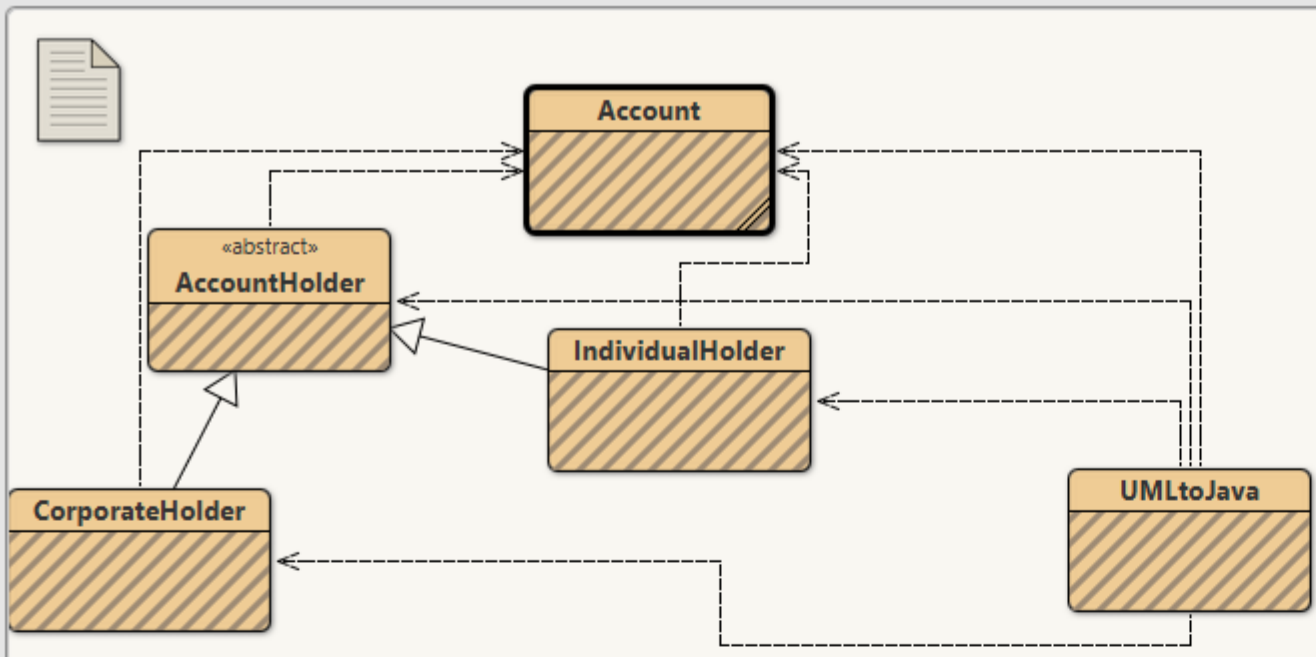
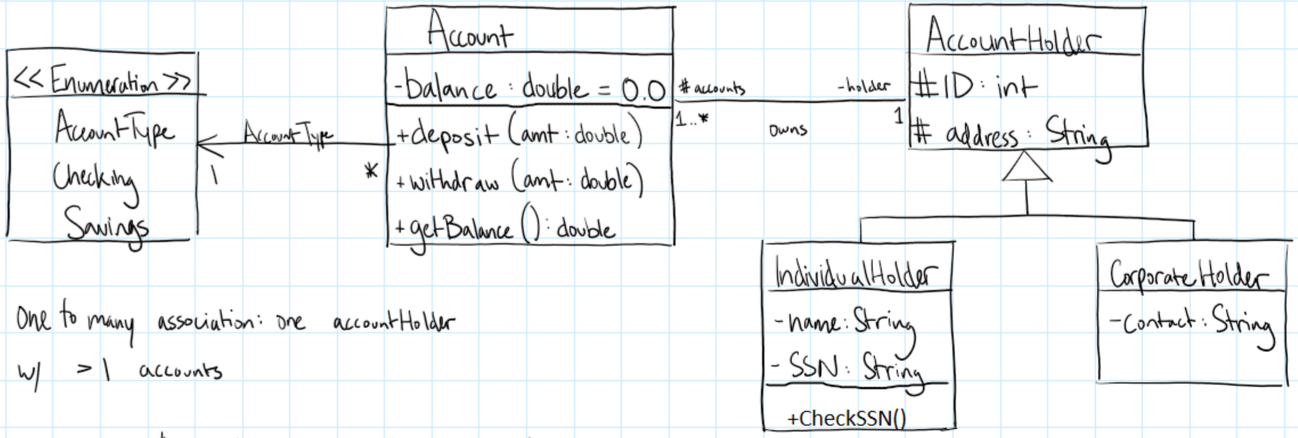
BlueJ: UML-to-Java

Project Edit Tools View Help

New Class...

