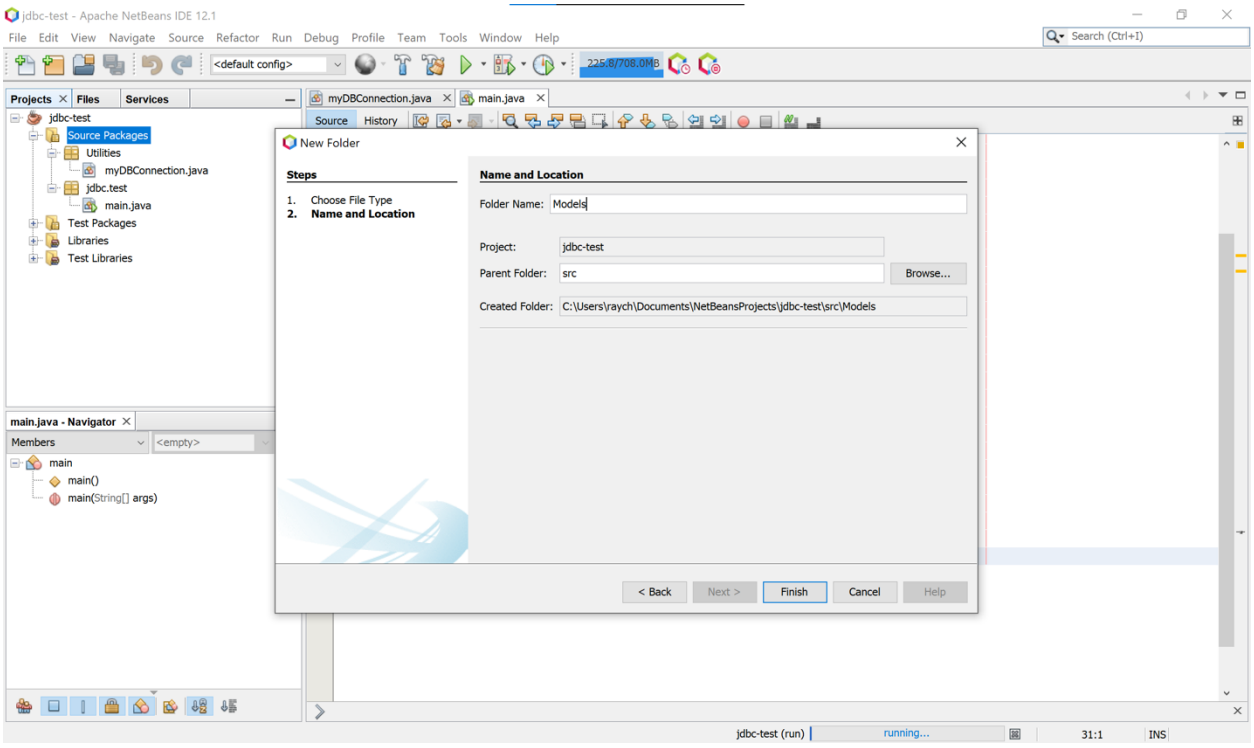
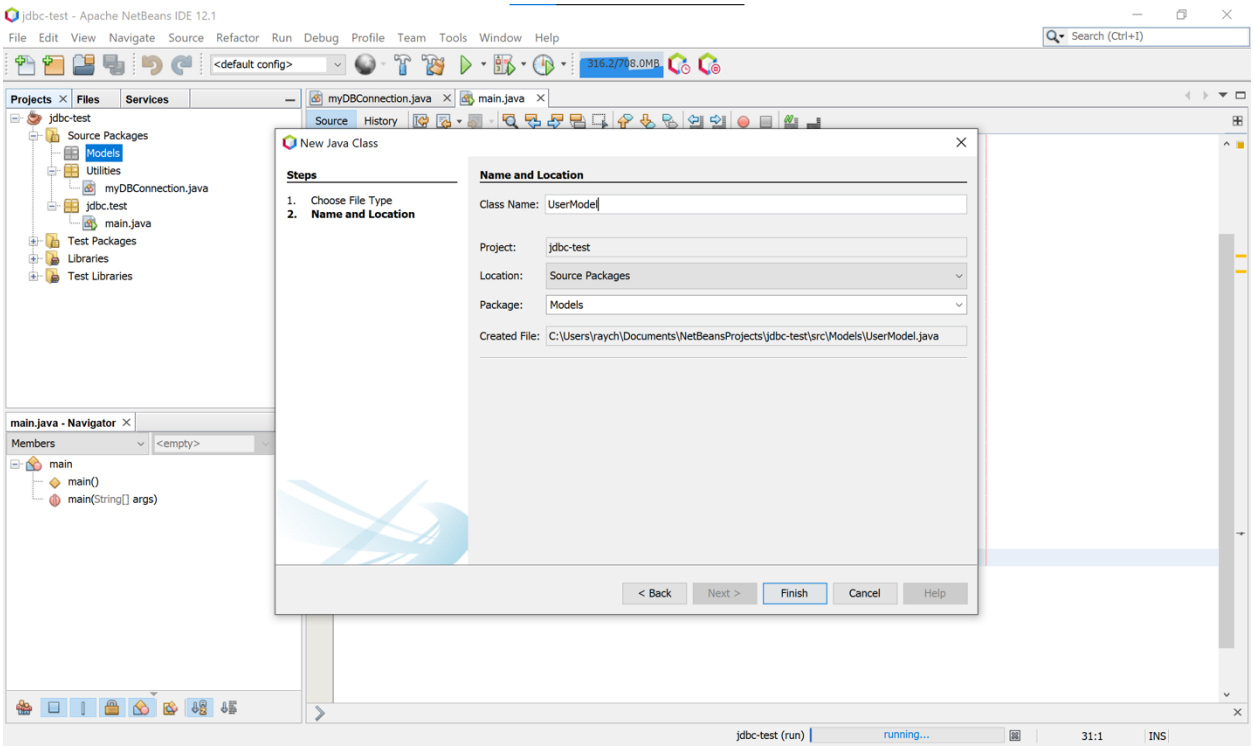
CRUD Operations

