

EECS 3421

SQL Integration in Java

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Setting Up

Setting up Database:

- 1) To create the DataBase issue the following command in terminal:
`% db2 -tvf yrb-create`
- 2) To drop the DataBase issue the following command in terminal:
`% db2 -tvf yrb-drop`
- 3) To source to the DataBase issue the following command in terminal:
`% source ~db2leduc/cshrc.runtime`

Setting up the Application:

- 1) To Compile the Java file issue the following command in terminal:
`% javac cusTotal.java`
- 2) To Run the Java program issue the following command in terminal:
`% java cusTotal`

ptl03:/eecs/home/koko96/Desktop/3421/A2



File Edit View Search Terminal Help

```
ptl03 313 % db2 -tvf yrb-create
```

```
ptl03:/eecs/home/koko96/Desktop/3421/A2 x
File Edit View Search Terminal Help
ptl03 313 % db2 -tvf yrb-drop
```

```
ptl03:/eecs/home/koko96/Desktop/3421/A2 x
File Edit View Search Terminal Help
ptl03 306 % source ~db2leduc/cshrc.runtime
ptl03 307 % javac cusTotal.java
ptl03 308 % java cusTotal
```


User Manual

This program auto commits, meaning any change done to the database is committed immediately and it cannot be rolled back.

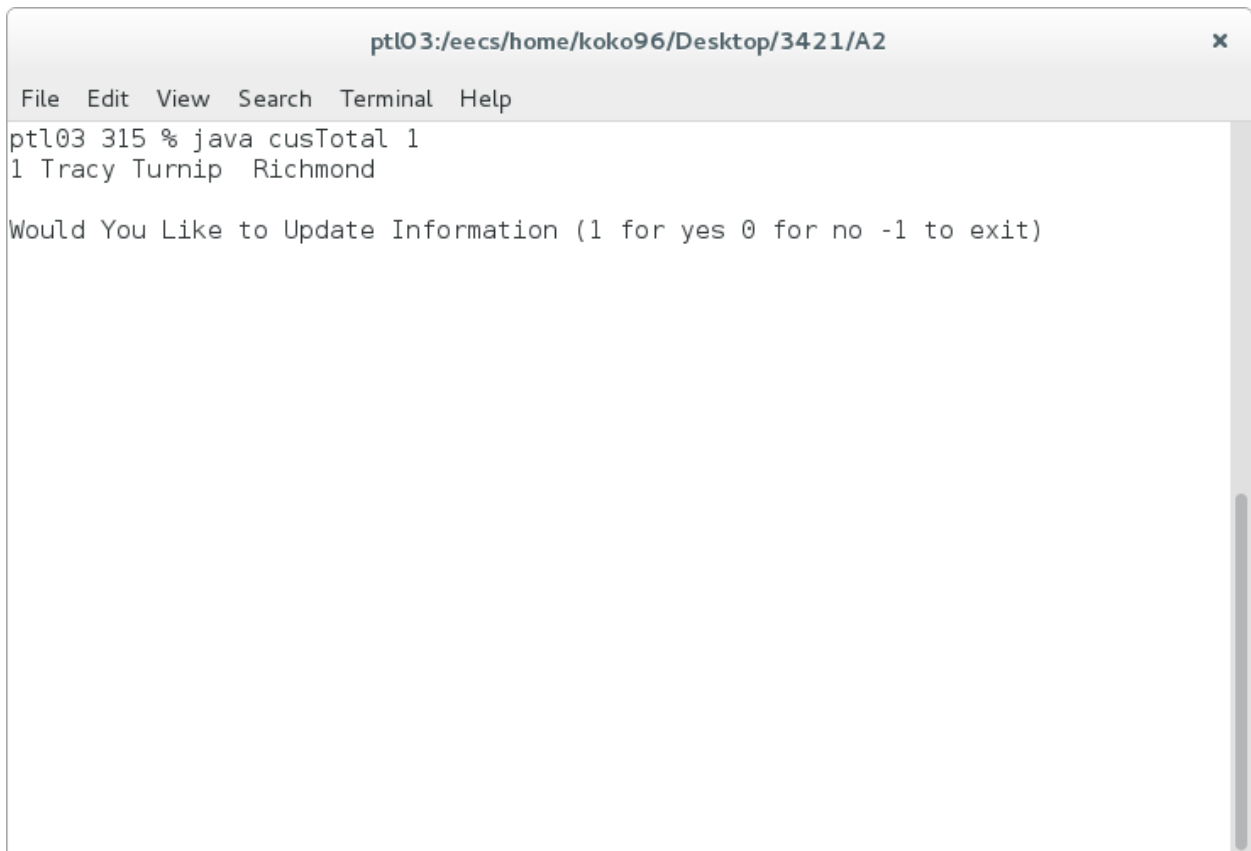
This program assumes that the user can read English

Start:

You can enter the customer id two ways:

- 1) By running The command
`% java cusTotal 1`

Note: 1 is just an example it could be any valid customer id number

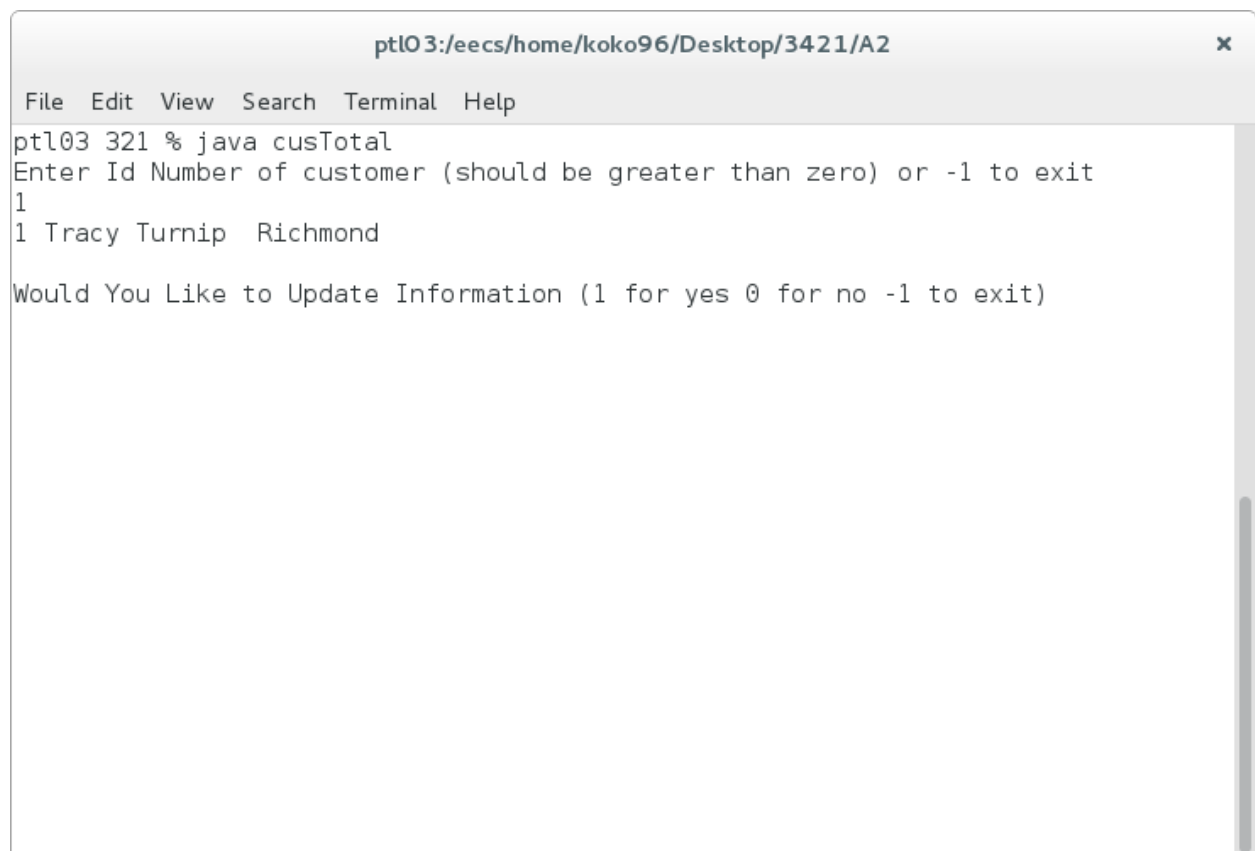


```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
ptl03 315 % java cusTotal 1
1 Tracy Turnip Richmond
Would You Like to Update Information (1 for yes 0 for no -1 to exit)
```

2) By running The command without integer

```
% java cusTotal
```

The program will ask to enter the correct customer id or if you wish to quit the enter -1



```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
ptl03 321 % java cusTotal
Enter Id Number of customer (should be greater than zero) or -1 to exit
1
1 Tracy Turnip Richmond
Would You Like to Update Information (1 for yes 0 for no -1 to exit)
```