Compile





One to many association: one accountHolder
w/ >1 accounts

Data type: "String" or similar (many such cases)

Inheritance: IndividualHolder being a subclass of Account Holder

Attributes of a class: "name" being private ("-")

Properties of a class: "name" in IndividualHolder

End point: name, reference, visibility, multiplicity, navigability

Dependency: "IndividualHolder" inherting from "Account Holder"

Enumeration: "Account Type"

Derived Attribute: "#ID" being derived from base class "Account Holder"

Changes made:

1. Added enumeration for "account type"
2. Added CheckSSN() method which informs the user if the IndividualHolder's SSN has been detected anywhere.

Additional Changes: Getters and Setters for each class. Not adding to the diagram for simplicity.

```
Windows PowerShell
Account Holder 11 has 1 accounts.
        Account 1 is type Checking with a balance $50000.00.

CorporateHolder 12 Contact: Contact Twelve.
Account Holder 12 has 1 accounts.
        Account 1 is type Checking with a balance $55000.00.

CorporateHolder 13 Contact: Contact Thirteen.
Account Holder 13 has 1 accounts.
        Account 1 is type Checking with a balance $60000.00.

CorporateHolder 14 Contact: Contact Fourteen.
Account Holder 14 has 1 accounts.
        Account 1 is type Checking with a balance $65000.00.

CorporateHolder 15 Contact: Jensen Huang.
Account Holder 15 has 2 accounts.
        Account 1 is type Checking with a balance $70000.00.
        Account 2 is type Savings with a balance $75000.00.

PS C:\Users\epicj\OneDrive\Desktop1\ECE-373\Assignment-2\UML-to-Java> javac UMLtoJava.java
PS C:\Users\epicj\OneDrive\Desktop1\ECE-373\Assignment-2\UML-to-Java> java UMLtoJava
Executing UMLtoJava.java:

IndividualHolder 6 Name: Individual Six.        IndividualHolder 6 SSN: 666-66-6666.
Account Holder 6 has 1 accounts.
        Account 1 is type Checking with a balance $25000.00.

IndividualHolder 7 Name: Individual Seven.      IndividualHolder 7 SSN: 777-77-7777.
Account Holder 7 has 1 accounts.
        Account 1 is type Checking with a balance $30000.00.

IndividualHolder 8 Name: Individual Eight.      IndividualHolder 8 SSN: 888-88-8888.
Account Holder 8 has 1 accounts.
        Account 1 is type Checking with a balance $35000.00.

IndividualHolder 9 Name: Indivdual Nine.        IndividualHolder 9 SSN: 999-99-9999.
Account Holder 9 has 1 accounts.
        Account 1 is type Checking with a balance $40000.00.

IndividualHolder 10 Name: Individual Ten.       IndividualHolder 10 SSN: 101-01-0101.
Account Holder 10 has 1 accounts.
        Account 1 is type Checking with a balance $45000.00.

CorporateHolder 11 Contact: Contact Eleven.
Account Holder 11 has 1 accounts.
        Account 1 is type Checking with a balance $50000.00.

CorporateHolder 12 Contact: Contact Twelve.
Account Holder 12 has 1 accounts.
        Account 1 is type Checking with a balance $55000.00.

CorporateHolder 13 Contact: Contact Thirteen.
Account Holder 13 has 1 accounts.
        Account 1 is type Checking with a balance $60000.00.

CorporateHolder 14 Contact: Contact Fourteen.
Account Holder 14 has 1 accounts.
        Account 1 is type Checking with a balance $65000.00.

CorporateHolder 15 Contact: Jensen Huang.
Account Holder 15 has 2 accounts.
        Account 1 is type Checking with a balance $70000.00.
        Account 2 is type Savings with a balance $75000.00.

At least one organization has your SSN.


UMLtoJava.java complete.
PS C:\Users\epicj\OneDrive\Desktop1\ECE-373\Assignment-2\UML-to-Java>
```

```
Account Holder 12 has 1 accounts.
        Account 1 is type Checking with a balance $55000.00.

CorporateHolder 13 Contact: Contact Thirteen.
Account Holder 13 has 1 accounts.
        Account 1 is type Checking with a balance $60000.00.