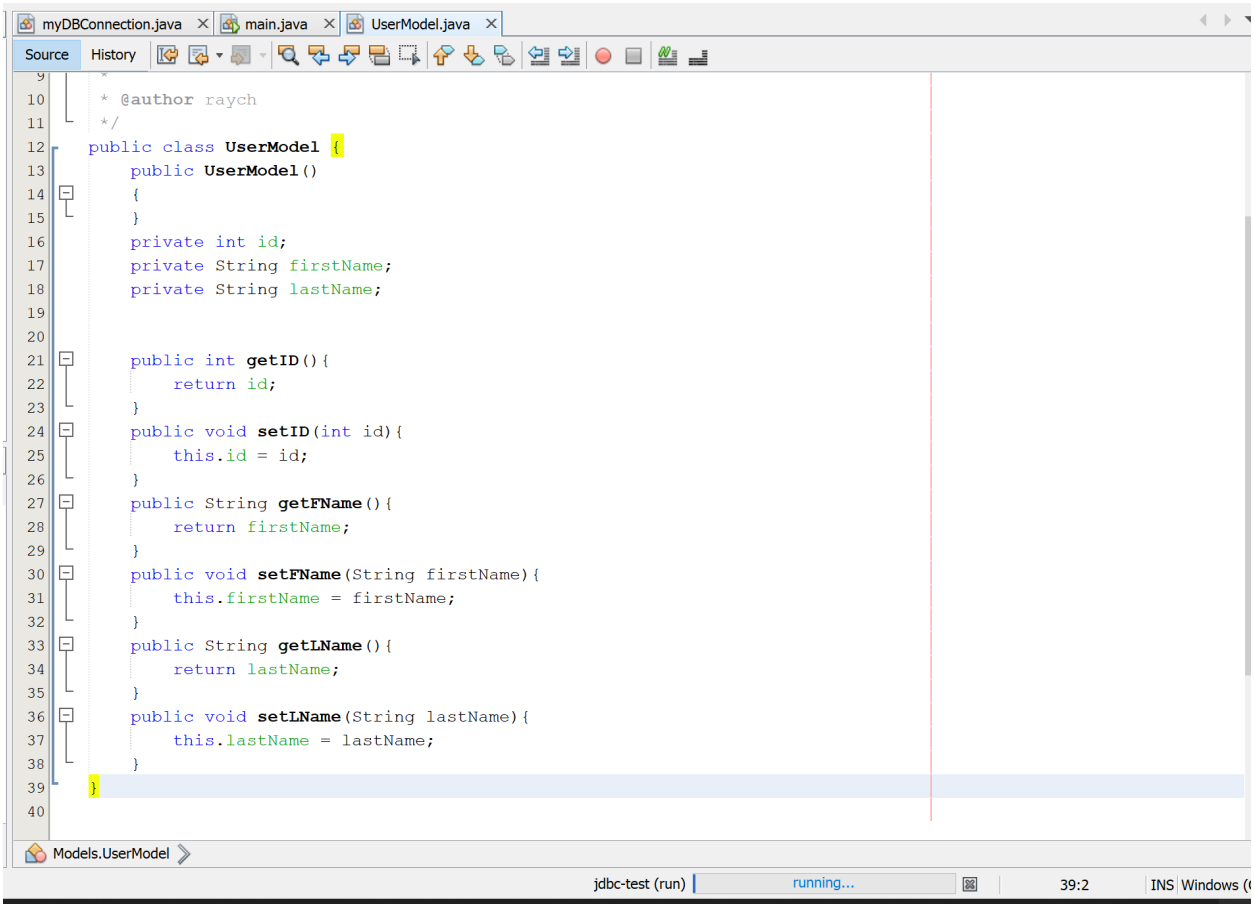
1. Create a folder for *Models*.



