

Account.java

```
package lab4.src;
```

```
public class Account {
```

```
    private String account_holder;
```

```
    private int account_num;
```

```
    private double account_balance;
```

```
    public Account(String account_holder, int account_num, double balance){
```

```
        this.account_holder = account_holder;
```

```
        this.account_num = account_num;
```

```
        account_balance = balance;
```

```
    }
```

```
    public String getAccount_holder(){
```

```
        return this.account_holder;
```

```
    }
```

```
    public int getAccount_num(){
```

```
        return this.account_num;
```

```
    }
```

```
    public double getAccount_balance(){
```

```
        return this.account_balance;
```

```
    }
```

```
public boolean deposit(double amount){  
    if(amount<=0){  
        return false;  
    }  
    else{  
        this.account_balance+= amount;  
        return true;  
    }  
}
```

```
public boolean withdraw(double amount){  
    if(amount>0 && ((this.account_balance-amount)>=0)){  
        this.account_balance -= amount;  
        return true;  
    }  
    else{  
        return false;  
    }  
}
```

@Override

```
public String toString() { //DO NOT MODIFY  
    return "(" + getAccount_holder() + ", " + getAccount_num() + ", " +  
    String.format("%.2f", getAccount_balance()) + ")";  
}  
}
```

```

PS C:\Users\charm\OneDrive\Documents\GitHub\COE318\coe318\lab4> & 'C:\Users\charm\AppData\Local\Programs\Eclipse Adoptium\jdk-21.0.4.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\charm\AppData\Roaming\Code\User\workspaceStorage\5e2d4ee39d3e2069b51a499983248197\redhat.java\jdt_ws\jdt.ls-java-project\bin' 'lab4.src.MainAccount'
(Bob, 789, $0.00)
(Alice, 123, $100.00)
(Alice, 123, $85.00)
(Alice, 123, $85.00)
(Alice, 123, $85.00)
(Alice, 123, $35.00)
(Bob, 789, $300.00)
(Bob, 789, $200.00)
PS C:\Users\charm\OneDrive\Documents\GitHub\COE318\coe318\lab4>

```

Bank.java

```

/**
 *
 * @author Venujan Suthakaran
 */

package lab4.src;

public class Bank {
    private String name;

    /**
     * An array of Accounts managed by
     * this bank.
     */
    private Account [] accounts;
    private int numAccounts;//number of active accounts

    public Bank(String name, int maxNumberAccounts) {
        this.name = name;
    }
}

```

```
    accounts = new Account[maxNumberAccounts];  
    numAccounts = 0;  
}
```

```
/**  
 * @return the name  
 */  
public String getName() {  
    return this.name; //Fix this  
}
```

```
/**  
 * @return the numAccounts  
 */  
public int getNumAccounts() {  
    return this.numAccounts; //Fix this  
}
```

```
public Account[] getAccounts() {  
    return this.accounts; //Fix this  
}
```

```
/**  
 * Return true if the Bank already has an account  
 * with this number; otherwise false.  
 * @param accountNumber
```

```

* @return
*/

public boolean hasAccountNumber(int accountNumber) {
    for(Account account : this.accounts){
        if (account != null){
            if (account.getAccount_num()==accountNumber){
                return true;
            }
        }
    }
    return false; //Fix this
}

/**
 * Adds the specified account to the Bank if possible. If the account number
 * already exists or the Bank has reached its maximum
 * number of accounts, return false and do not add it; otherwise,
 * add it and return true.
 * @param account
 * @return true if successful
 */
public boolean add(Account account) {
    if(this.hasAccountNumber(account.getAccount_num())){
        return false;
    }else {

```

```

        for (int i = 0; i < this.accounts.length; i++) {
            if (this.accounts[i] == null) {
                this.accounts[i] = account;
                this.numAccounts++;
                break;
            }
        }
        return true;
    } //Fix this
}

```

@Override

```

public String toString() {
    //DO NOT MODIFY THIS CODE
    String s = getName() + ": " + getNumAccounts() +
        " of " + getAccounts().length +
        " accounts open";
    for(Account account : getAccounts()) {
        if (account == null) break;
        s += "\n " + account;
    }
    return s;
}
}

```

```
PS C:\Users\charm\OneDrive\Documents\GitHub\COE318\coe318\lab4> & 'C:\Users\charm\AppData\Local\Programs\Eclipse Adoptium\jdk-21.0.4.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\charm\AppData\Roaming\Code\User\workspaceStorage\5e2d4ee39d3e2069b51a499983248197\redhat.java\jdt_ws\jdt.ls-java-project\bin' 'lab4.src.MainBank'
Toronto Dominion: 0 of 3 accounts open
Toronto Dominion: 1 of 3 accounts open
    (Charles, 234, $200.00)
td has account # 456: true
Toronto Dominion: 2 of 3 accounts open
    (Charles, 234, $200.00)
    (Dora, 456, $300.00)
Bank of Montreal: 1 of 5 accounts open
    (Edward, 456, $400.00)
PS C:\Users\charm\OneDrive\Documents\GitHub\COE318\coe318\lab4>
```