ptl03:/eecs/home/koko96/Desktop/3421/A2



File Edit View Search Terminal Help

ptl03 323 % java cusTotal

Enter Id Number of customer (should be greater than zero) or -1 to exit

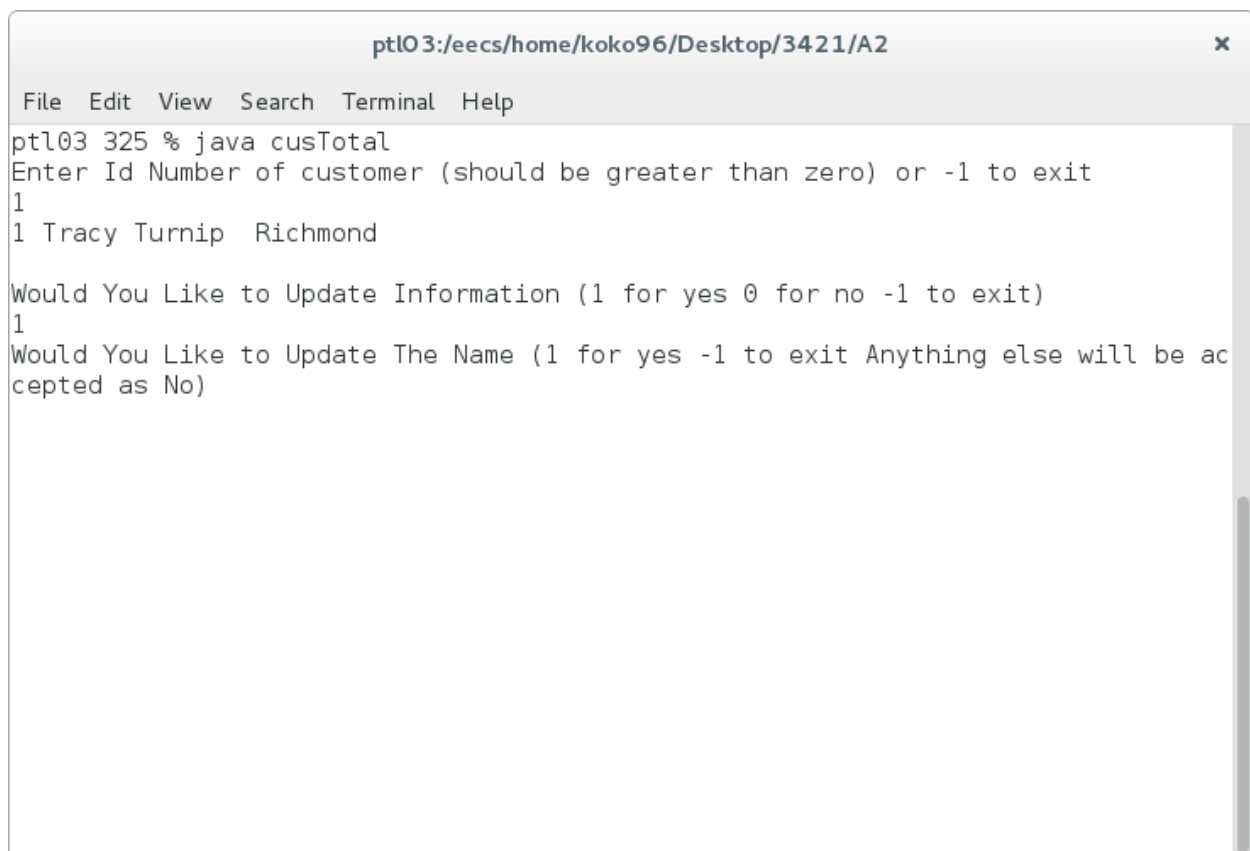
-1

ptl03 324 %

Update The customer Information:

After entering the correct customer Id the program will ask The customer to update Name or City and if the user wants to update Name or the City the user should enter 1 otherwise the input should be 0

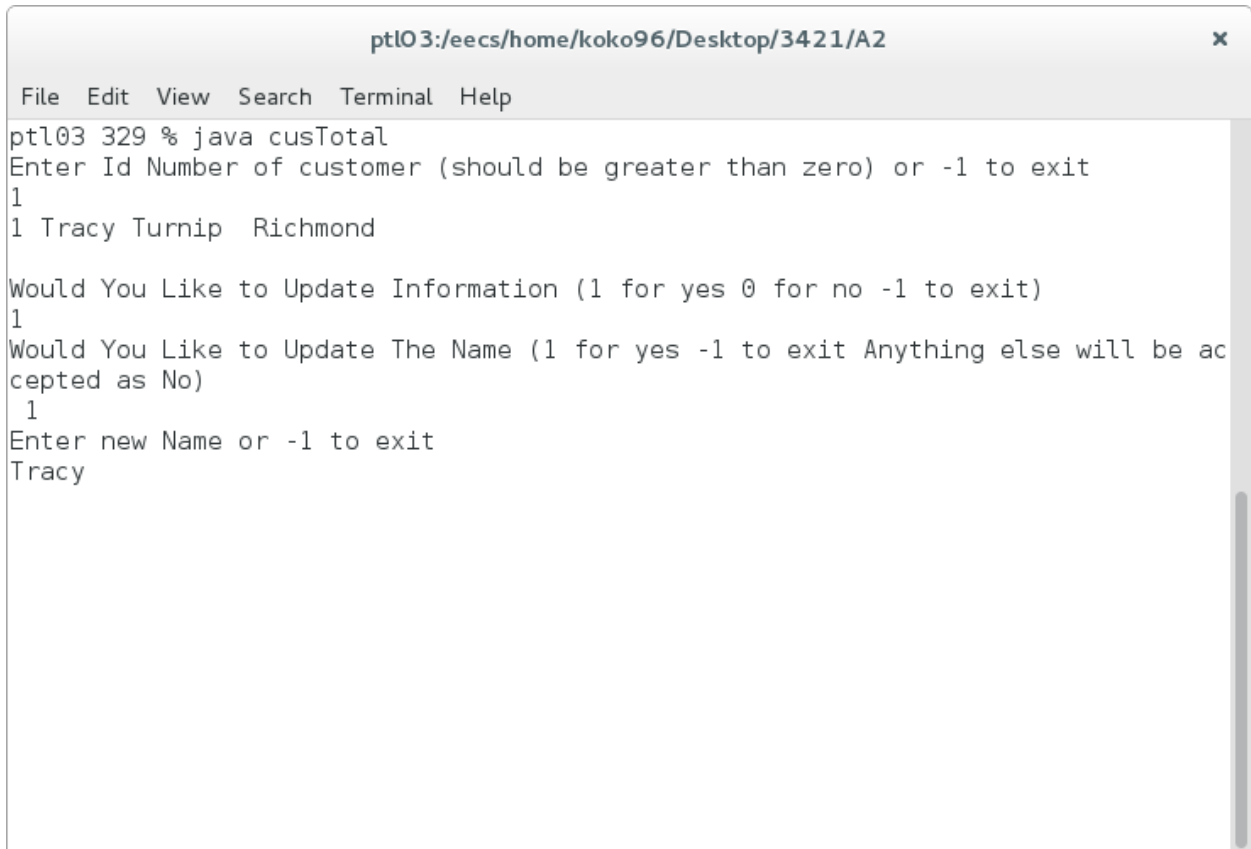
If the user says yes to update the information then the program will ask once for the name and once to update the city