2. Add *UserModel* class.



3. Add these lines of code in the *UserModel* class.



4. Add these lines of code in your main class.

```
public static void main(String[] args) {
    // TODO code application logic here
    ArrayList<UserModel> users = new ArrayList<UserModel>();
    Scanner input = new Scanner(System.in);

    //Create instance of db class
    myDBConnection db = new myDBConnection();
```

5. Add the following imports in your *myDBConnection* class.

```
package Utilities;

import Models.UserModel;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.PreparedStatement;
import java.sql.Statement;
import java.util.ArrayList;
```

6. Add this *insertToDB()* method in *myDBConnection* class.

```
public void insertToDB(String fName, String lName){
    try
    {
        // the mysql insert statement
        String query = "insert into user (firstName, lastName) values (?, ?)";

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = myConnection.prepareStatement(query);
        preparedStmt.setString (1, fName);
        preparedStmt.setString (2, lName);

        // execute the preparedstatement
        preparedStmt.execute();

        close(preparedStmt);
        System.out.println("Successfully inserted to database");
    }
    catch (Exception e)
    {
        System.err.println("Got an exception!");
        System.err.println(e.getMessage());
    }
}
```

7. Then add this lines of code in your main class.

```
//insert data to db
System.out.println("First Name: ");
String fName = input.nextLine();
System.out.println("Last Name: ");
String lName = input.nextLine();
db.insertToDB(fName, lName);
```

8. Add this *retrieveAllFromDB()* method in *myDBConnection* class.

```
public ArrayList<UserModel> retrieveAllFromDB(){
    ArrayList<UserModel> users = new ArrayList<UserModel>();
    try
    {
        // the mysql select statement
        String query = "SELECT * FROM `user`";

        // create the mysql select Statement
        Statement  stmt = myConnection.createStatement();

        // execute the stmt
        ResultSet rs = stmt.executeQuery(query);

        // iterate through the java resultset
        while (rs.next())
        {
            UserModel user = new UserModel();
            user.setID(rs.getInt("id"));
            user.setFName(rs.getString("firstName"));
            user.setLName(rs.getString("lastName"));
            users.add(user);
        }

        close(stmt);
        System.out.println("Successfully selected all from database");
    }
    catch (Exception e)
    {
        System.err.println("Got an exception!");
        System.err.println(e.getMessage());
    }

    return users;
}
```

9. Then add these lines of code in main class.

```
//retrieve data from db
users = db.retrieveAllFromDB();
System.out.println("Users:");
for (UserModel user : users)
{
    System.out.println(user.getID() + " : " + user.getLName() + ", " + user.getFName());
}
```

