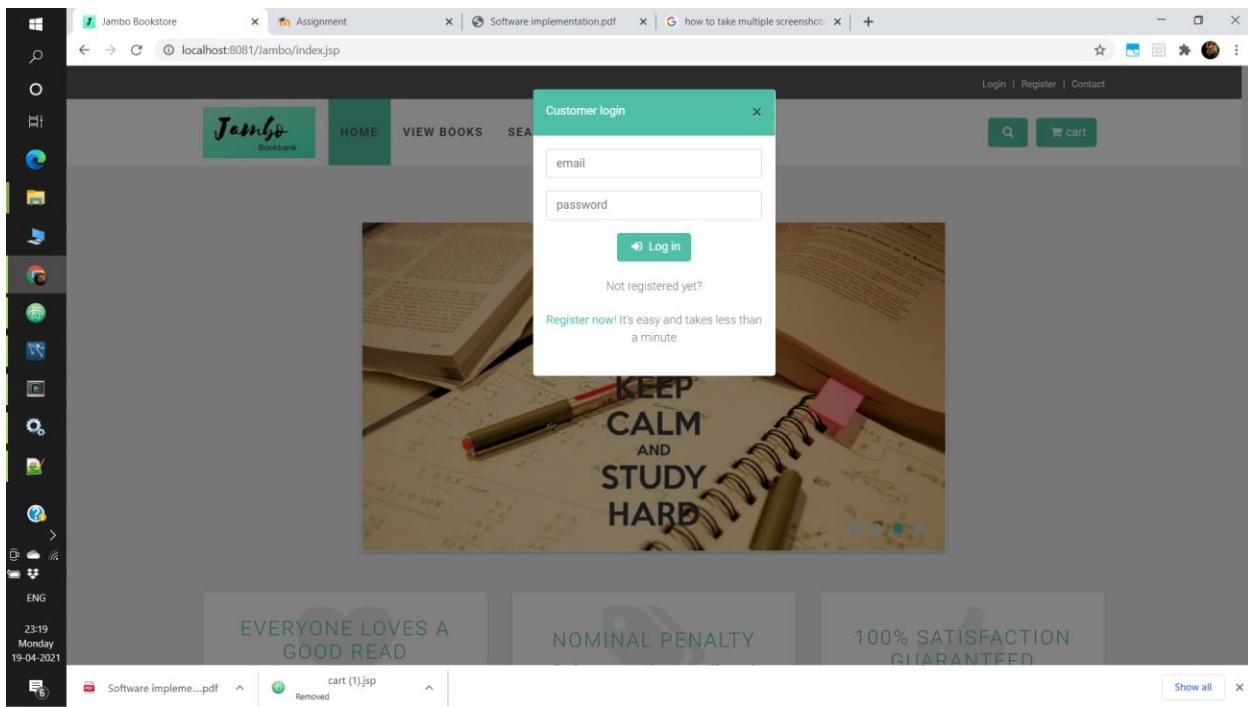
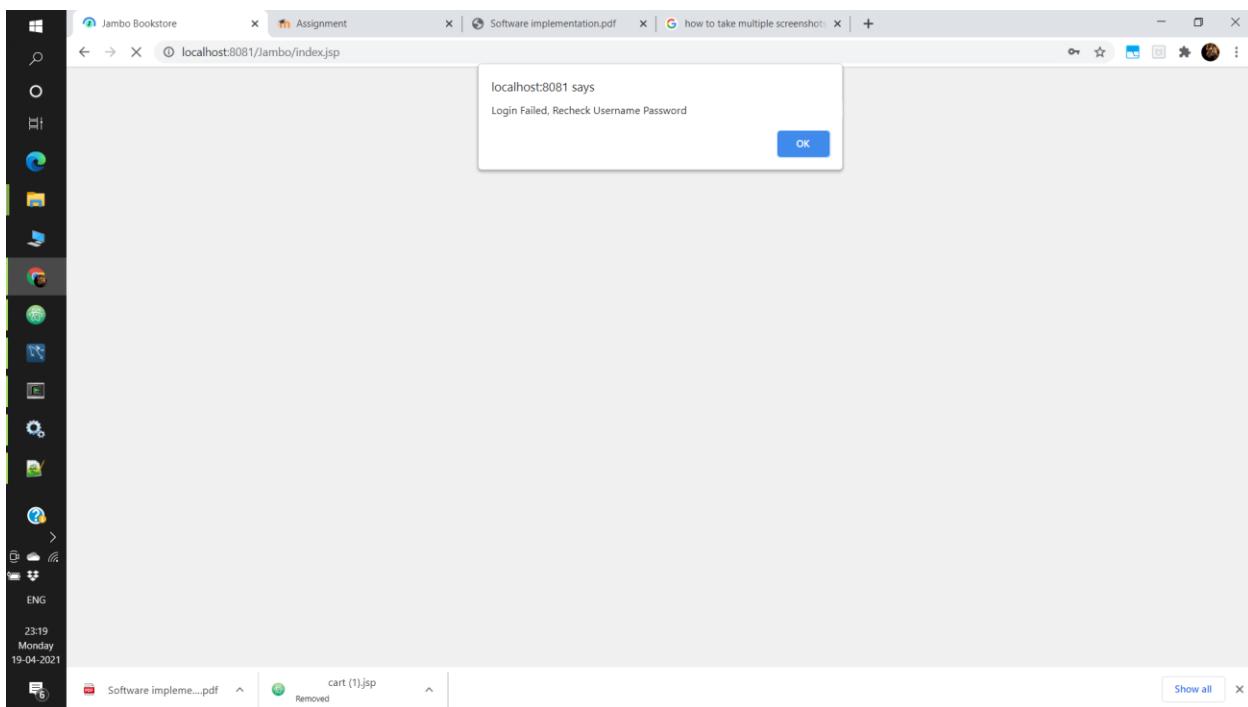


