

**CS315: Principles Of Database Systems**

**ERP SYSTEM FOR BHARATREADS  
(BOOK STORE)**

**GROUP MEMBERS:**

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**GROUP: G56**

## Purpose and Vision

BharatReads is a locally owned bookstore that buys and sells new and old books, both for sale as well as for rent. BharatReads has a vast collection of books of all types ranging from fiction, non-fiction, textbooks, academic journals, magazines and novels spanning across different genres. The “ERP system” replaces the traditional record keeping methods that used ledgers and registers and brings out a much more efficient and elegant way for managing and accessing the transaction records of the bookstore. At any given point of time, hundreds of book transactions, either in the form of purchases, sales or rentals happen between the customer and the bookstore staff. It helps in keeping track of all such transaction records of a customer of the bookstore. Before completing a transaction with the bookstore, the customer is required to make an account on the website. After that, all of his transactions are recorded there and can be accessed by the customer for future references. The system also allows the customers to remotely access information about the availability of old and new books for purchases or rentals. This in turn saves a lot of time and effort of the customer.

The website also incorporates staff functionality. Staff members have to register through their specific section. Staff member is responsible for processing all the sale transactions and rentals

# Database Design / ER Diagram

The database ‘bharatreads’ consists of 7 tables:

1. **Customers** : store info about customers
2. **newbook** : store info about new books
3. **oldbook** : store info about old books
4. **rentals** : store info about rental transactions of old books
5. **sales\_new** : store info about sales transactions of new books
6. **sales\_old** : store info about sales transactions of old books
7. **staff** : store info about staff members

```
mysql> describe rentals;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| cust_id | int | NO | MUL | NULL |
| book_id | int | NO | MUL | NULL |
| issue_time | timestamp | YES | | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
| due_time | timestamp | NO | | NULL |
| total_price | int | NO | | NULL |
| staff_id | int | NO | MUL | NULL |
| submission_time | timestamp | YES | | NULL |
| staff_id_submit | int | YES | MUL | NULL |
| status | varchar(100) | YES | | NULL |
+-----+-----+-----+-----+-----+
10 rows in set (0.01 sec)

mysql> describe sales_old;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| book_id | int | NO | MUL | NULL |
| time | timestamp | YES | | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
| cust_id | int | NO | MUL | NULL |
| staff_id | int | NO | MUL | NULL |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> describe sales_new;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| book_id | int | NO | MUL | NULL |
| time | timestamp | YES | | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
| cust_id | int | NO | MUL | NULL |
| staff_id | int | NO | MUL | NULL |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> describe customers;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
name	varchar(50)	NO		NULL	
username	varchar(50)	NO		NULL	
password	varchar(255)	NO		NULL	
contact_no	char(10)	YES		NULL	