10. Add this *updateDB()* method in *myDBConnection* class.

```
public void updateDB(int id, String fName, String lName){
    try
    {
        // the mysql update statement
        String query = "update user set firstName=?, lastName=? where id=? ";

        // create the mysql update preparedstatement
        PreparedStatement preparedStmt = myConnection.prepareStatement(query);
        preparedStmt.setString (1, fName);
        preparedStmt.setString (2, lName);
        preparedStmt.setInt (3, id);

        // execute the preparedstatement
        preparedStmt.execute();

        close(preparedStmt);
        System.out.println("Successfully updated data in database");
    }
    catch (Exception e)
    {
        System.err.println("Got an exception!");
        System.err.println(e.getMessage());
    }
}
```

11. Add these lines of code in main class.

```
//update data from db
System.out.println("ID of user to update: ");
int id = Integer.parseInt(input.nextLine());
System.out.println("Updated First Name: ");
String updatedFName = input.nextLine();
System.out.println("Updated Last Name: ");
String updatedlName = input.nextLine();
db.updateDB(id, updatedFName, updatedlName);
```

12. Add this *deleteFromFB()* method in *myDBConnection* class.

```
public void deleteFromDB(int id){
    try
    {
        // the mysql delete statement
        String query = "delete from user where id=? ";

        // create the mysql delete preparedstatement
        PreparedStatement preparedStmt = myConnection.prepareStatement(query);
        preparedStmt.setInt (1, id);

        // execute the preparedstatement
        preparedStmt.execute();

        close(preparedStmt);
        System.out.println("Successfully deleted a data in database");
    }
    catch (Exception e)
    {
        System.err.println("Got an exception!");
        System.err.println(e.getMessage());
    }
}
```

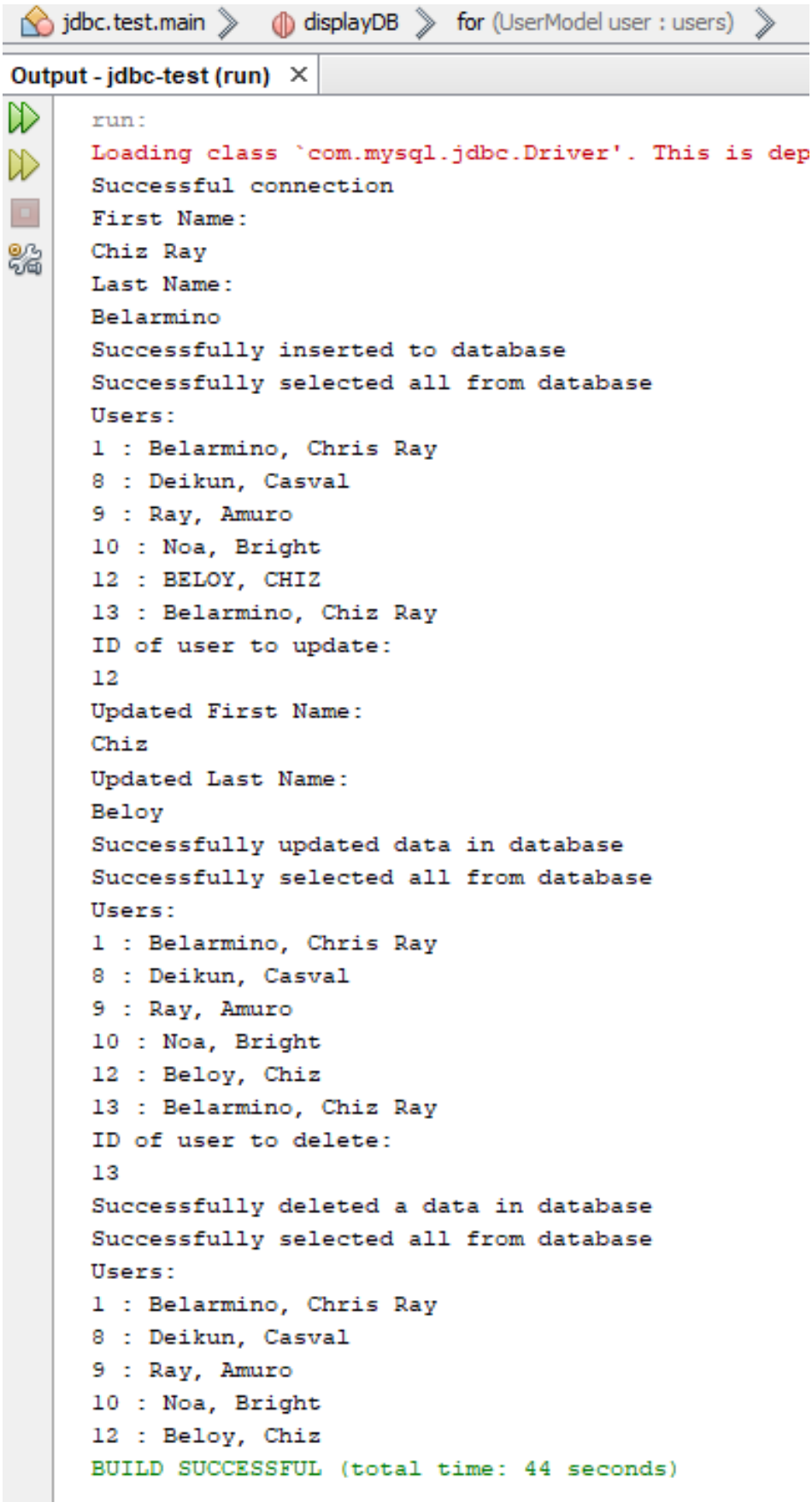
13. Then add these lines of code in main class.

```
//delete data from db
System.out.println("ID of user to delete: ");
int idToDelete = Integer.parseInt(input.nextLine());
db.deleteFromDB(idToDelete);
```

