName);

if (branch == null) {

return false;

} else {

System.out.println("Customer details for branch " + branch.getName());

ArrayList<Customer> branchCustomers = branch.getCustomers();

for(int i = 0; i < branchCustomers.size(); ++i) {

Customer branchCustomer = (Customer)branchCustomers.get(i);

System.out.println("Customer: " + branchCustomer.getName() + "[" + (i + 1) + "]");

if (showTransactions) {

System.out.println("Transactions");

ArrayList<Double> transactions = branchCustomer.getTransactions();

for(int j = 0; j < transactions.size(); ++j) {

System.out.println("[" + (j + 1) + "] Amount " + transactions.get(j));

}

}

}

return true;

}

}

}