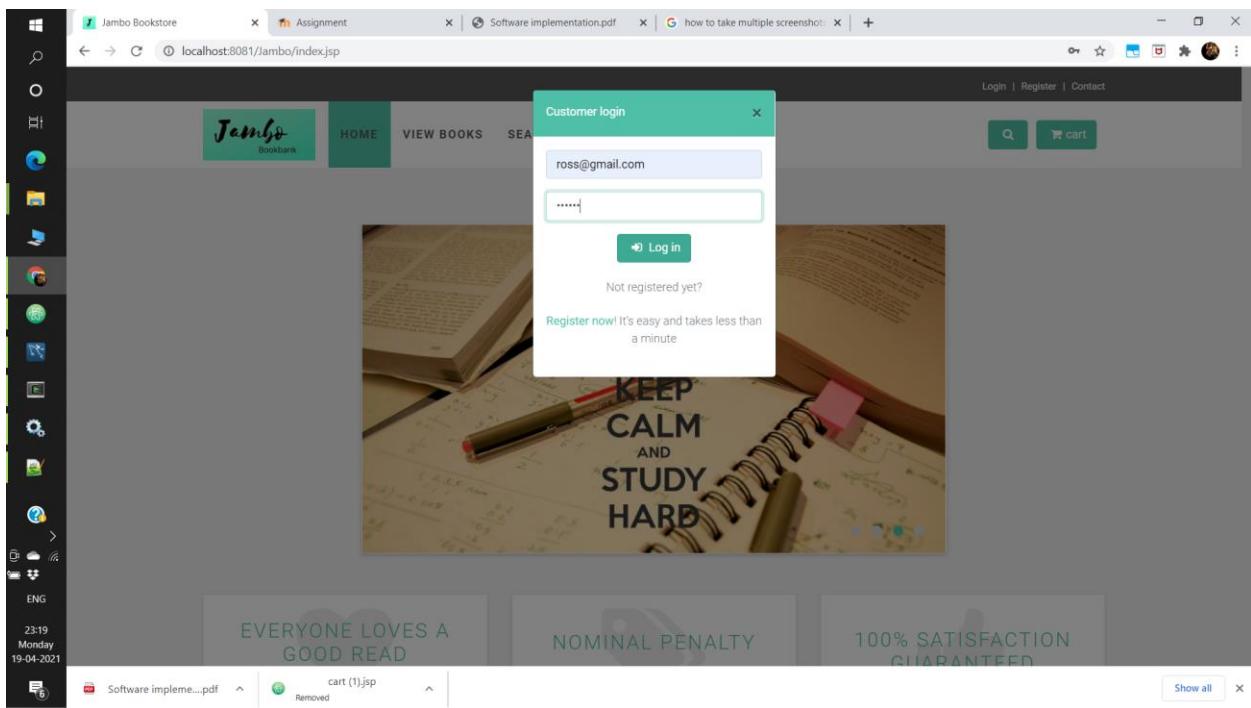
1. The opening page of the website.