```
5 rows in set (0.36 sec)
```

```
mysql> describe oldbook;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
title	varchar(100)	NO		NULL	
author	varchar(100)	NO		NULL	
edition	int	YES		NULL	
genre	varchar(100)	YES		NULL	
sale_price	int	NO		NULL	
cost_price	int	NO		NULL	
rental_price	int	NO		NULL	
purchase_staff_id	int	NO	MUL	NULL	
purchase_cust_id	int	NO	MUL	NULL	
status	varchar(100)	NO		NULL	

```
11 rows in set (0.00 sec)
```

```
mysql> describe newbook;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
title	varchar(100)	NO		NULL	
author	varchar(100)	NO		NULL	
edition	int	YES		NULL	
genre	varchar(100)	YES		NULL	
sale_price	int	NO		NULL	
status	varchar(100)	NO		NULL	

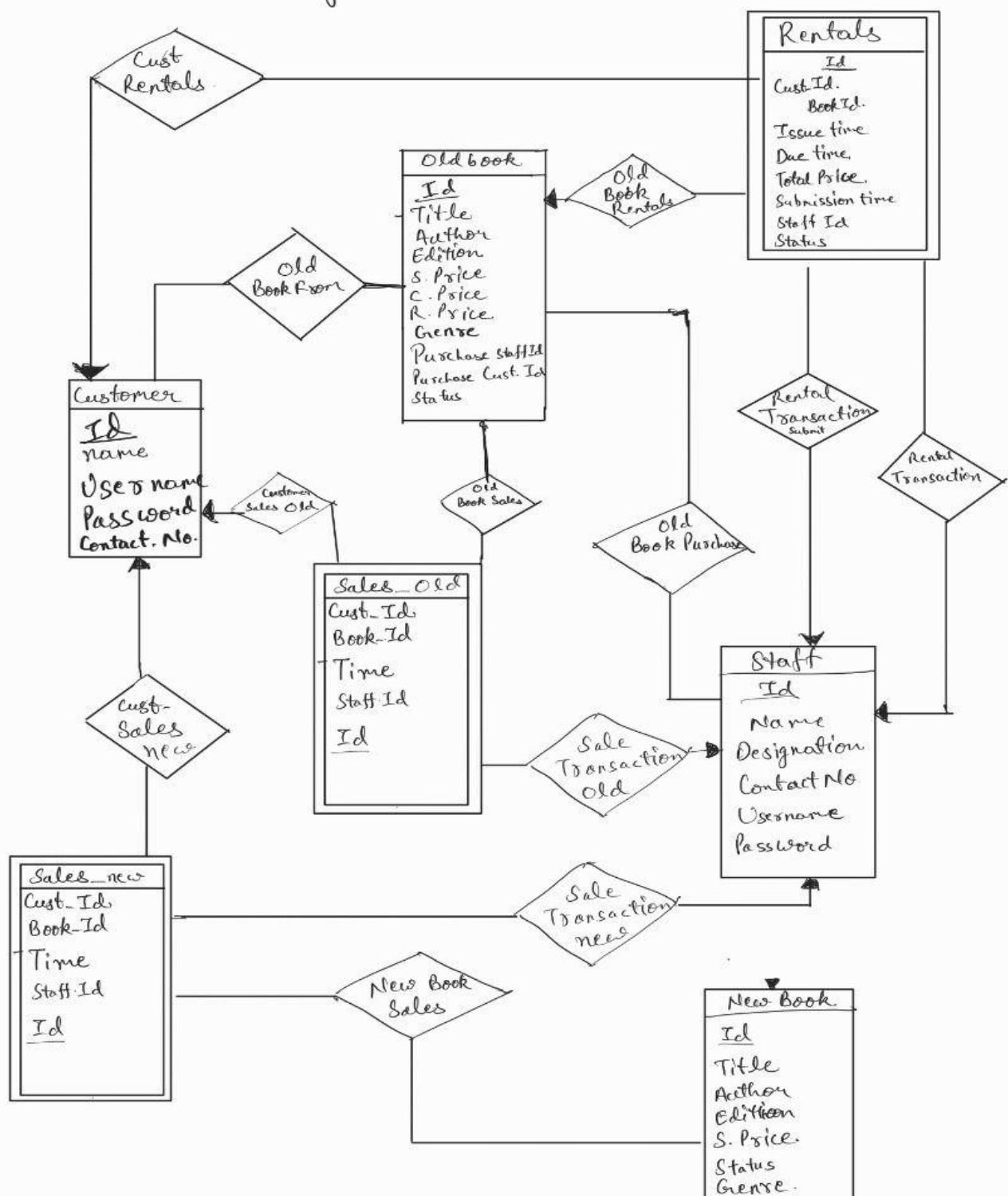
```
7 rows in set (0.00 sec)
```

```
mysql> describe staff;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
name	varchar(50)	NO		NULL	
username	varchar(50)	NO		NULL	
password	varchar(255)	NO		NULL	
designation	varchar(50)	NO		NULL	
contact_no	char(10)	YES		NULL	

6 rows in set (0.00 sec)

# E-R Diagram for Bharat Reads ERP Systems.



# **Users,their Use Cases and Functionality**

The ERP system will consist of 2 kinds of registered users

**1) Customers :** Customers can register themselves through register page and then can login with their credentials. After registering they can see their customer ID allotted to them by the system which will be essential for future transactions and rentals. All the registered customers can :

- a) Browse for all the new and old books ,check their availability status. They can search for the books by title , genre , author , edition, status,book id
- b) See all previous books(old and new) the user had bought along with the transaction details like time of the transaction, price, name of the staff who processed the transaction,.
- c) See details of all previous rentals a user was involved in and the rental details like issue time,due time submission time , status , staff name,total price(depending on the duration ) etc.
- d) See all previous transactions wherein a particular user sold the book (second-hand/old book) along with the price details
- e) Check their profile details like name,username,contact no. ,customer Id( which will be essential for future rentals and transactions)

**2) Staff/Employee:** Staff members can only be registered by existing staff member. After registration they can login with their username and password and can find their staff Id allotted by the system. All the staff members of the Book store can :

- a) Add new book to the stock by entering book details and setting the sales price of the new book . New book id would be provided by the system
- b) Process transaction of buying second-hand/old books from customers and setting up the selling price and weekly rental price for the old book . Old book Id would be provided by the system.