CorporateHolder 14 Contact: Contact Fourteen.
Account Holder 14 has 1 accounts.
        Account 1 is type Checking with a balance $65000.00.

CorporateHolder 15 Contact: Jensen Huang.
Account Holder 15 has 2 accounts.
        Account 1 is type Checking with a balance $70000.00.
        Account 2 is type Savings with a balance $75000.00.

At least one organization has your SSN.


UMLtoJava.java complete.
PS C:\Users\epicj\OneDrive\Desktop1\ECE-373\Assignment-2\UML-to-Java> javac UMLtoJava.java
PS C:\Users\epicj\OneDrive\Desktop1\ECE-373\Assignment-2\UML-to-Java> java UMLtoJava
Executing UMLtoJava.java:

IndividualHolder 6 Name: Individual Six.        IndividualHolder 6 SSN: 666-66-6666.
Account Holder 6 has 1 accounts.
        Account 1 is type Checking with a balance $25000.00.

IndividualHolder 7 Name: Individual Seven.      IndividualHolder 7 SSN: 777-77-7777.
Account Holder 7 has 1 accounts.
        Account 1 is type Checking with a balance $30000.00.

IndividualHolder 8 Name: Individual Eight.      IndividualHolder 8 SSN: 888-88-8888.
Account Holder 8 has 1 accounts.
        Account 1 is type Checking with a balance $35000.00.

IndividualHolder 9 Name: Indivdual Nine.        IndividualHolder 9 SSN: 999-99-9999.
Account Holder 9 has 1 accounts.
        Account 1 is type Checking with a balance $40000.00.

IndividualHolder 10 Name: Individual Ten.       IndividualHolder 10 SSN: 101-01-0101.
Account Holder 10 has 1 accounts.
        Account 1 is type Checking with a balance $45000.00.

CorporateHolder 11 Contact: Contact Eleven.
Account Holder 11 has 1 accounts.
        Account 1 is type Checking with a balance $50000.00.

CorporateHolder 12 Contact: Contact Twelve.
Account Holder 12 has 1 accounts.
        Account 1 is type Checking with a balance $55000.00.

CorporateHolder 13 Contact: Contact Thirteen.
Account Holder 13 has 1 accounts.
        Account 1 is type Checking with a balance $60000.00.

CorporateHolder 14 Contact: Contact Fourteen.
Account Holder 14 has 1 accounts.
        Account 1 is type Checking with a balance $65000.00.

CorporateHolder 15 Contact: Jensen Huang.
Account Holder 15 has 2 accounts.
        Account 1 is type Checking with a balance $70000.00.
        Account 2 is type Savings with a balance $75000.00.

At least one organization has your SSN.


UMLtoJava.java complete.
PS C:\Users\epicj\OneDrive\Desktop1\ECE-373\Assignment-2\UML-to-Java>
```

```java
/**
Main class for Assignment 2. 5 instances of each type of class.
 */
public class UMLtoJava {

    public static void main (String[] args)
    {
        Account [] Accounts = new Account[16];

        for(int i = 0 ; i < 16 ; i++) {
            Accounts[i] = new Account();
            Accounts[i].deposit(5000 * i);
        }

        Accounts[15].setAccountType("Savings");

        // Superclasses
        AccountHolder one = new AccountHolder(1, "House One", Accounts[0]) {};
        AccountHolder two = new AccountHolder(2, "House Two", Accounts[1]) {};
        AccountHolder three = new AccountHolder(3, "House Three", Accounts[2]) {};
        AccountHolder four = new AccountHolder(4, "House Four", Accounts[3]) {};
        AccountHolder five = new AccountHolder(5, "House Five", Accounts[4]) {};

        // IndividualHolder subclasses
        IndividualHolder six = new IndividualHolder(6, "Penthouse Six", Accounts[5], "Individual Six", "666-66-6666");
        IndividualHolder seven = new IndividualHolder(7, "House Seven", Accounts[6], "Individual Seven", "777-77-7777");
        IndividualHolder eight = new IndividualHolder(8, "House Eight", Accounts[7], "Individual Eight", "888-88-8888");
        IndividualHolder nine = new IndividualHolder(9, "House Nine", Accounts[8], "Indivdual Nine", "999-99-9999");
