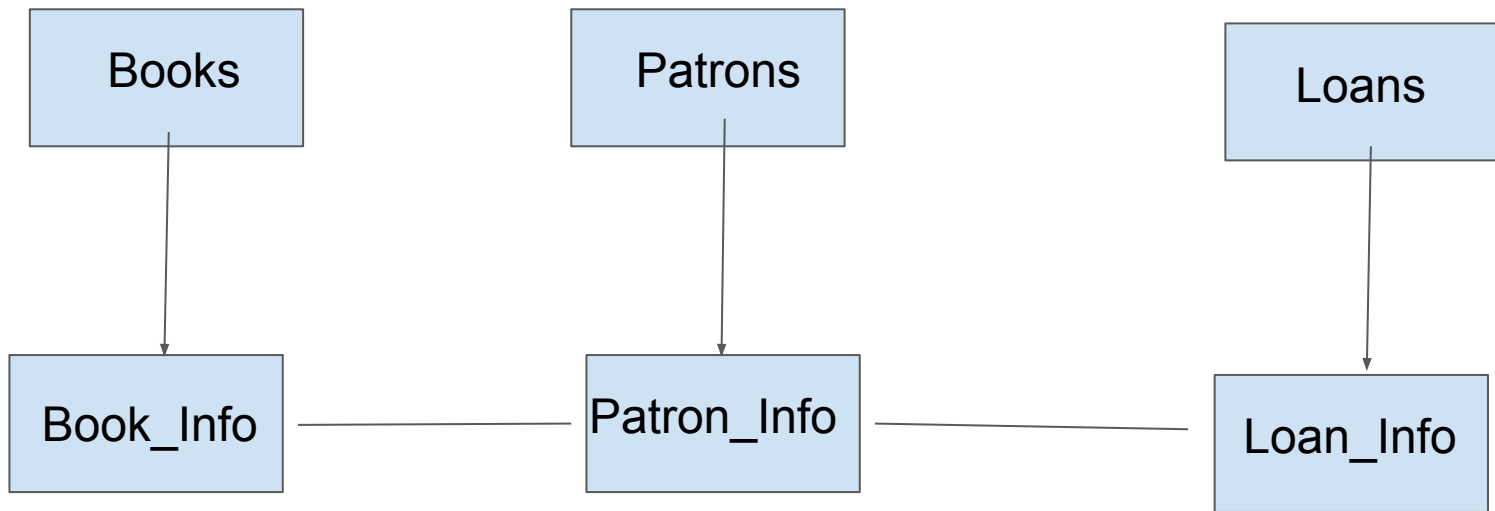


CSCE 1040 Homework 2

Section 001

Sachi Hansalia



Pseudo code

Books Member Functions

Add Book

- User input for book_info attributes
 - Title, Author, ISBN Number, Library ID number, cost, & status
- Create Book_info object
- Assign attributes
- Add object to Books collection
- Load to file

Edit Book

- User input for book to edit
 - Search collection by title
- User input for updated information if book is found
 - New title, new author, new ISBN number, new Library ID number, new cost, new status
- Re-assign attributes to book of choice
- Load to file

Pseudo code

Books Member Functions

Delete Book

- User input for book to delete
 - Search collection by name
- Delete object from collection
- Remove from file

Search By Title

- User input for book title
- Compare each object in collection to user input
- When matched return the object

Pseudo code

Books Member Functions

Print Collection

- Print each books information
 - Title & author

Print Details

- User input for name of book
- Search by Title for book in collection
- If book is found output all information for book
 - Title, Author, ISBN Number, Library ID number, cost, & status

Pseudo code

Patron Member Functions

Add Patron

- User input for patron_info attributes
 - Name, ID, fine balance, # of items checked out
- Create Patron_info object
- Assign attributes
- Add object to Patrons collection
- Load to file

Edit Patron

- User input for patron to edit
 - Search collection by name
- User input for updated information if patron is found
 - New name, new ID, new balance, new items checked out
- Re-assign attributes to the patron
- Load to file

Pseudo code

Patron Member Functions

Delete Patron

- User input for patron to delete
 - Search collection by name
- Delete object from collection
- Remove from file

Search By Name

- User input for name of Patron
- Compare each object in collection to user input
- When matched return the object

Pseudo code

Patrons Member Functions

Pay Fine

- User input of patron name that wants to pay
 - Search by name in collection
- Subtract the amount they pay from the fines on their account
- Load corrected data to file

Print Patrons

- Print each Patrons information
 - Name & ID

Print Details

- User input for name of Patron
- Search by Name for name of patron in collection
- If patron is found output all information for them
 - Name, ID, fine balance, # of items checked out

