Project Title: Library Application
Application/Website Name: Public Library
Course: CS6314
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1. Project Description

- Our team created a public library application to support viewing and checking out books. The website features a welcome page, a login page, a library homepage that displays books, a checkout cart, a transaction history page, and an admin page that allows admin users to update the library catalog.
- The page displays a message and provides links to login and to browse the library catalog.
- Users can view the catalog table in the library homepage. The table allows the user to search the table or to filter by genre. It also has pagination, and allows the user to add books to their cart if there are more than 0 copies available.
- The cart page redirects to the login page if they are not already logged in. If they are, it will display all books currently in the cart. The user can checkout and they will be directed to a transaction complete page and the transaction history page will be updated. Cart allows you to remove unwanted books as well. Checking out decrements number of available copies and updates transactions for transaction history.
- The transaction history page will display a list of books that have been borrowed, their due dates, and their return dates if they exist.
- The admin page is only accessible by admin users. The admin users are able to view the data for the catalog of books and can search and filter with several columns. They can also edit, delete and add books from the library catalog.
- **Assumptions:** user can only checkout one copy of a book because its a public library, admin must be given admin role through db.

2. Database Design
**Further sql column information and db info zipped into submission folder.

```sql
CREATE TABLE `role` (
  `RoleId` int(11) NOT NULL,
  `RoleName` varchar(50) NOT NULL,
  `IsDeleted` tinyint(1) NOT NULL DEFAULT '0',
  PRIMARY KEY (`RoleId`),
  UNIQUE KEY `RoleId_UNIQUE` (`RoleId`),
  UNIQUE KEY `RoleName_UNIQUE` (`RoleName`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

CREATE TABLE `user` (
  `UserId` int(11) NOT NULL AUTO_INCREMENT,
  `UserName` varchar(50) NOT NULL,
  `Password` varchar(1000) NOT NULL,
