*LIBRARY Program*

Homework 4

*Asante, Edward*

*CSCE 1040*

# Class Relationships

Patrons

Collects

LibraryItems

Collects

Loans

Collects

Patron

Book - DVD - AudioCD

* IS-A
* LibraryItem

Loan

Gets

Wit

h

# Class Contents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Patron  name (string)  theirID (int)  bal (double)  booksOut (int)  Set/get Name  Set/get ID  Set/get Fine\_Bal  Set/get Books\_Out |  | LibraryItem  public:  LibraryItem(int, double, string, int);  virtual ~LibraryItem(){ }   void setIDNum(int);  void setCost(double);  void setStatus(string);  void setLoanPer(int);  int getIDNum();  double getCost();  string getStatus();  int getLoanPer();  virtual void print();  virtual void rawPrint(); private:  int IDNum;  double cost;  string status;  int loanPer; |  | Loan  loanID (int)  bookID (int)  patronID (int)  Due\_Date (int)  Start\_Date(int)  status (string)  int checks  Set/get Loan ID  Set/get Book ID  Set/get Patron ID  Set/get Due\_Date  Set/get Start\_Date  Set/get check  Set/get Status |

IS-A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Book  public: Book(int, double, string, int, string , string , string , string h);  void setAuthorName(string name); void setTitle(string desc); void setISBN(string id); void setBookCat(string cat); void print();  string getAuthorName(); string getTitle(); string getISBN(); string getBookCat();  private: string author; string title; string ISBN\_number; string bookCat; |  | DVD  public:  DVD(int, double, string, int, string, string, int, string, int);   void setDTitle(string);  void setDCat(string);  void setRunTime(int);  void setStudio(string);  void setRelDate(int);  void print();   string getDTitle();  string getDCat();  int getRunTime();  string getStudio();  int getDRelDate();  private:  string dvdTitle;  string dvdCat;  int runTime;  string studio;  int dvdRelDate; |  | AudioCD  public: AudioCD(int, double, string, int, string, string, int, string, string);  void setArtist(string); void setTitle(string); void setNumOfTrack(int); void setReleaseDate(string); void setGenre(string); void print();  string getArtist(); string getTitle(); int getNumOfTrack(); string getReleaseDate(); string getGenre();  private:  string artist;  string title;  int numOfTracks;  string releaseDate;  string genre; |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Patrons  public: int getCount(); void incCount(); void decCount();  void addPatron(); void delePatron(int x); void printPatrons(); Patron\* findPatron(int y); void addNSetPatron(int xx , char aa); void findNPrint(int xxx); void payFines(int x5); void setPatronDebt(int x6, double x7); void editN(int x9, string b); int findNGetBooks(int x8);  void loadPatrons(); void storePatrons(); void cleanUp();  private: int count; vector<Patron\*> patronList; |  | LibraryItems  public: LibraryItems(); ~LibraryItems();  int getCount(); void incCount(); void decCount();  void addLibItem(); void deleLibItem(int x); void printLibItem(); LibraryItem\* findLibItem(int y);  void addNSet(int xxx,char taskk); void findNPrint(int x4); void editP(int xx, double xD); double findNGetPrice(int x5); int findLoanPeriod(int x6);  void loadLibItems(); void storeLibItems(); void cleanUp();  private: int count; vector<LibraryItem\*> LibItemList; |  | Loans  int getCount(); void incCount(); void decCount();  void addLoan(); void deleLoan(int x); void printLoans(); Loans\* findLoan(int y); void findNPrint(int z); void printOD(); void listPatItems(); void lostBook(); void editLoan(int xx); void findNSetStatus(); void recheckLoan(int xx3); void updateFine(); void editLID(int xx4);  void loadLoans(); void storeLoans(); void cleanUp(); private: int count; vector<Loan\*> loanList; |

# Pseudo Code

AddNSet

Find the patron

Based on the transaction picked update info accordingly

setDebt

find patron and update debt

findNGet

find patron and return amount of whatever needed

load

open data

fin all the data

create new objects and populate vector

store

fout all the data

cleanup

clean up all the space

Add Patron

Prompt user for name

Prompt user for ID

Create Patron object

Populate the object

Add to the array

Edit Patron

Find this object

Prompt user for changes

Delete Patron

Find patron

Remove from array

Update count

Find Patron

Prompt user for name and ID

Use a for loop to find a match

Print the match

Print Patron

Find patron

Print patron info

Print Patrons

Loop through patrons array and print info

Pay Fines

Find patron

Prompt the amount being paid

Update patron fine\_bal

Add Item

Prompt user for name and info

Create Item object

Populate the object

Add to the array

Edit Item

Find Item

Change status

Update patron info

Delete Item

Find Item

Change status

Remove from array

Update count

Find Item

Prompt user for name and ID

Use a for loop to find a match and print the match

Print Item

Find patron

Find item

Print item info

Print Items

Print items info in a for loop

load

open data

fin all the data

create new objects and populate vector

store

fout all the data

cleanup

clean up all the space

AddNSet

Find the Item

Based on the transaction picked update info accordingly

Add Loan

Get Patron and item id

Get time info

Populate object

Add to array

Update counts

Edit Loan

Find loan id

* Edit loan id

Update the loan and update item/patron info

Delete Loan

Find loan id

Edit patron and item info

* delete item from patron possession
* update status Remove from array

Update count

Find Loan

Prompt user for ID

Loop to that loan

Print loan for that book

Print Loan

Find loan

Print loan

Print Loans

Print all loans

Print Overdue

* For overdue - find loan- if dude date of loan passed time now print patron info and loan
* For books owned by patron – find the loan id if that loans patron id matches print book

ReportLost

Edit patron and book

* Change status of book
* Bill patron the cost of book

o Add cost to patron bal

Update loan status

load

open data

fin all the data

create new objects and populate vector

store

fout all the data

cleanup

clean up all the space