A screenshot of a terminal window titled "ptl03:/eecs/home/koko96/Desktop/3421/A2". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal content shows the execution of a Java program. The prompt is "ptl03 325 % java cusTotal". The first prompt is "Enter Id Number of customer (should be greater than zero) or -1 to exit", followed by the input "1". The second prompt is "Would You Like to Update Information (1 for yes 0 for no -1 to exit)", followed by the input "1". The third prompt is "Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)". The output shows "1 Tracy Turnip Richmond".

```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
ptl03 325 % java cusTotal
Enter Id Number of customer (should be greater than zero) or -1 to exit
1
1 Tracy Turnip Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
1
Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)
```

If the customer says yes to update the name then the program asks for the new name

A screenshot of a terminal window titled "ptl03:/eecs/home/koko96/Desktop/3421/A2". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal content shows the execution of a Java program named "cusTotal". The user enters "1" for the customer ID, and the program displays "1 Tracy Turnip Richmond". It then asks "Would You Like to Update Information (1 for yes 0 for no -1 to exit)", where the user enters "1". Next, it asks "Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)", where the user enters "1". Finally, it prompts "Enter new Name or -1 to exit", and the user enters "Tracy".

```
ptl03 329 % java cusTotal
Enter Id Number of customer (should be greater than zero) or -1 to exit
1
1 Tracy Turnip Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
1
Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)
1
Enter new Name or -1 to exit
Tracy
```

Note: the new Name should be shorter than 21 characters otherwise the program will ask to input another name

File Edit View Search Terminal Help

ptl03 331 % java cusTotal

Enter Id Number of customer (should be greater than zero) or -1 to exit

1

1 Tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)

1

Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)