  `Email` varchar(200) NOT NULL,
  `Date_Of_Birth` date NOT NULL,
  `RoleId` int(11) NOT NULL,
  `IsDeleted` tinyint(1) NOT NULL DEFAULT '0',
  `DateCreated` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,
  `DateModified` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,
  `FirstName` varchar(50) NOT NULL,
  `MiddleName` varchar(50) DEFAULT NULL,
  `LastName` varchar(50) NOT NULL,
  `Address_Line_One` varchar(200) DEFAULT NULL,
  `Address_Line_Two` varchar(20) DEFAULT NULL,
  `State` varchar(30) DEFAULT NULL,
  `ZIP` varchar(5) DEFAULT NULL,
  `Phone` varchar(15) DEFAULT NULL,
  PRIMARY KEY (`UserId`),
  UNIQUE KEY `Email_UNIQUE` (`Email`),
  UNIQUE KEY `UserName_UNIQUE` (`UserName`),
  UNIQUE KEY `UserId_UNIQUE` (`UserId`),
  KEY `FK_Role_idx` (`RoleId`),
  CONSTRAINT `FK_Role` FOREIGN KEY (`RoleId`) REFERENCES `role` (`RoleId`) ON
DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB AUTO_INCREMENT=24 DEFAULT CHARSET=utf8;

CREATE TABLE `author` (
  `Author_Id` int(11) NOT NULL,
  `FirstName` varchar(50) NOT NULL,
  `MiddleName` varchar(50) DEFAULT NULL,
```

```sql
  `LastName` varchar(50) NOT NULL,
  `Date_Of_Birth` date DEFAULT NULL,
  `Email` varchar(200) DEFAULT NULL,
  `Phone` varchar(15) DEFAULT NULL,
  `IsDeleted` tinyint(1) DEFAULT '0',
  PRIMARY KEY (`Author_Id`),
  UNIQUE KEY `Author_Id_UNIQUE` (`Author_Id`),
  UNIQUE KEY `Email_UNIQUE` (`Email`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

CREATE TABLE `book` (
  `BookId` int(11) NOT NULL AUTO_INCREMENT,
  `BookTitle` varchar(200) NOT NULL,
  `AuthorId` int(11) NOT NULL,
  `ISBN` varchar(20) NOT NULL,
  `Aisle` varchar(4) DEFAULT NULL,
  `Section` varchar(4) DEFAULT NULL,
  `PublishedDate` date NOT NULL,
  `Num_Copies` int(11) DEFAULT 0,
  `img` longtext,
  `Deleted` tinyint(4) DEFAULT '0',
  `Genre` varchar(45) DEFAULT NULL,
  `Status` tinyint(4) DEFAULT '0',
  PRIMARY KEY (`BookId`),
  UNIQUE KEY `BookId_UNIQUE` (`BookId`),
  UNIQUE KEY `ISBN_UNIQUE` (`ISBN`),
  KEY `FK_Author_idx` (`AuthorId`),
  CONSTRAINT `FK_Author` FOREIGN KEY (`AuthorId`) REFERENCES `author` (`Author_Id`)
ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB AUTO_INCREMENT=12 DEFAULT CHARSET=utf8;

CREATE TABLE `transactions` (
  `Id` int(11) NOT NULL AUTO_INCREMENT,
