Create a library management application on the Command Line which will follow the following protocol.

User is first presented the following options:

**MAIN:**

Welcome to the GCIT Library Management System. Which category of a user are you

1. Librarian
2. Administrator
3. Borrower

<take input>

Based on what the user selects, the following prompts will appear to fit his role:

**LIBRARIAN**

**LIB1:**

1. Enter Branch you manage
2. Quite to previous **(should take you menu MAIN)**

<take input>

For Option 1, Give a list of Library branches using the names or locations like this:

**LIB2:**

1. University Library, Boston
2. State Library, New York
3. Federal Library, Washington DC
4. County Library, McLean VA
5. Quit to previous **(should take you menu LIB1)**

<take input>

The user will only pick the number in the above list and you should figure out which branch he is referring.

Based on the selection, the next list would be:

**LIB3:**

1. Update the details of the Library
2. Add copies of Book to the Branch
3. Quit to previous **(should take you menu LIB2)**

<take input>

**Option 1** should update **library\_branch** table for the branch he had picked before. This should be like:

You have chosen to update the Branch with Branch Id: X and Branch Name: ABCD. **Enter ‘quit’ at any prompt to cancel operation.**

Please enter new branch name or enter N/A for no change:

<take input>

Please enter new branch address or enter N/A for no change:

<take input>

Then update the values for this branch and say successfully updated. Then go back to menu **LIB3,** to start over again.

**Option 2** should give further options like this:

Pick the Book you want to add copies of, to your branch:

1. Lost Tribe by Sidney Sheldon
2. The Haunting by Stepehen King
3. Microtrends by Mark Penn
4. Quit to cancel operation

<take input>

Existing number of copies: N **(if none show zero)**

Enter new number of copies:

<take input>

Then you should update the book\_copies table with the new values. Then take the user back to **LIB3.**

**BORROWER**

**Enter the your Card Number:**

**<take input>**

**Don’t let borrower to proceed until he gives valid card number.**

**BORR1:**

1. Check out a book
2. Return a Book
3. Quit to Previous **(should take you menu MAIN)**

**Option 1** should show the following options

Pick the Branch you want to check out from:

1. University Library, Boston
2. State Library, New York
3. Federal Library, Washington DC
4. County Library, McLean VA
5. Quit to previous **(should take you menu BORR1)**

Pick the Book you want to check out **(make sure you only show books that have atleast one copy in BOOK\_COPIES in the branch picked)**

1. Lost Tribe by Sidney Sheldon
2. The Haunting by Stepehen King
3. Microtrends by Mark Penn
4. Quit to cancel operation **(should take you menu BORR1)**

**Then add entry into book\_loans, date out should be today’s date, due date should be one week from today’s date.**

**Implement the return book functionality the same way as above.**

**Also implement the following ADMINISTRATOR functions:**

1. **Add/Update/Delete Book and Author**
2. **Add/Update/Delete Publishers**
3. **Add/Update/Delete Library Branches**
4. **Add/Update/Delete Borrowers**
5. **Over-ride Due Date for a Book Loan**

**Classes:**

1. **Admin**

**Fields:**

* **Name**

**Methods**

* **Update book/author**
  + **Adding a book and author**
  + **Deleting abook and author**
  + **Update the book and/or author details**
  + **Explicitly affected table/s:**
    - **Book and/or Author**
* **Update publishers**
  + **Adding a publisher**
  + **Deleting a publisher**
  + **Update publisher info**
  + **Explicitly affected table/s:**
    - **Publisher**
* **Update Library branches**
  + **Adding a branch**
  + **Deleting a branch**
  + **Updating a branch**
  + **Explicitly affected table/s:**
    - **Library Branch**
* **Update Borrowers**
  + **Adding a borrower**
  + **Deleting a borrower**
  + **Update borrowers details**
  + **Explicitly affected table/s:**
    - **Borrower**
* **Override DueDate**
  + **Modify the value of due date**
  + **Explicitly affected table/s:**
    - **Book Loans**

**2. Borrower**

**Fields**

* **cardNo**

**Methods**

* **CheckOut**
  + **Checks if he has already taken this book**
  + **Adds loans details book to loans table**
  + **Sets the pending status as 1**
  + **Decrements the no of copies in the book copies table**
  + **Explicitly affected table/s:**
    - **Book Loans, book copies**
* **Return**
  + **Loads all the “pending” books by this borrower**
  + **Selected books are check as “returned” no of copies in the book copies table are incremented by 1**
  + **Explicitly affected table/s:**
    - **Book loans, book copies**

**3. Librarian**

**Fields**

* **Branch**

**Methods**

* **Update Branch Details**
  + **Updates the table with new details**
  + **Explicitly affected table/s:**
    - **branch**
* **Add book copies**
  + **Loads the book names**
  + **Updates the number of copies of the selected book**
  + **Explicitly affected table/s:**
    - **Book copies**