- c) Process sale transaction of old book by entering customer id and old book id.
- d) Process sale transaction of new book by entering customer id and new book id
- e) Process Rentals of Old Book by entering book id, customer id and duration (1,2,3 or 4 weeks). Total price would be set up accordingly by the system
- f) Register a new staff member
- g) Check profile details including name , contact no. , username, staff id, designation

Customers can browse for the availability of their desired book online by logging in to the system and can find book id for their desired book . They can then easily fetch the book from the book store by book id (book id provided by the system would be tagged on the book by stickers). The staff member sitting on the counter can then process the rental/sales transaction of the given book and customer id.

## Front-End and Back-End

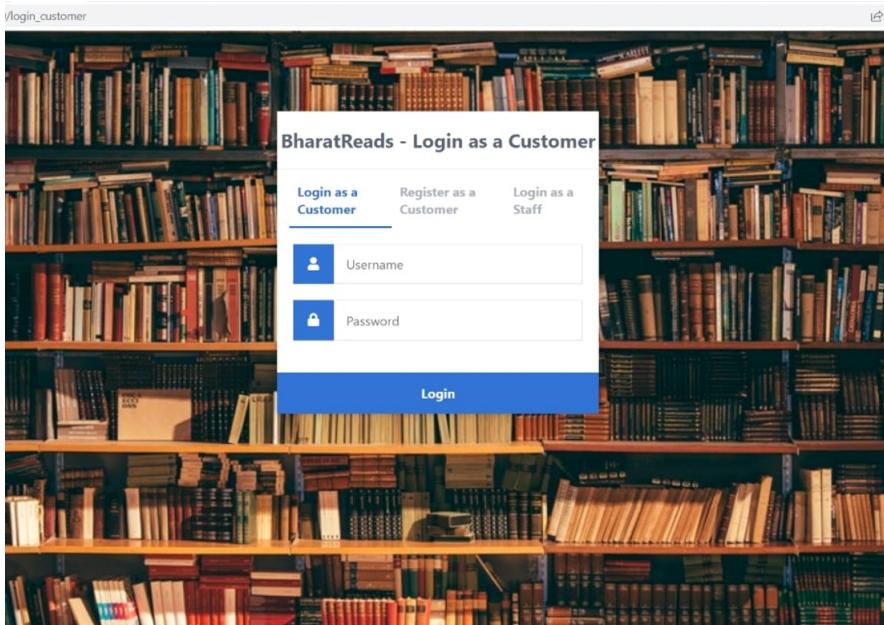
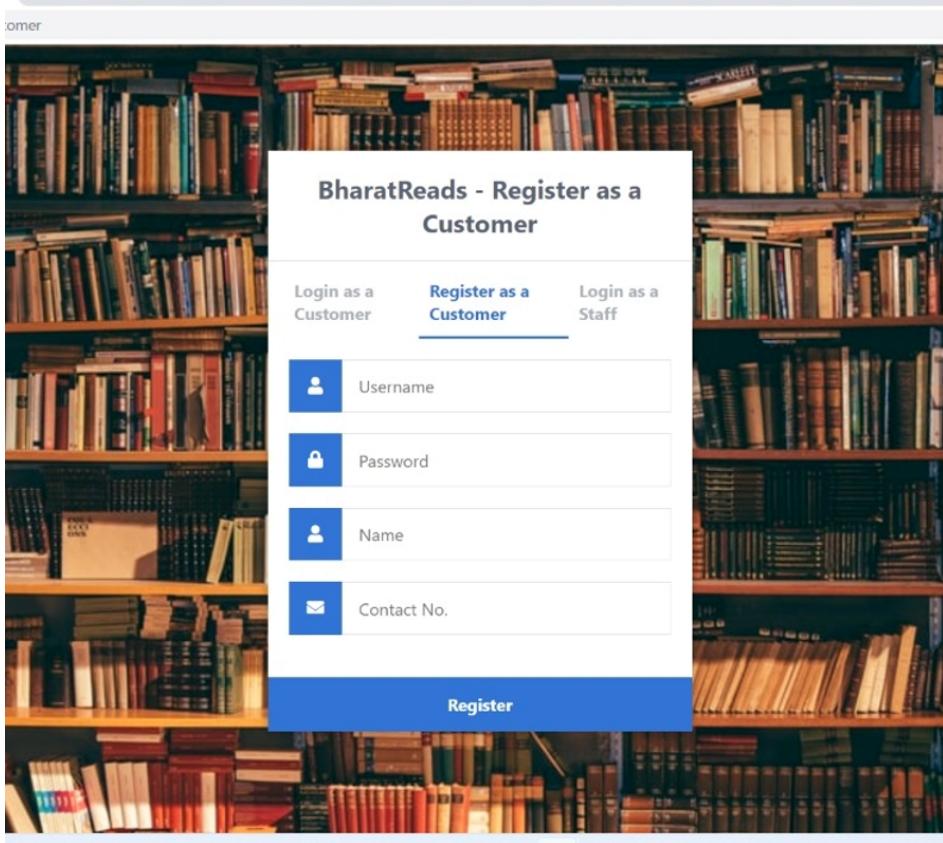
**Front-End :** Normal HTML and CSS has been used for the front-end