14. By the way here is how your main class should look:

```
public static void main(String[] args) {
    // TODO code application logic here
    ArrayList<UserModel> users = new ArrayList<UserModel>();
    Scanner input = new Scanner(System.in);

    //Create instance of db class
    myDBConnection db = new myDBConnection();
    //initialize db connection
    db.init();
    db.getMyConnection();

    //insert data to db
    System.out.println("First Name: ");
    String fName = input.nextLine();
    System.out.println("Last Name: ");
    String lName = input.nextLine();
    db.insertToDB(fName, lName);

    //display
    displayDB(users, db);

    //update data from db
    System.out.println("ID of user to update: ");
    int id = Integer.parseInt(input.nextLine());
    System.out.println("Updated First Name: ");
    String updatedFName = input.nextLine();
    System.out.println("Updated Last Name: ");
    String updatedlName = input.nextLine();
    db.updateDB(id, updatedFName, updatedlName);

    //display
    displayDB(users, db);

    //delete data from db
    System.out.println("ID of user to delete: ");
    int idToDelete = Integer.parseInt(input.nextLine());
    db.deleteFromDB(idToDelete);

    //display
    displayDB(users, db);
}

public static void displayDB(ArrayList<UserModel> users, myDBConnection db){
    //retrieve data from db
    users = db.retrieveAllFromDB();
    System.out.println("Users:");
    for (UserModel user : users)
    {
        System.out.println(user.getID() + " : " + user.getLName() + ", " + user.getFName());
    }
}
```

15. If everything is properly done, here is how it should look after running the project:


jdbc.test.main
displayDB
for (UserModel user : users)
Output - jdbc-test (run)
run:
Loading class `com.mysql.jdbc.Driver'. This is dep
Successful connection
First Name:
Chiz Ray
Last Name:
Belarmino
Successfully inserted to database
Successfully selected all from database
Users:
1 : Belarmino, Chris Ray
8 : Deikun, Casval
9 : Ray, Amuro
10 : Noa, Bright
12 : BELOY, CHIZ
13 : Belarmino, Chiz Ray
ID of user to update:
12
Updated First Name:
Chiz
Updated Last Name:
Beloy
Successfully updated data in database
Successfully selected all from database
Users:
1 : Belarmino, Chris Ray
8 : Deikun, Casval
9 : Ray, Amuro
10 : Noa, Bright
12 : Beloy, Chiz
13 : Belarmino, Chiz Ray
ID of user to delete:
13
Successfully deleted a data in database
Successfully selected all from database
Users:
1 : Belarmino, Chris Ray
8 : Deikun, Casval
9 : Ray, Amuro
10 : Noa, Bright
12 : Beloy, Chiz
BUILD SUCCESSFUL (total time: 44 seconds)