  `BookTitle` varchar(60) NOT NULL,
  `UserName` varchar(50) NOT NULL,
  `Date_Borowed` date NOT NULL,
  `Date_Returned` date DEFAULT NULL,
  `Date_Due` date NOT NULL,
  PRIMARY KEY (`Id`),
  UNIQUE KEY `Id_UNIQUE` (`Id`),
  KEY `user_idx` (`UserName`),
  CONSTRAINT `user` FOREIGN KEY (`UserName`) REFERENCES `user` (`UserName`) ON
DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```
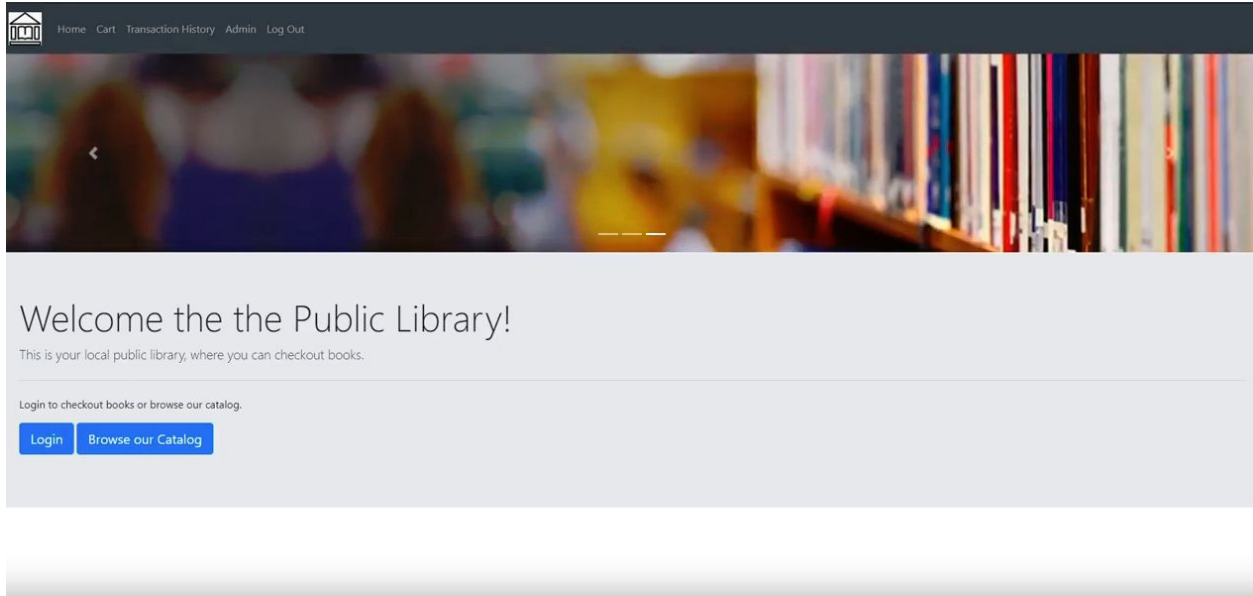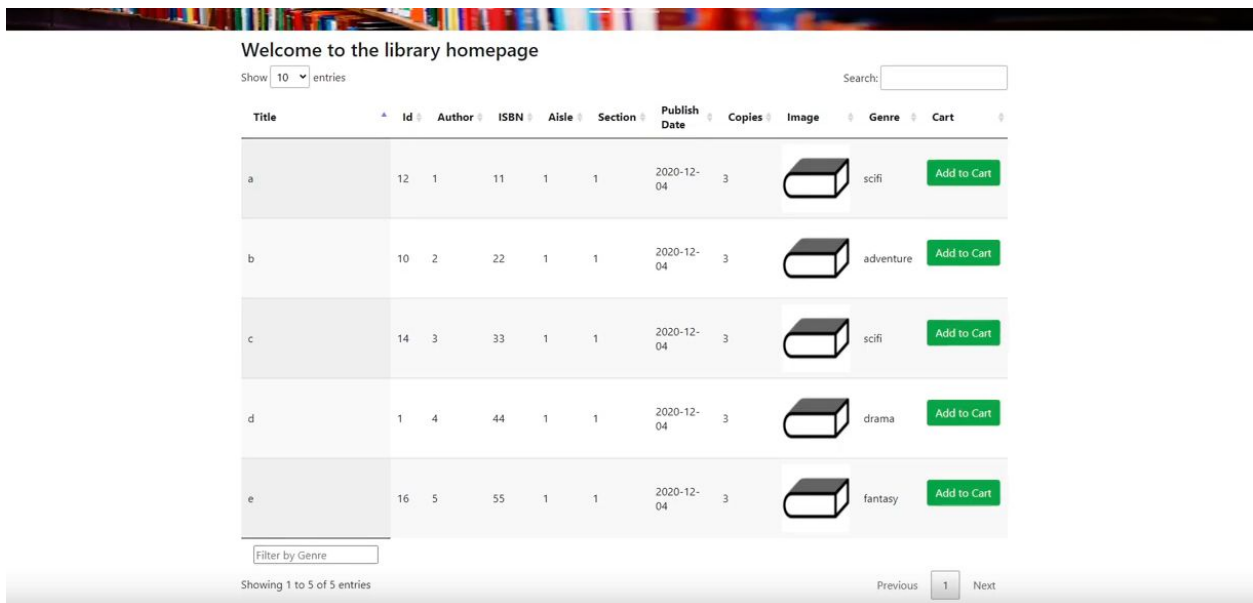
3. Language/Frameworks
● Application used jQuery and Bootstrap for front-end design, PHP was used for server side scripting, and SQL server was used for the back-end.

4. Screenshots

Welcome Page

Homepage

Login Page

username

password

Log In

Not Yet Registered?   Sign UP

Checkout Page

Checkout Cart

Checkout

a

Number of Copies: 1

Date borrowed: 2020-12-01

Due Date: 2020-12-15

Delete

Transaction History Page

Transaction History

Book Title: a

Date borrowed: 2020-12-03

Date due:2020-12-17

Date returned: 2020-12-14

Book Title: d

Date borrowed: 2020-12-03

Date due:2020-12-17

Date returned: 2020-12-14

Book Title: g

Date borrowed: 2020-12-03

Date due:2020-12-17

Date returned: 2020-12-14

Book Title: b

Date borrowed: 2020-12-01

Admin Page

Add New Book

Available Books

Show 10 ∨ entries   Search:

Title	ISBN	Aisle	Section	Genre	Status	Image
a	11	1	1	scifi	Checked Out	data:image/jpeg;base6
b	22	1	1	adventure	Checked Out	data:image/jpeg;base6
c	33	1	1	scifi	Checked Out	data:image/jpeg;base6
d	44	1	1	drama	Checked Out	data:image/jpeg;base6
eeeeeeeee	55	2	1	fantasy	Checked Out	

Showing 1 to 5 of 5 entries   Previous 1 Next

**Note: Sql screenshots available in the sql folder provided in the submission.

5. Member Contribution
- Keegan Kimbrell: Created homepage and all related functionality. Also connected the homepage to the cart through php. Discussed and approved changes to the database. Wrote a majority of the project report.
- Abdelmounaim Hafid: created cart and transaction/transaction history related html files and php and js scripts. Designed json structure for cart. Recorded video for submission.
- Pankaj Mishra: created initial db schema and is responsible for login, signup and admin related html file and php and js scripts.