        IndividualHolder ten = new IndividualHolder(10, "House Ten", Accounts[9], "Individual Ten", "101-01-0101");

        // CorporateHolder subclasses
        CorporateHolder eleven = new CorporateHolder(11, "House Eleven", Accounts[10],"Contact Eleven");
        CorporateHolder twelve = new CorporateHolder(12, "House Twelve",  Accounts[11],"Contact Twelve");
        CorporateHolder thirteen = new CorporateHolder(13, "House Thirteen", Accounts[12], "Contact Thirteen");
        CorporateHolder fourteen = new CorporateHolder(14, "House Fourteen", Accounts[13], "Contact Fourteen");
        CorporateHolder fifteen = new CorporateHolder(15, "2788 San Tomas Express Way, Santa Clara, CA 95051", Accounts[14], "Jensen H

        fifteen.addAccount(Accounts[15]);

        System.out.printf("Executing UMLtoJava.java:\n\n");

        LazyIndividual(6, six);
        LazyIndividual(7, seven);
        LazyIndividual(8, eight);
        LazyIndividual(9, nine);
        LazyIndividual(10, ten);
        LazyCEO(11, eleven);
        LazyCEO(12, twelve);
        LazyCEO(13, thirteen);
        LazyCEO(14, fourteen);
        LazyCEO(15, fifteen);

        ten.checkSSN();

        System.out.printf("\n\nUMLtoJava.java complete.");
    }

    public static void LazySuper(int num, AccountHolder dummy) {
        System.out.printf("Account Holder %d has %d accounts.\n", num, dummy.getNumAccounts());

        for (int i = 1 ; i < dummy.getNumAccounts() + 1; i++) {
            System.out.printf("\tAccount %d is type %s with a balance $%.2f.\n", i, dummy.getAccountTypeOf(i), dummy.getBalanceOf(i));
        }
        System.out.printf("\n");
    }

    public static void LazySuper(int num, AccountHolder dummy) {
        System.out.printf("Account Holder %d has %d accounts.\n", num, dummy.getNumAccounts());

        for (int i = 1 ; i < dummy.getNumAccounts() + 1; i++) {
            System.out.printf("\tAccount %d is type %s with a balance $%.2f.\n", i, dummy.getAccountTypeOf(i), dummy.getBalanceOf(i));
        }
        System.out.printf("\n");
    }

    public static void LazyIndividual(int num, IndividualHolder dummy) {
        System.out.printf("IndividualHolder %d Name: %s.", num, dummy.getName());
        System.out.printf("\tIndividualHolder %d SSN: %s.\n", num, dummy.getSSN());
        LazySuper(num, dummy);
    }

    public static void LazyCEO(int num, CorporateHolder dummy) {
        System.out.printf("CorporateHolder %d Contact: %s.\n", num, dummy.getContact());
        LazySuper(num, dummy);
    }
}

```

1. One to many association: Line 38. Holder 15 has two accounts.

2. Data Type: My for loop iterator "i" is an integer, which is a primitive data type. My enumeration for "AccountType" is a user-defined data type.

3. Inheritance: IndividualHolder and CorporateHolder inherit from abstract class AccountHolder.

4. AccountHolder has private balance and account types, which is why I have to access them using methods.

5. AccountHolder has "balance" and "account type" properties (enumeration), which is why I have to access them using methods.

6. Line 60 has me using "GetAccountTypeOf" to find out if the accounts owned by a particular AccountHolder are "Checking" or "Savings." Not sure what else an end point could be in this context.

7. IndividualHolder and CorporateHolder both inherit from the AccountHolder class, which is an example of a dependency as well.

8. "AccountType" in the "Account" class is enumerated. In order to parse things easier, I had the "GetAccountType" method return a string ("Checking" for Checking and "Savings" for Savings).

9. The "CheckSSN" method is derived from the SSN. Since this program stores that SSN, at least one organization technically does have the SSN, so it warns the user.

10. Line 2 has a comment that explains why there are so many new instances of classes.