Project Report

This project is building a database application program in Java via JDBC on CSE's PRISM environment for accessing DB2.

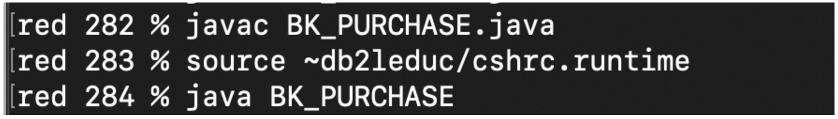
Priming the Shell:

In the terminal,

Type “`javac BK_PURCHASE.java`”
---Which compile the java application program (APP)

Type “`source ~db2leduc/cshrc.runtime`”
---Which can resolve *which* database server it is to talk with

Type “`java BK_PURCHASE`”
---Which run this java application



```
[red 282 % javac BK_PURCHASE.java
[red 283 % source ~db2leduc/cshrc.runtime
[red 284 % java BK_PURCHASE
```

Get Connection with the specific database system

Establish the appropriate driver with the DriverManager which is specific for different database systems, for this application, we are using JDBC API.

```
private Connection conDB;   // Connection to the database system.
private String url;         // URL: Which database?
    ...
url = "jdbc:db2:c3421m";    // URL: This database.
conDB = DriverManager.getConnection(url);
```

This connection convention can be used to establish a connection to a database server and database that is on a remote system. In this case, we are connecting to a local database system. Every machine on PRISM is a client to PRISM's DB2 system.

When the APP is done, it is good programming practise to close the connection.

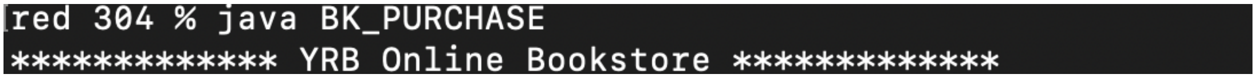
```
conDB.close();
```

Of course, the connection does automatically get closed when the APP process shuts down.

For each of these calls, one needs to encase them in a try...catch block (or further throw the exceptions yourself for the caller to address). Each can throw a *COM.ibm.db2.jdbc.DB2*Exception. It would be best to catch any such exception, print out some meaningful message about where in the process the failure occurred, and then exit.

YRB Online Bookstore application:

• Display the following title:
************* YRB Online Bookstore *************



```
red 304 % java BK_PURCHASE
************* YRB Online Bookstore *************
```

- Prompt the user to enter a customer number.

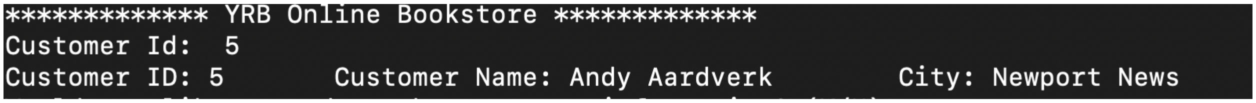
  Customer Id: ##

- The program starts by finding a customer, that is, it looks for a customer to see if the customer with the given id exists.

  If the customer does not exist, the program displays an error message and requests the customer id again.

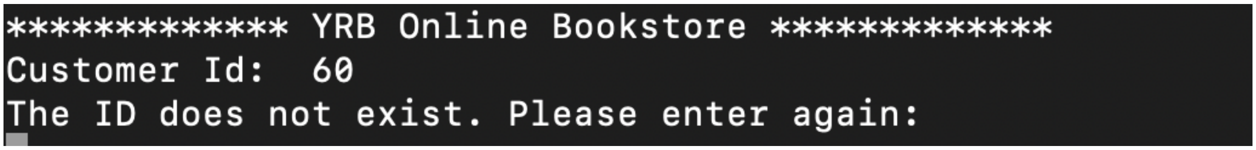
  If the customer exists, the query returns and displays the customer information (the customer id, name, and city) and asks the user whether he/she would like to update the customer information.

