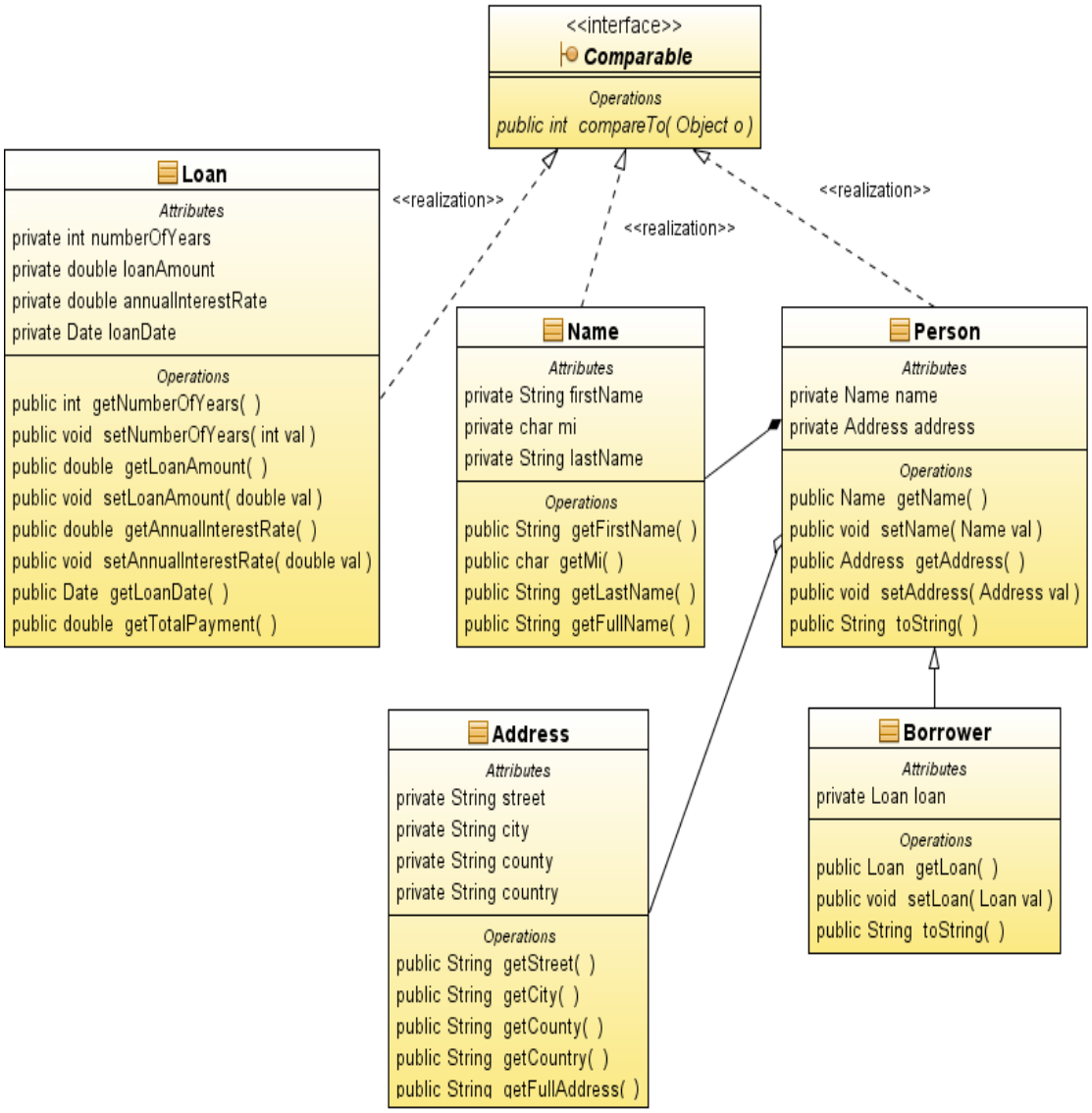
Using the following UML class diagram as a guide, implement the following class hierarchy in Netbeans (generate the constructors and getters/setters to expedite the process and help eliminate errors).