1

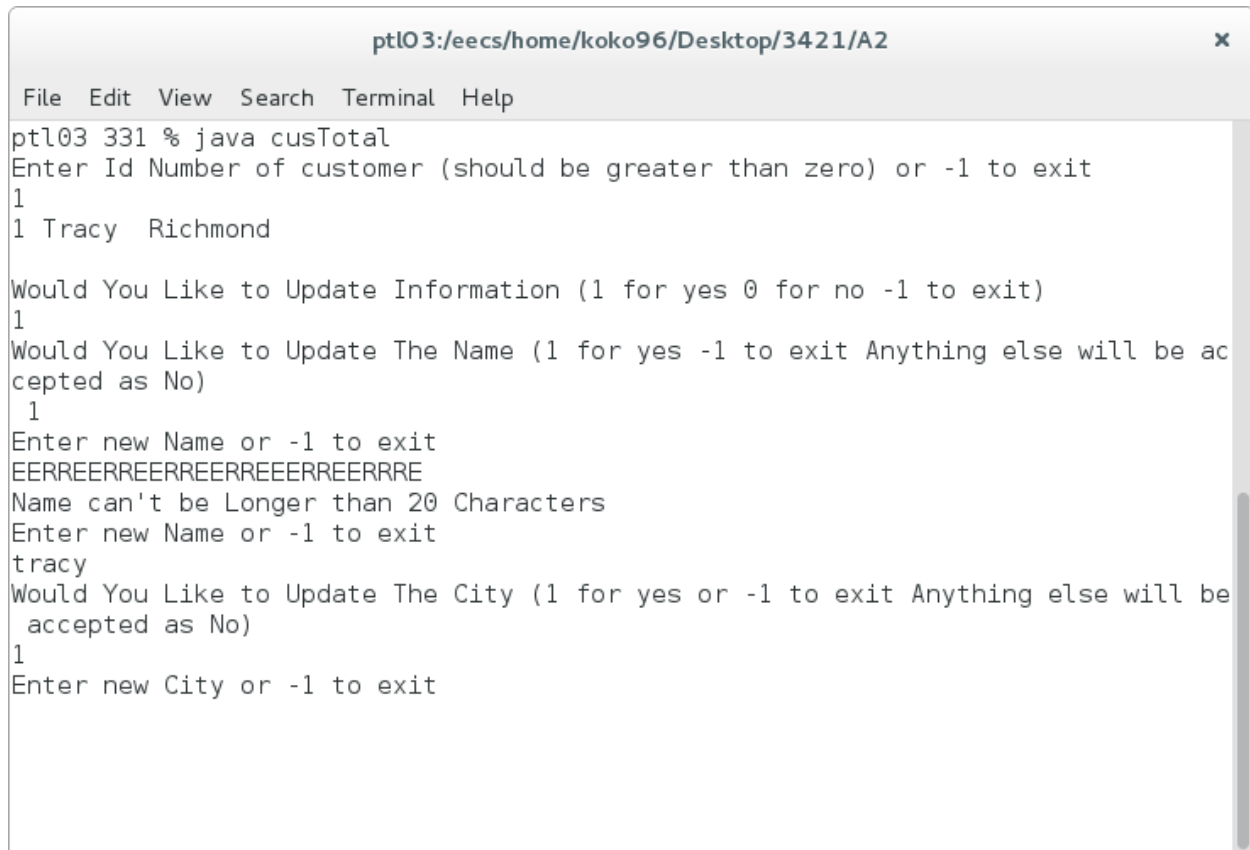
Enter new Name or -1 to exit

EERREERREERREERREERREERREERRE

Name can't be Longer than 20 Characters

Enter new Name or -1 to exit

After updating the name the program moves to updating the city



```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
ptl03 331 % java cusTotal
Enter Id Number of customer (should be greater than zero) or -1 to exit
1
1 Tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
1
Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)
1
Enter new Name or -1 to exit
EERREERREERREERREERREERREERRE
Name can't be Longer than 20 Characters
Enter new Name or -1 to exit
tracy
Would You Like to Update The City (1 for yes or -1 to exit Anything else will be accepted as No)
1
Enter new City or -1 to exit
```

Note: the new City should be shorter than 16 characters otherwise the program will ask to input another City

For both update name and update city if the customer says 0 to the question “Would You Like to Update Information (1 for yes 0 for no -1 to exit)” the program will move to the next task (for update name will move to update city and for update city it will move to fetching categories)

File Edit View Search Terminal Help

Enter Id Number of customer (should be greater than zero) or -1 to exit

1

1 tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)

1

Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)

0

Would You Like to Update The City (1 for yes or -1 to exit Anything else will be accepted as No)