Customer id existed



```
************* YRB Online Bookstore *************
Customer Id:  5
Customer ID: 5       Customer Name: Andy Aardverk       City: Newport News
```

Customer id not existed



```
************* YRB Online Bookstore *************
Customer Id:  60
The ID does not exist. Please enter again:
```

Display the following message:

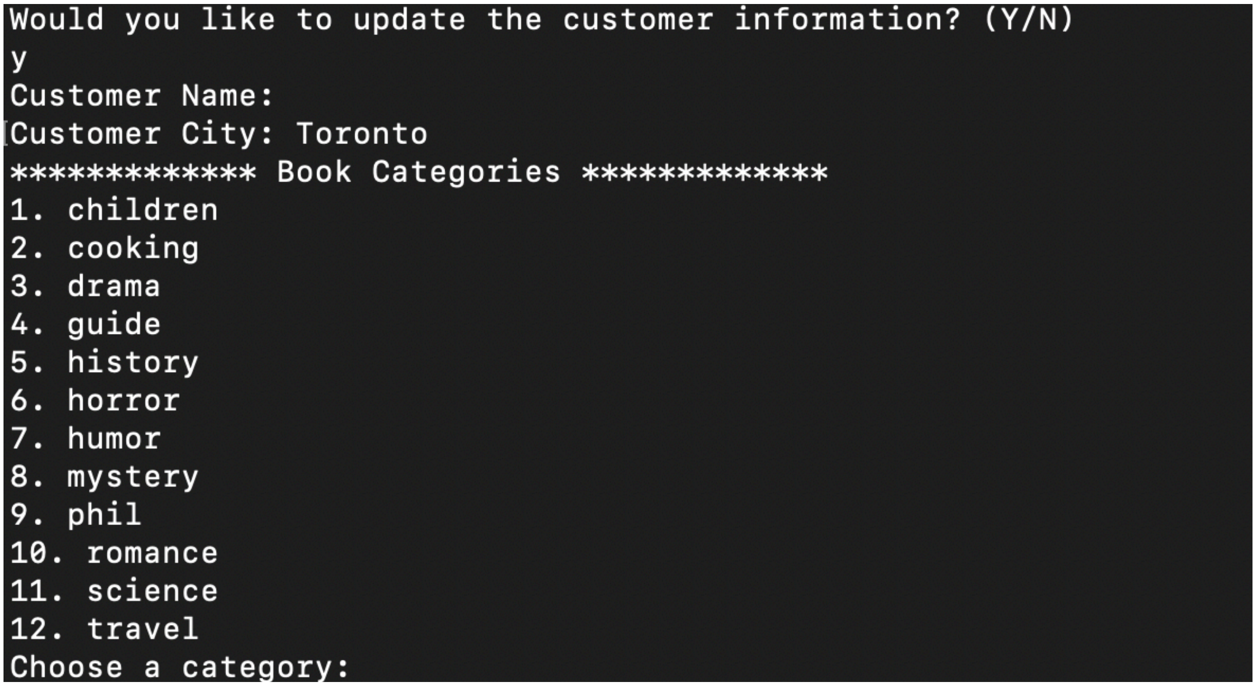
```
Would you like to update the customer information? (Y/N)
```

If the user enters ‘y’ or ‘Y’, asks the new values for the following customer’s information:

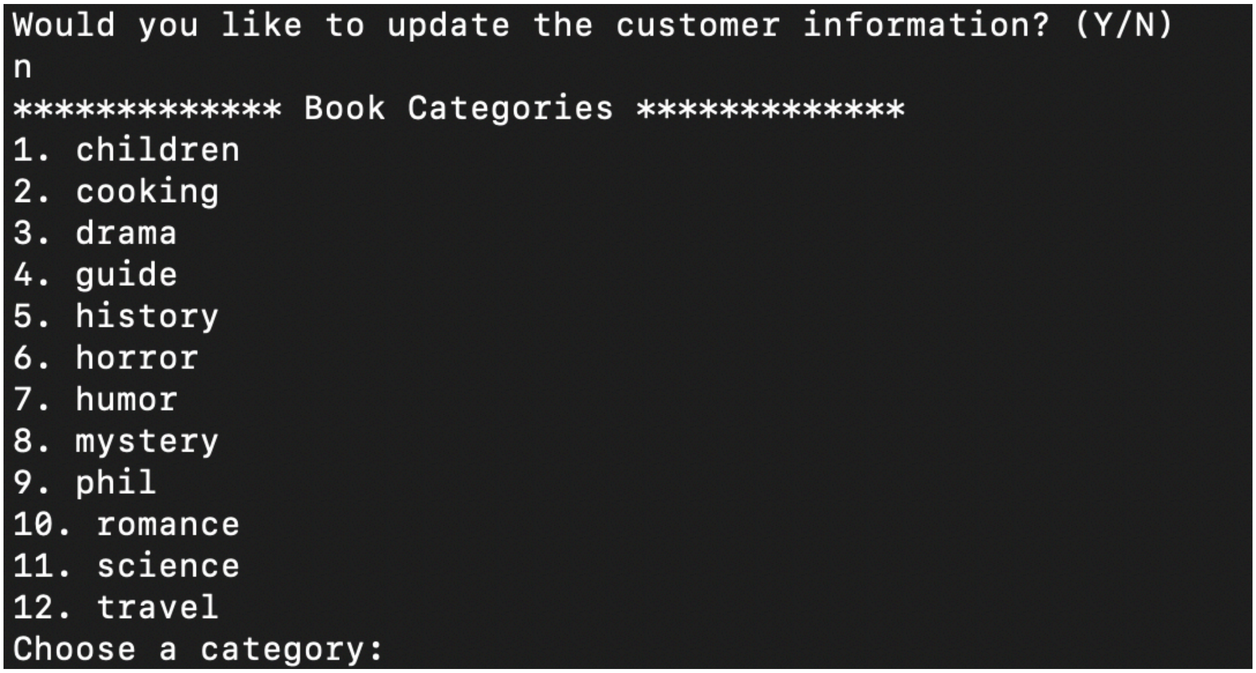
```
Customer Name:

Customer City:
```

Store the new values of name and city for the given customer.

If the user enters ‘n’ or ‘N’, go to the next step.



```
Would you like to update the customer information? (Y/N)
y
Customer Name:
Customer City: Toronto
************* Book Categories *************
1. children
2. cooking
3. drama
4. guide
5. history
6. horror
7. humor
8. mystery
9. phil
10. romance
11. science
12. travel
Choose a category:
```