Notes

For the **Loan** class:

Add a default constructor that initialises an annualInterestRate to 7.5, numberOfYears to 30 and a loanAmount to 100000.

When initialising a *loanDate* just initialise it to a new date object. For example:

```
loanDate = new java.util.Date();
```

The code for the *getMonthlyPayment* method is as follows:

```
1  public double getMonthlyPayment() {
2        double monthlyInterestRate = annualInterestRate / 1200;
3        return loanAmount * monthlyInterestRate / (1 -
4        Math.pow(1 / (1 + monthlyInterestRate), numberOfYears * 12)));
5  }
```

The code for the *getTotalPayment* method is as follows:

```
1  public double getTotalPayment() {
2      return getMonthlyPayment() * numberOfYears * 12;
3  }
```

The *compareTo* method for the *Loan* class should evaluate if two *Loan* objects have the same *loanAmount.* It should return 0 if both objects have the same *loanAmount,* return -1 if the first object has a larger *loanAmount* than the second and return 1 if the second object has larger *loanAmount* than the first.

For the **Name** class:

Add a default constructor that initialises a *firstName* to “Greg”, a *mi* to ‘B’ and a *lastName* to “Halford”.

The *compareTo* method for the Name class should evaluate if two name objects have the same name (i.e. *firstName,mi and lastName).* It should return 0 if both objects have the same *name and* return -1 if both objects do not have the same name.

For the **Person** class:

Add a default constructor that creates a Name object (*firstName* = “Liam”, *mi* = ‘D’, *lastName* = “Frawley”) along with an Address object (*street* = “101 High St.”, city=*”*Limerick”, *county*=”Limerick”, *country*= “Ireland”).

The *toString* method for this class should return a Person’s full name (*firstName*, *mi* and *lastName*) along with their full address (*street*, *city*, *county* and *country*).

The *compareTo* method for the *Person* class should call the *compareTo* method in the Name class.

For the **Address** class:

Add a default constructor that initialises a *street* to “123 Fake St”, *city* to “Limerick”, *county* to “Limerick” and *country* to “Ireland”.

The *getFullAddress* method should return the *street*, *city*, *county* and *country* as a single *String*.

For the **Borrower** class:

Add a default constructor. This constructor should call the default constructor in the super class (*Person*).

The *toString* method for this class calls the *toString* method in the superclass and also returns the monthly and total payment for a loan.

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1. Create a **main class** and within this class:
   1.1. Create a *name* object (call it n1) with these details: *firstName* = " Patrick", *mi* = 'N', *lastName* = "Considine".
   1.2. Create an address object (call it a1) with these details: *street* = "54 Seaview Terrace", *city* ="Adare", *county* ="Limerick", *country* = "Ireland".
   1.3. Create a loan object (call it l1) with these details: *annualInterestRate* = 3.6, *numberOfYears* = 33, *loanAmount* = 350000.
   1.4. Create a borrower object (call it b1) with n1 and a1 as the name and address. Also set l1 as the loan for this object.

   1.5. Create a name object (n2), an address object (a2) and a loan object (l2) all using their default constructors.
   1.6. Create a borrower object (call it b2) with n2 and a2 as the name and address. Also set l2 as the loan for this object.

   1.7. Create a loan object (call it l3) using the default constructor.
   1.8. Create a borrower object (call it b3). Set l3 as the loan for this object.

