CMPSC 222 HW 1 - Pseudocode

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There is a borrow limit that each customer cannot borrow more than 5 books at one time. Display Books: Display all book information to the screen. Remove Books: Specific book will be entered and then deleted from the book database. Return Books: • When customer returns the book, system needs to check the customer’s borrow status. If he/she is valid, system put the book back to the library database.

Main menu options: The main routine should be repeated until the user exits.

1. Register a new user
2. Borrow the book
3. Return the book
4. Add a new book to the library
5. Remove the book from the library
6. Display book list
7. Exit the menu

Customer Class

* Attributes
  + Name
  + Phone
  + Email
  + Address
  + State
  + ID
  + Books Borrowed - List of type Book with all the books the customer currently has checked out
* Methods
  + Set/Get for each attribute, no Setter for sign
  + assign\_ID - generates and assigns an ID to the user
* Constructor
  + Customer(name, phone, email, address, state) - assigns the attributes and calls assign\_ID and initializes books borrowed

Book Class

* Attributes
  + ISBN
  + Title
  + Author
  + Publisher
  + Quantity
  + Genre
  + Year Published
  + Book Quality
  + Book Status(checkedOut or inStock, could use boolean)
* Methods
  + Set/Get for each attribute
  + Display information about a book
* Constructor
  + Book(ISBN, Title, Author, Publisher, Quantity, Genre, BookQuality, Status-defaulted to inLibrary) - assigns attributes to book being added.

Simulation Class

* Methods
  + Register User
    - Customer name does not include any special symbols and the length is no more than 20 characters. • Available states: MI, IL, OH, IN, MO, WI • Email: starts with the recipient name (maximum of 8 characters long with alphabet, digits and special symbols), followed by symbol @ and domain name (maximum of 5 characters long with alphabet and digits), followed by period, and then top level domains (like com, net, org, or edu) will be followed.
  + Add Book
    - Book title includes any number of alphanumeric characters and the length is no more than 50 characters. • Quantity should be the positive number. • 10 digit ISBN number: To verify an ISBN, calculate 10 times the first digit, plus 9 times the second digit, plus 8 times the third digit and so on until we add 1 time the last digit. If the final number leaves no remainder when divided by 11, the code is a valid ISBN.
  + Borrow Book
  + Check if User is registered and if they have less than 5 books
  + Check if Book exists and is available
  + Delete Book
  + Display Book
  + Main Method
    - Do while Loop that runs while exit is not false
    - Displays the option to add user or book, borrow or return book, remove book, or display all books
    - When an option is selected, perform that action and then return to loop