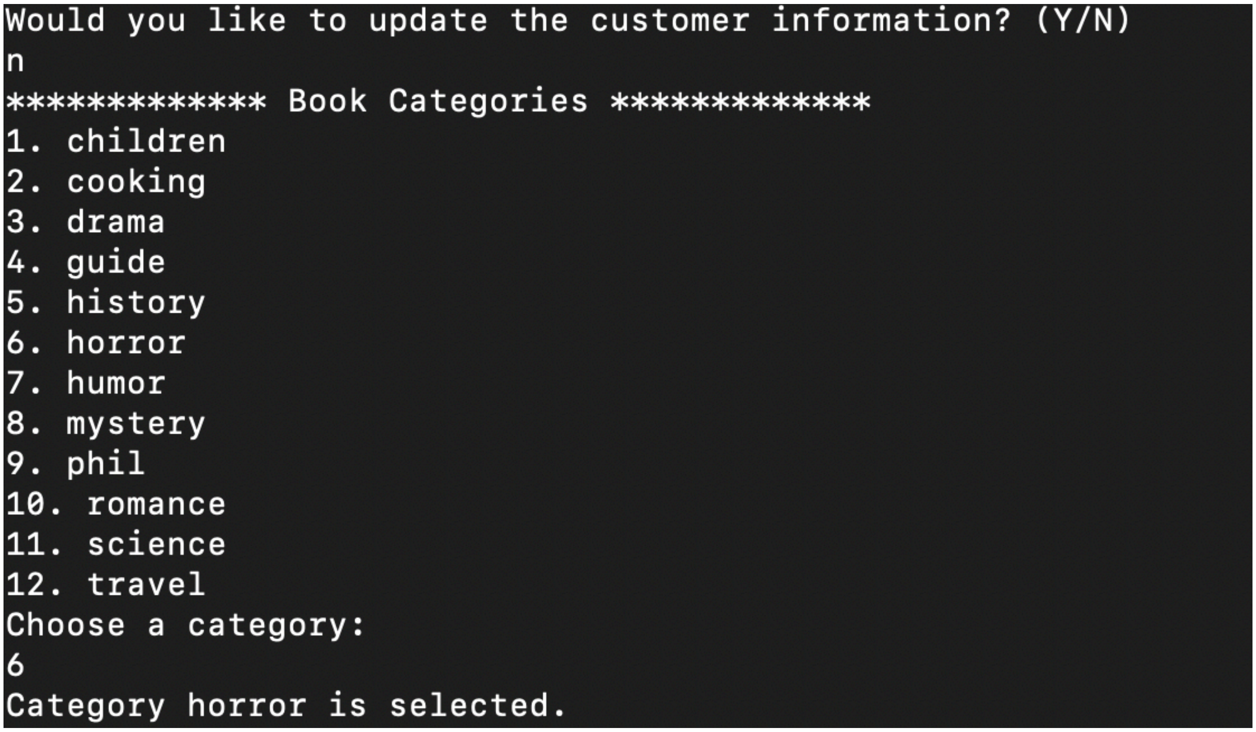


```
Would you like to update the customer information? (Y/N)
n
************* Book Categories *************
1. children
2. cooking
3. drama
4. guide
5. history
6. horror
7. humor
8. mystery
9. phil
10. romance
11. science
12. travel
Choose a category:
```

- If the customer exists:

  Write a query in your program to return all the categories (cat) in your database. Number the categories from 1 .. n and ask the user to enter a number representing a category.

```
************* Book Categories *************

  1.  children
  2.  cooking
  3.  drama
  4.  guide
  5.  history
  6.  horror
  7.  humor
  8.  mystery
  9.  phil
 10.  romance
 11.  science
 12.  travel

Choose a category: 10

Category romance is selected.
```



```
Would you like to update the customer information? (Y/N)
n
************* Book Categories *************
1. children
2. cooking
3. drama
4. guide
5. history
6. horror
7. humor
8. mystery
9. phil
10. romance
11. science
12. travel
Choose a category:
6
Category horror is selected.
```

- After choosing a category by the customer, customer can enter the title of the book. You need to write a query that looks for the book with the given title and the selected category. If the given title with the selected category exists, return the book information (title, year, language, weight). The query for this part may return more than one book. So, display all the books in a list and let the user choose a book from the list.

  Title: I don't think so

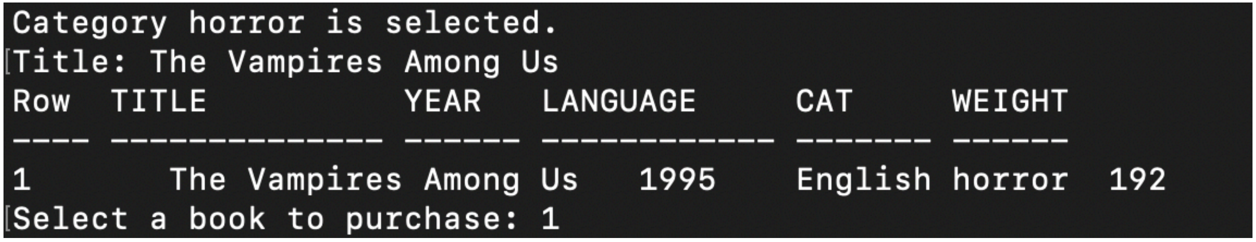
```
TITLE                          YEAR   LANGUAGE    CAT          WEIGHT
------------------------- ------ ---------- ---------- ------
I don't think so       1997  English     romance       139
```

  If the book with the given title and the category does not exist, the program lets the user choose another category and enter another title.