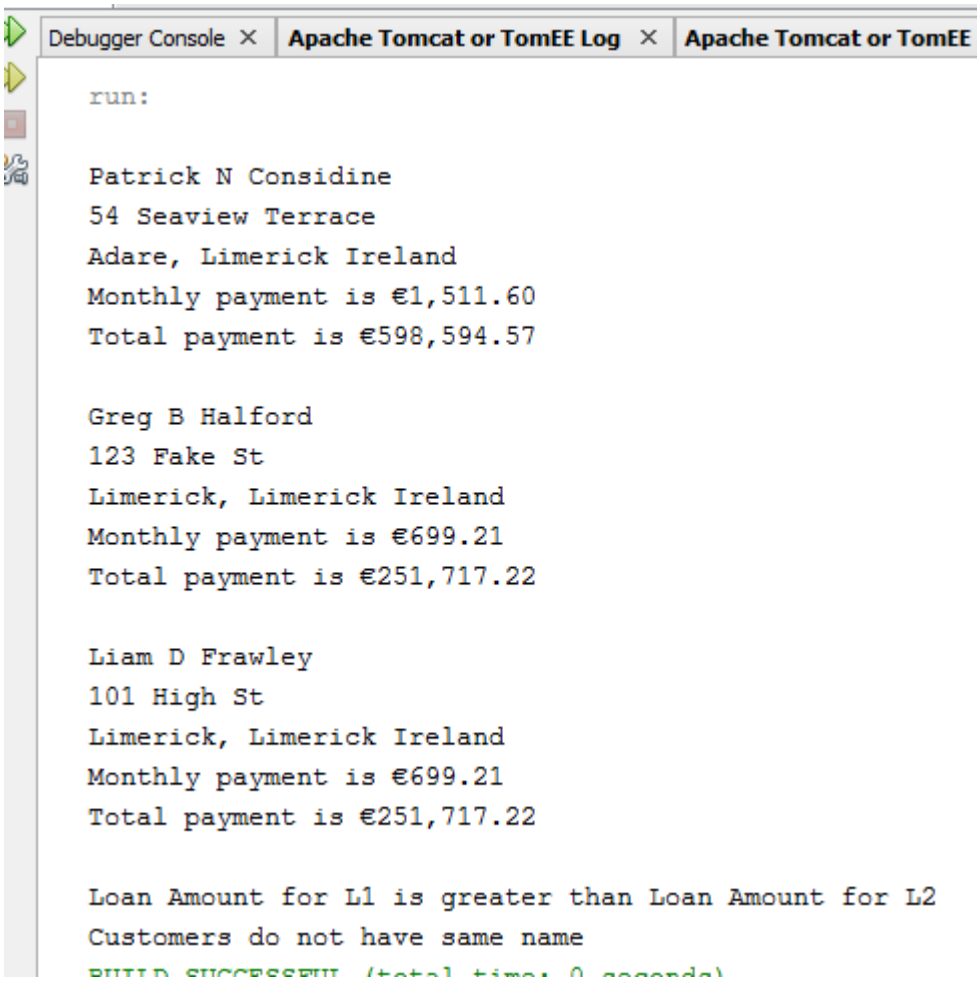
   1.9. Call toString on the three borrower objects (and print the return value to the screen).

   1.10. Compare l1 with l2.

      If l1 is greater than l2 print "Loan Amount for L1 is greater than Loan Amount for L2.
      If l2 is greater than l1 print "Loan Amount for L2 is greater than Loan Amount for L1.
      If both loans are equal print "Both L1 and L2 are equal".

   1.11. Compare n1 with n2.
      If both names are the same print "Customers have the same name".
      If both names are not the same print "Customers do not have same name".

Assuming that you have taken the appropriate steps, your output should be similar to mine (PTO).


Debugger Console
Apache Tomcat or TomEE Log
Apache Tomcat or TomEE
run:
Patrick N Considine
54 Seaview Terrace
Adare, Limerick Ireland
Monthly payment is €1,511.60
Total payment is €598,594.57
Greg B Halford
123 Fake St
Limerick, Limerick Ireland
Monthly payment is €699.21
Total payment is €251,717.22
Liam D Frawley
101 High St
Limerick, Limerick Ireland
Monthly payment is €699.21
Total payment is €251,717.22
Loan Amount for L1 is greater than Loan Amount for L2
Customers do not have same name