0

children

cooking

drama

guide

history

horror

humor

mystery

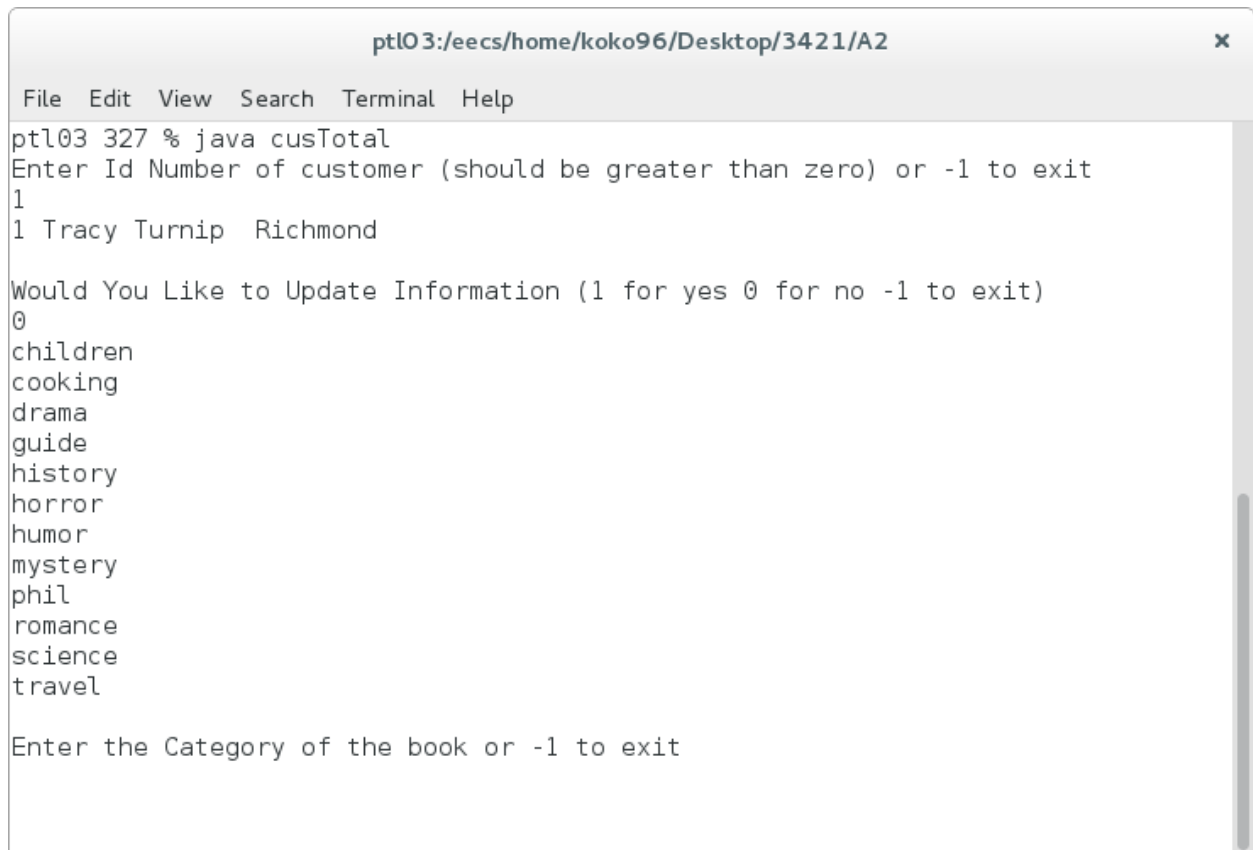
phil

romance

science

travel

After Updating step is done the program will go to the next section (fetching categories from database).

A screenshot of a terminal window titled "ptl03:/eecs/home/koko96/Desktop/3421/A2". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal content shows the execution of a Java program. The user enters "1" for the customer ID, and the program displays the name "Tracy Turnip" and the location "Richmond". It then asks if the user wants to update information, to which the user responds "0". The program then lists ten book categories: children, cooking, drama, guide, history, horror, humor, mystery, phil, romance, science, and travel. Finally, it prompts the user to enter the category of the book or -1 to exit.

```
ptl03 327 % java cusTotal
Enter Id Number of customer (should be greater than zero) or -1 to exit
1
1 Tracy Turnip  Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
0
children
cooking
drama
guide
history
horror
humor
mystery
phil
romance
science
travel

Enter the Category of the book or -1 to exit
```

It will display every book category in the database (if any)

After Seeing the category names the customer should enter the desired category as a string
For example travel

```
ptl03:/eecs/home/koko96/Desktop/3421/A2 x
File Edit View Search Terminal Help
Would You Like to Update Information (1 for yes 0 for no -1 to exit)
1
Would You Like to Update The Name (1 for yes -1 to exit Anything else will be ac
cepted as No)
0
Would You Like to Update The City (1 for yes or -1 to exit Anything else will be
accepted as No)
0
children
cooking
drama
guide
history
horror
humor
mystery
phil
romance
science
travel

Enter the Category of the book or -1 to exit
travel
```

After entering the desired category name the program will print out index followed by index number and then the information about the book with given category

```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
horror
humor
mystery
phil
romance
science
travel

Enter the Category of the book or -1 to exit
travel

INDEX:1  TITLE:Richmond Underground
INDEX:2  TITLE:Suzy does Yorktown
INDEX:3  TITLE:Lynchburg's Great!
INDEX:4  TITLE:Alpha Centauri
INDEX:5  TITLE:Where's Canada?
INDEX:6  TITLE:Ou est Ce Canada?
INDEX:7  TITLE:Montreal est dans Quebec
INDEX:8  TITLE:Darmstadt
INDEX:9  TITLE:Parthenon
INDEX:10 TITLE:Live in Charlottesville?!
INDEX:11 TITLE:Not That London!
INDEX:12 TITLE:Tropical Blacksborg
INDEX:13 TITLE:Montreal pour les Idiots
INDEX:14 TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
```

After Seeing the books the customer should pick the one of the displayed books and enter the index of that book
for example for book title “Richmond Underground” from year 1997
The customer should enter the index of that book which is 1


```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
horror
humor
mystery
phil
romance
science
travel

Enter the Category of the book or -1 to exit
travel

INDEX:1  TITLE:Richmond Underground
INDEX:2  TITLE:Suzy does Yorktown
INDEX:3  TITLE:Lynchburg's Great!
INDEX:4  TITLE:Alpha Centauri
INDEX:5  TITLE:Where's Canada?
INDEX:6  TITLE:Ou est Ce Canada?
INDEX:7  TITLE:Montreal est dans Quebec
INDEX:8  TITLE:Darmstadt
INDEX:9  TITLE:Parthenon
INDEX:10 TITLE:Live in Charlottesville?!
INDEX:11 TITLE:Not That London!
INDEX:12 TITLE:Tropical Blacksborg
INDEX:13 TITLE:Montreal pour les Idiots
INDEX:14 TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
1
```