Pseudo code

Loans Member Functions

Check out a book

- User Input for Loan ID, Book ID, & Patron ID
- Check that the Number of Books checked out ≤ 6
- Check that Fine balance = 0
- Create and assign attributes to Loan_info object
- Set Due Date and Time to 10 days from check out
- Set Current Status to “normal”
- Add object to collection
- Search for Book ID in Books collection and Edit status to “Out”
- Search of Patron ID in Patrons collection and Edit Number of Books checked out to increase by one
- Load to file

Pseudo code

Loans Member Functions

Check in a book

- User Input for Loan ID
- Search collection to find loan ID
- Check if it is before due date
- If Book is late, multiply days late by 0.25 to calculate fines
 - Use Patron ID from the Loan_Info object to find Patron and add fines to account
- Use Patron ID to Search for the patron and Edit to subtract 1 from the # of books checked out
- Use Book ID to Search for book and Edit status to “in”
- Delete Loan_Info object from collection
- Load to file

Pseudo code

Loans Member Functions

List all overdue

- Check each object in the Loans collection
- If their status is “overdue” Print Info of Loan
 - Book ID, Patron ID, Loan ID, Due date

List all of Patron X

- User Input of a Patron ID number to search
- Check Loan objects for matching ID's
- For each ID check the status of the loan
- If the status is “over due” Print Info of the Loan
 - Book ID, Patron ID, Loan ID, and Due Date

Pseudo code

Loans Member Functions

Update Loan Status

- Check each object in the Loan collection
- If the object's due date has passed change status to "overdue"
- Load to file

Re-check a book

- User Input of a Loan ID number to search
- Check if book has been rechecked
- If it has not been rechecked, add 10 days to due date
- Load to file

Pseudo code

Loans Member Functions

Edit Loan

- User input for Loan to edit
 - Search collection by Loan ID
- User input for updated information if Loan is found
 - New Loan ID, new Book ID, new Patron ID, new Due Date, new status new re-checked or not
- Re-assign attributes to the Loan object
- Load to file

Report Lost

- User Input for Loan to report
 - Search collection by Loan ID
- For book ID under that object Edit and change status to “lost”
- For Patron ID under that object Edit Balance and add a charge equivalent to the Cost of the book
- Load to file

Pseudo code

Main *each option calls the necessary function, of the same name

Menu

- Books - press 'B'
 - Add Book - press 'a'
 - Edit Book - press 'e'
 - Delete Book - press 'd'
 - Search by Title - press 's'
 - Print Collection - press 'a'
 - Print Details - press 'p'

Pseudo code

Main
name

*each option calls the necessary function, of the same

Menu

- Patrons - press 'P'
 - Add Patron - press 'a'
 - Edit Books Checked out - press 'e'
 - Edit Balance - press 'b'
 - Delete Patron - press 'd'
 - Search by Name - press 's'
 - Pay Fines - press 'f'
 - Print Patrons - press 'p'
 - Print Individual Details - press 'i'

Pseudo code

Main *each option calls the necessary function, of the same name

Menu

- Loans- press 'L'
 - Check out a book - 'b'
 - Check in a book - 'r'
 - List all overdue - 'o'
 - List all of Patron x - 'x'
 - Update loan status - 'u'
 - Re-check a book - 'a'
 - Edit Loan - 'e'
 - Report Lost - 'l'

Class Contents

Books

Count (int)

Booklist (vector)

load/store

Check status

Return books

Price of book

Add Book

Edit Book

Delete Book

Search by Title

Print Collection

Print Details

Patrons

Count (int)

Patlist (vector)

load/store

Num Checked out

Return Book

Add Fine

Add Patron

Edit Books Checked out

Edit Balance

Delete Patron

Search by Name

Pay Fines

Print Patrons

Print Individual Details

Loans

Count (int)

Loanlist (vector)

load/store

Check out a book

Check in a book

List all overdue

List all of Patron x

Update loan status

Re-check a book

Edit Loan

Report Lost

Design Experience

This assignment took about 2 hours for me to complete. I started working on this assignment last weekend and finished today (3/9). The process was easier than the actual coding would have been but the instructions were unclear. I learned to start the project early and work on it a little bit over time. Next time I will be more careful in reading instructions. This system was interesting to construct due to the complex and abundant nature of elements. There were many different functions and actually coding this programs would be very difficult. It would be necessary to compile while building to optimize the debugging process.

Class Contents

Book_Info

Author

Title

ISBN Number

Library ID number

Cost

Current Status (In,
Out, Repair, Lost)

Set/Get for each

Patron_Info

Name

ID number (6 digits)

Fine Balance

Current # of books
checked out

Set/Get for each

Loan_Info

Loan ID

Book ID

Patron ID

Due Date and Time

Current Status (overdue,
normal)

Re-checked

Set/Get for each