**Back-End :** Back-end is implemented in Python (Flask) using flask\_mysqldb to link database

**Database :** MYSQL is used as the relational database for our app

## ScreenShots Of the App

### 1. Login/Register Page



## 2. Staff Dashboard

On Login As Staff one Will be taken to Staff Dashboard, Where the staff can add new book to stock, Buy an old book from seller (a registered customer), Process Rentals, Accept submission of rented books, Record the transaction of sale of new and old books, And Register a new staff.

**BharatReads - Staff Dashboard**

*Fill out the details to buy old book(s)*

SHAYAN UL HAQ

- Add New Book
- Buy Old Book
- Process Rentals
- Rental Submission
- Process sales transaction of Old Book
- Process sales transaction of New Book
- Register Staff
- My Profile
- Log out

Death on The Nile

Agatha Christie

Mystery/Suspense

Edition

450

200

35

7

Add to stock

94°F Clear 20:24 11-04-2022

**BharatReads - Staff Dashboard**

*Fill out the details to add new book(s)*

SHAYAN UL HAQ

- Add New Book
- Buy Old Book
- Process Rentals
- Rental Submission
- Process sales transaction of Old Book
- Process sales transaction of New Book
- Register Staff
- My Profile
- Log out

Harry Potter and Chamber of Secrets

J.K. Rowling

Fiction

Edition

250

Add to stock

94°F Clear 20:23 11-04-2022

**Fill out the details to process rental of an old book**[Add New Book](#)[Buy Old Book](#)[Process Rentals](#)[Rental Submission](#)[Process sales transaction  
of Old Book](#)[Process sales transaction  
of New Book](#)[Register Staff](#)[My Profile](#)[Log out](#)94°F  
Clear Customer ID Old Book ID Duration (No. of Weeks) ▾ Submit20:25  
11-04-2022**Fill out the details for rental submission of old book**[Add New Book](#)[Buy Old Book](#)[Process Rentals](#)[Rental Submission](#)[Process sales transaction  
of Old Book](#)[Process sales transaction  
of New Book](#)[Register Staff](#)[My Profile](#)[Log out](#)94°F  
Clear Old Book ID Submit20:26  
11-04-2022

**Fill out the details to process sales transaction of a new book**

- Add New Book
- Buy Old Book
- Process Rentals
- Rental Submission
- Process sales transaction of Old Book
- Process sales transaction of New Book
- Register Staff
- My Profile
- Log out

localhost:5000/new\_book\_sales

 Customer ID New Book ID Submit

94°F Clear 2026 11-04-2022

**Fill out the details to register new staff member**

- Add New Book
- Buy Old Book
- Process Rentals
- Rental Submission
- Process sales transaction of Old Book
- Process sales transaction of New Book
- Register Staff
- My Profile
- Log out

localhost:5000/register\_staff

<input type="text"/>	Username
<input type="text"/>	Password
<input type="text"/>	Name
<input type="text"/>	Contact No.
<input type="text"/>	Designation

 Register

94°F Clear 2026 11-04-2022

**BharatReads - Staff Dashboard**

*Fill out the details to process sales transaction of old book*

**SHAYAN UL HAQ**

- Add New Book
- Buy Old Book
- Process Rentals
- Rental Submission
- Process sales transaction of Old Book**
- Process sales transaction of New Book
- Register Staff
- My Profile
- Log out

Customer ID  
Old Book ID  
Submit

**BharatReads - Staff Dashboard**

*Your details*

**SHAYAN UL HAQ**

- Add New Book
- Buy Old Book
- Process Rentals
- Process sales transaction of Old Book
- Process sales transaction of New Book
- Register Staff
- My Profile**
- Log out

Staff Id: 1  
Name: Shayan Ul Haq  
Username: shayan  
Designation: CEO  
Contact No.: 8290709732

### 3. Customer DashBoard

On login as a Customer one can Browse new and old books, see his/her rentals, see past purchases of old and new books, see the old books which he/she sold, and see the profile.