- If the book exists:

  The user selects a book from the result of the previous query to buy.

```
Select a book to purchase: 1
```



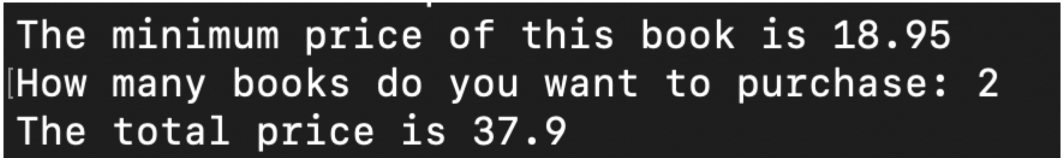
```
Category horror is selected.
[Title: The Vampires Among Us
Row  TITLE              YEAR   LANGUAGE     CAT     WEIGHT
---- -------------- ------ ------------ ------- ------
1       The Vampires Among Us   1995    English horror  192
[Select a book to purchase: 1
```

Display the price and calculate the total price (2 points)

After, the user selects a book to buy, the minimum price for that book will be retrieved from the database. You need to write a query that returns the minimum price for the book that has been offered and display the price to the user. The minimum price will be displayed to the user.

Ask the user to enter the number of books (the quantity) to buy. After, the user enters the quantity, the total price is calculated and displayed to the user (quantity * minimum price)

Get the minimum price of the book and calculate total price purchased



```
The minimum price of this book is 18.95
[How many books do you want to purchase: 2
The total price is 37.9
```

- Ask the user to confirm the purchase:

```
Would you like to purchase the book/books? (Y/N)
```

  - If the user approves (the user enters ‘y’ or ‘Y’), the purchase information will be stored in the purchase table with the current date and time. Display:

    ```
    Thank you for your purchase.
    ```

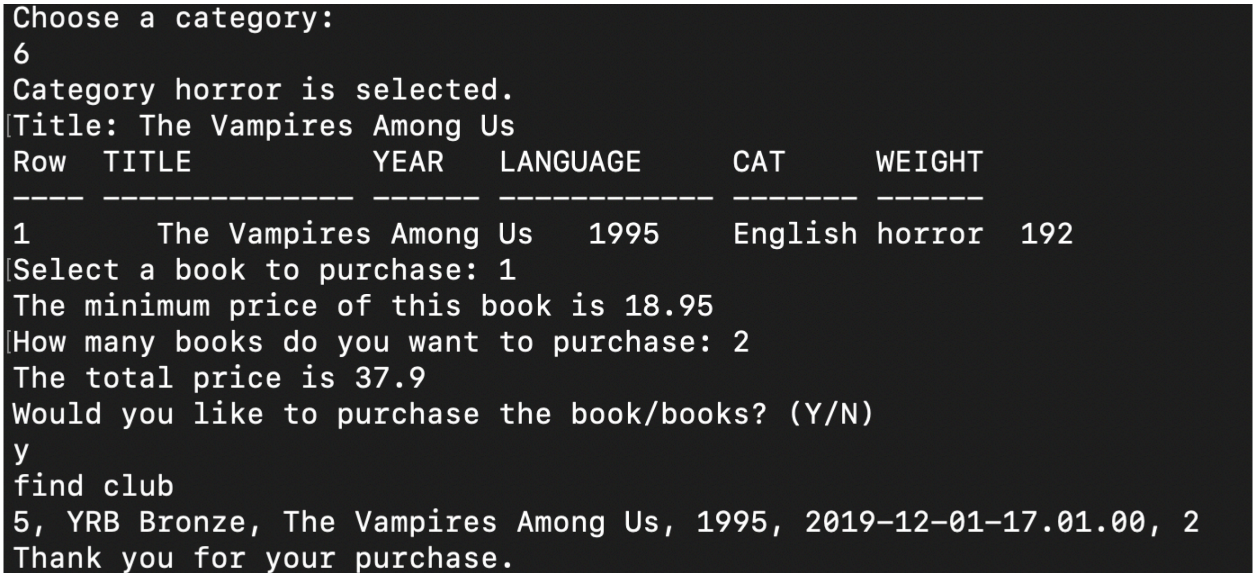
  - If the user enters ‘n’ or ‘N’, program terminates. Display:

    ```
    Would you like to continue? (Y/N)
    ```

    - If yes, let the user choose a category and books.
    - If no, terminate the program and display.

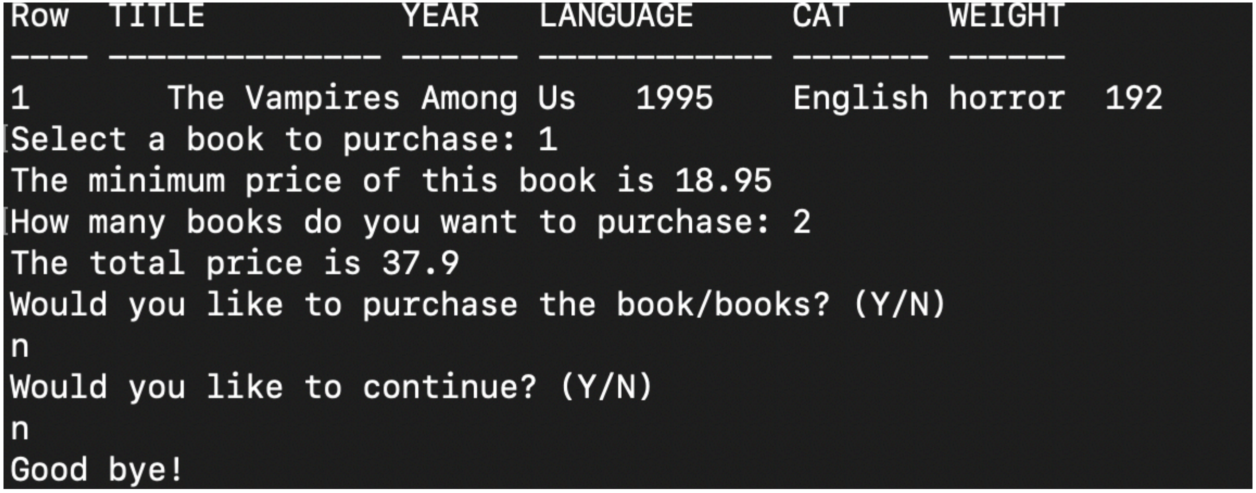
      ```
      Good bye!
      ```

Purchase and continue



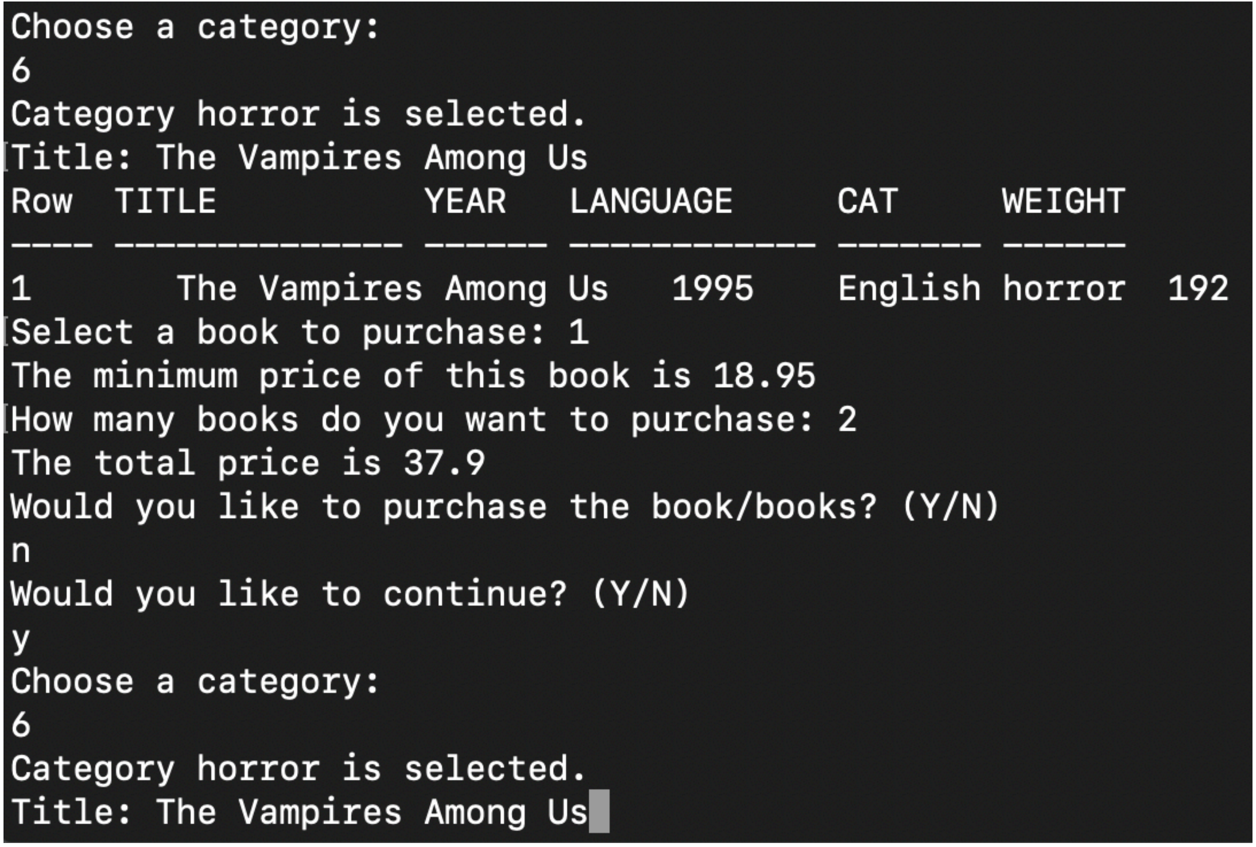
```
Choose a category:
6
Category horror is selected.
[Title: The Vampires Among Us
Row  TITLE          YEAR   LANGUAGE     CAT     WEIGHT
---- -------------- ------ ------------ ------- ------
1       The Vampires Among Us   1995    English horror  192
[Select a book to purchase: 1
The minimum price of this book is 18.95
[How many books do you want to purchase: 2
The total price is 37.9
Would you like to purchase the book/books? (Y/N)
y
find club
5, YRB Bronze, The Vampires Among Us, 1995, 2019-12-01-17.01.00, 2
Thank you for your purchase.
```

No purchase and doesn’t continue



```
Row  TITLE          YEAR   LANGUAGE     CAT     WEIGHT
---- -------------- ------ ------------ ------- ------
1       The Vampires Among Us   1995    English horror  192
Select a book to purchase: 1
The minimum price of this book is 18.95
How many books do you want to purchase: 2
The total price is 37.9
Would you like to purchase the book/books? (Y/N)
n
Would you like to continue? (Y/N)
n
Good bye!
```

No purchase and continue



```
Choose a category:
6
Category horror is selected.
Title: The Vampires Among Us
Row  TITLE          YEAR   LANGUAGE     CAT     WEIGHT
---- -------------- ------ ------------ ------- ------
1       The Vampires Among Us   1995    English horror  192
Select a book to purchase: 1
The minimum price of this book is 18.95
How many books do you want to purchase: 2
The total price is 37.9
Would you like to purchase the book/books? (Y/N)
n
Would you like to continue? (Y/N)
y
Choose a category:
6
Category horror is selected.
Title: The Vampires Among Us
```