If the input number is higher or lower than the index number shown the program will ask you to enter the number again

```
ptl03:/eecs/home/koko96/Desktop/3421/A2 x
File Edit View Search Terminal Help
romance
science
travel

Enter the Category of the book or -1 to exit
travel

INDEX:1  TITLE:Richmond Underground
INDEX:2  TITLE:Suzy does Yorktown
INDEX:3  TITLE:Lynchburg's Great!
INDEX:4  TITLE:Alpha Centauri
INDEX:5  TITLE:Where's Canada?
INDEX:6  TITLE:Ou est Ce Canada?
INDEX:7  TITLE:Montreal est dans Quebec
INDEX:8  TITLE:Darmstadt
INDEX:9  TITLE:Parthenon
INDEX:10 TITLE:Live in Charlottesville?!
INDEX:11 TITLE:Not That London!
INDEX:12 TITLE:Tropical Blacksbury
INDEX:13 TITLE:Montreal pour les Idiots
INDEX:14 TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
0
Enter the Index of the book Title or -1 to exit
15
Enter the Index of the book Title or -1 to exit
1
```

After the customer enters the right index the program will display all of the books found with that name and title

```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
science
travel

Enter the Category of the book or -1 to exit
travel

INDEX:1  TITLE:Richmond Underground
INDEX:2  TITLE:Suzy does Yorktown
INDEX:3  TITLE:Lynchburg's Great!
INDEX:4  TITLE:Alpha Centauri
INDEX:5  TITLE:Where's Canada?
INDEX:6  TITLE:Ou est Ce Canada?
INDEX:7  TITLE:Montreal est dans Quebec
INDEX:8  TITLE:Darmstadt
INDEX:9  TITLE:Parthenon
INDEX:10 TITLE:Live in Charlottesville?!
INDEX:11 TITLE:Not That London!
INDEX:12 TITLE:Tropical Blacksborg
INDEX:13 TITLE:Montreal pour les Idiots
INDEX:14 TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
1

Books found are:
INDEX:1  TITLE:Richmond Underground  YEAR:1997  LANGUAGE:English  WEIGHT:167
Enter the INDEX of the desired book or -1 to exit
```

In this case it found only one book with that title and category

And now the customer should enter the index of the displayed books in this case 1 (If the input number is higher or lower than the index number shown the program will ask you to enter the number again)

```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
INDEX:1  TITLE:Richmond Underground
INDEX:2  TITLE:Suzy does Yorktown
INDEX:3  TITLE:Lynchburg's Great!
INDEX:4  TITLE:Alpha Centauri
INDEX:5  TITLE:Where's Canada?
INDEX:6  TITLE:Ou est Ce Canada?
INDEX:7  TITLE:Montreal est dans Quebec
INDEX:8  TITLE:Darmstadt
INDEX:9  TITLE:Parthenon
INDEX:10 TITLE:Live in Charlottesville?!
INDEX:11 TITLE:Not That London!
INDEX:12 TITLE:Tropical Blacksbury
INDEX:13 TITLE:Montreal pour les Idiots
INDEX:14 TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
1
1 Books found:
INDEX:1  TITLE:Richmond Underground  YEAR:1997  LANGUAGE:English  WEIGHT:167
Enter the INDEX of the desired book or -1 to exit
2
Wrong INDEX
Enter the Number of the desired book or -1 to exit
0
Wrong INDEX
Enter the Number of the desired book or -1 to exit
```

After that the program will ask for the quantity which should be a positive integer (higher than 0).

```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
INDEX:10  TITLE:Live in Charlottesville?!
INDEX:11  TITLE:Not That London!
INDEX:12  TITLE:Tropical Blacksburg
INDEX:13  TITLE:Montreal pour les Idiots
INDEX:14  TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
1
1 Books found:
INDEX:1  TITLE:Richmond Underground  YEAR:1997  LANGUAGE:English  WEIGHT:167
Enter the INDEX of the desired book or -1 to exit
2
Wrong INDEX
Enter the Number of the desired book or -1 to exit
0
Wrong INDEX
Enter the Number of the desired book or -1 to exit
1
The Minumum price for the book is 12.95
Enter the quantity to buy or -1 to exit
0
Should be higher Than Zero
Enter the quantity to buy or -1 to exit
1
The Total Price is 12.95
Do you want to Finish the purchase ? (1 for yes 0 for no)
```