**PARAG**

**BharatReads - Customer Dashboard**

Title
Author
Status
Genre
Edition

Book ID
Search for new books

Found 5 book(s)

New Book Id	Title	Author	Genre	Edition	Status	Sale Price
1	Database System Concepts	Silberschatz	Educational	7	AVAILABLE	11567
2	Atomic Habits	James Clear	Non Fiction	0	SOLD	250
3	Mathematics	R.D. Sharma	Educational	9	AVAILABLE	450
4	To kill a Mocking Bird	Harper Lee	Fiction	1	AVAILABLE	1400
5	Harry Potter and Chamber of Secrets	J.K. Rowling	Fiction	0	AVAILABLE	250

94°F  
Clear

2027 11-04-2022

**SHAYAN UL HAQ**

**BharatReads - Customer Dashboard**

### Your Rentals

Rental Id	Old Book Id	Title	Author	Genre	Edition	Total price	Issue time	Due time	Submission time	Rental status	Issuing staff	Submission staff
7	2	Concepts of Physics	H. C. Verma	Educational	1	50	2022-04-11 12:27:48	2022-04-25 12:27:48	None	ACTIVE	naman	None
5	2	Concepts of Physics	H. C. Verma	Educational	1	25	2022-04-03 18:31:39	2022-04-10 18:31:39	2022-04-05 19:44:23	INACTIVE	Shayan Ul Haq	M.S. Dhoni

94°F  
Clear

20:30 11-04-2022

The screenshot shows a web browser window with the URL [localhost:5000/browse\\_old\\_books/](http://localhost:5000/browse_old_books/). The page title is "BharatReads - Customer Dashboard". On the left, there is a sidebar with links: "Browse old books", "Browse new books", "My Rentals", "My New Book Purchases", "My Old Book Purchases", "My Sales", "My Profile", and "Log out". The main content area has a search interface with input fields for "Title", "Author", "Status", "Genre", "Edition", and "Book ID", followed by a "Search for old books" button. Below the search interface, a message says "Found 5 book(s)". A table displays the following data:

Old Book Id	Title	Author	Genre	Edition	Status	Rental Price (INR / week)	Sale Price
1	Mathematics	R.D Sharma	Educational	10	SOLD	50	500
2	Concepts of Physics	H. C. Verma	Educational	1	ON RENT	25	400
3	Harry Potter and Sorcerer's Stone	J K. Rowling	Fiction	0	AVAILABLE	100	1999
4	To kill a Mocking bird	Harper Lee	Fiction	0	AVAILABLE	50	1000
5	Death on the Nile	Agatha Christie	Mystery/Suspense	0	AVAILABLE	35	450

## Your New Book Purchases

New Book Sales Transaction Id	New Book Id	Title	Author	Genre	Edition	Sales Price	Time	Staff Name
1	1	Database System Concepts	Silberschatz	Educational	7	11567	2022-03-31 00:25:33	Shayan Ul Haq

Browse old books

Browse new books

My Rentals

My New Book Purchases

My Old Book Purchases

My Sales

My Profile

Log out

94°F  
Clear20:28  
11-04-2022

## Your Old Book Sales

Old Book Id	Title	Author	Genre	Edition	Cost Price	Rental Price (INR / week)	Sales Price	Staff Name
5	Death on The Nile	Agatha Christie	Mystery/Suspense	0	200	35	450	Shayan Ul Haq
2	Concepts of Physics	H. C. Verma	Educational	1	250	25	400	Shayan Ul Haq

Browse old books

Browse new books

My Rentals

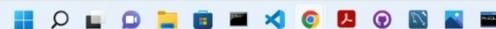
My New Book Purchases

My Old Book Purchases

My Sales

My Profile

Log out

94°F  
Clear20:28  
11-04-2022

CS34 | CS34- | 8182 | BI | Naac | Login | Profil | IITK | SQL II | Cour | CS 31 | Exam | GT 87 | SRH | (1) Wi | Welc | Welc | Welc | +

localhost:5000/customer\_profile

## PARAG

### BharatReads - Customer Dashboard

**Your details**

*Customer Id:7*  
Name: Parag  
Username: parag  
Contact No.: 1234567890

Browse old books  
Browse new books  
My Rentals  
My New Book Purchases  
My Old Book Purchases  
My Sales  
My Profile  
Log out

94°F  
Clear

20:28  
11-04-2022