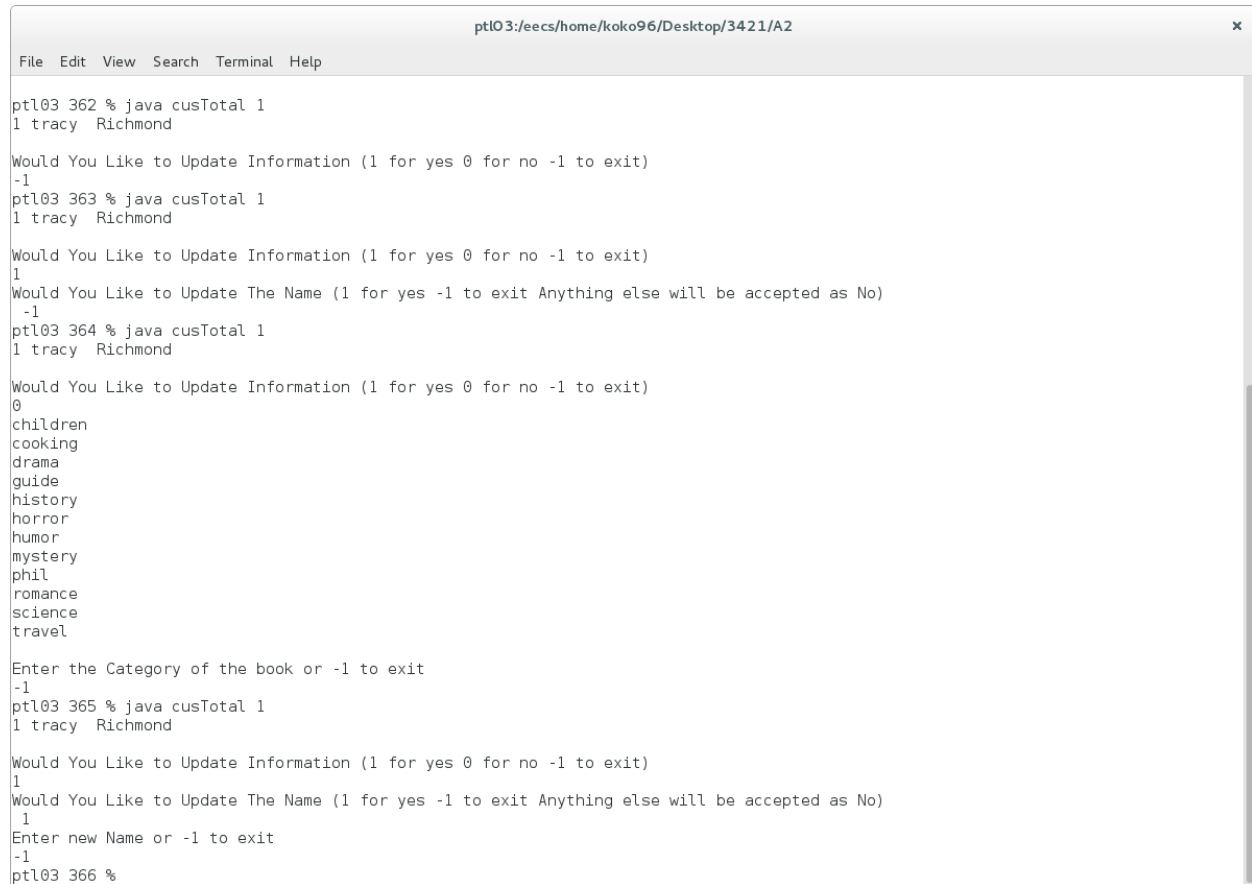
Finally the program will ask if the user wants to finalize the purchase.
And will output Congratulations if the customer says yes

```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help
INDEX:12  TITLE:Tropical Blacksburg
INDEX:13  TITLE:Montreal pour les Idiots
INDEX:14  TITLE:Williamsburg Hot Spots
Enter the Index of the book Title or -1 to exit
1
1 Books found:
INDEX:1  TITLE:Richmond Underground  YEAR:1997  LANGUAGE:English  WEIGHT:167
Enter the INDEX of the desired book or -1 to exit
2
Wrong INDEX
Enter the Number of the desired book or -1 to exit
0
Wrong INDEX
Enter the Number of the desired book or -1 to exit
1
The Minumum price for the book is 12.95
Enter the quantity to buy or -1 to exit
0
Should be higher Than Zero
Enter the quantity to buy  or -1 to exit
1
The Total Price is 12.95
Do you want to Finish the purchase ? (1 for yes 0 for no)
1
Congratulations
ptl03 360 % java cusTotal 1
```

If the customer says no then nothing will be purchased.

Handing the quit at any time:

This program will quit whenever the customer enters -1 (apologies to people who want to change their name to “-1” it will not work)



```
ptl03:/eecs/home/koko96/Desktop/3421/A2
File Edit View Search Terminal Help

ptl03 362 % java cusTotal 1
1 tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
-1
ptl03 363 % java cusTotal 1
1 tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
1
Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)
-1
ptl03 364 % java cusTotal 1
1 tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
0
children
cooking
drama
guide
history
horror
humor
mystery
phil
romance
science
travel

Enter the Category of the book or -1 to exit
-1
ptl03 365 % java cusTotal 1
1 tracy Richmond

Would You Like to Update Information (1 for yes 0 for no -1 to exit)
1
Would You Like to Update The Name (1 for yes -1 to exit Anything else will be accepted as No)
1
Enter new Name or -1 to exit
-1
ptl03 366 %
```

tools used in the project :

Eclipse IDE

Db2

Java libraries :

sql.Connection: To set up the connection to database

sql.DriverManager: establish the appropriate driver

sql.PreparedStatement: to prepare the sql query

sql.ResultSet: get the result of the query

sql.SQLException: handling the sql exception

Utilities :

ArrayList - Date - HashMap - Scanner