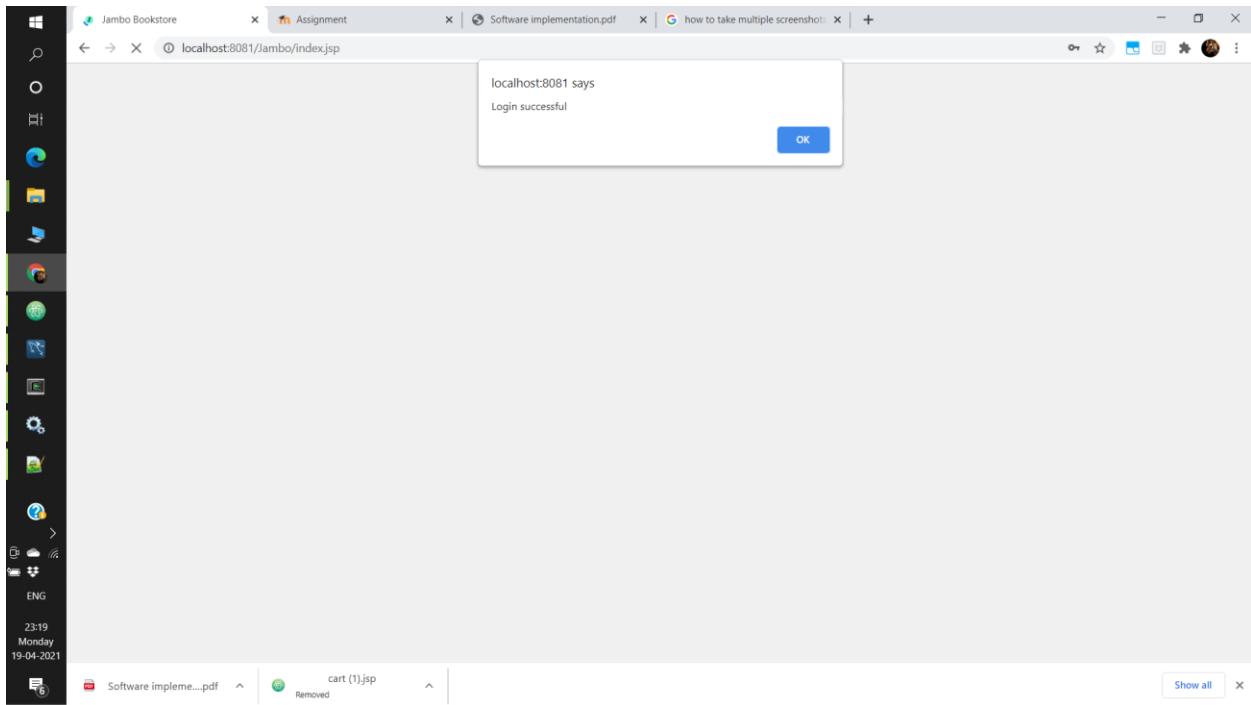
2. Login page.



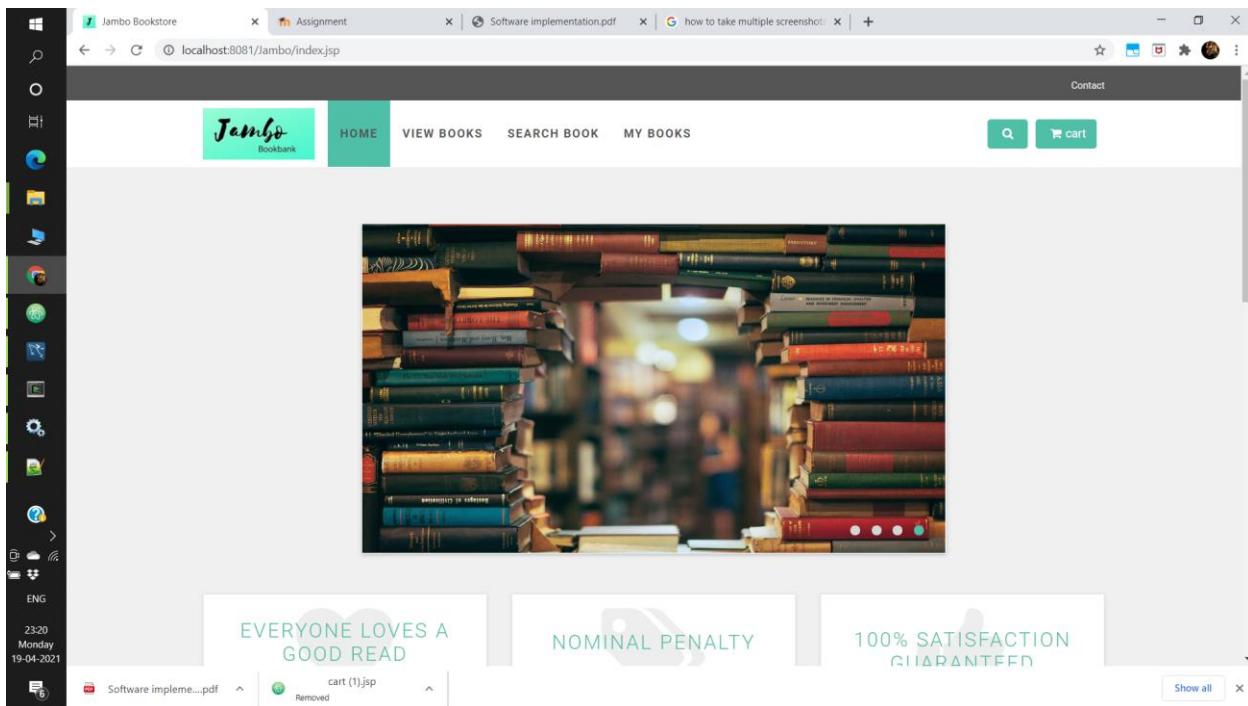
3. Login failure



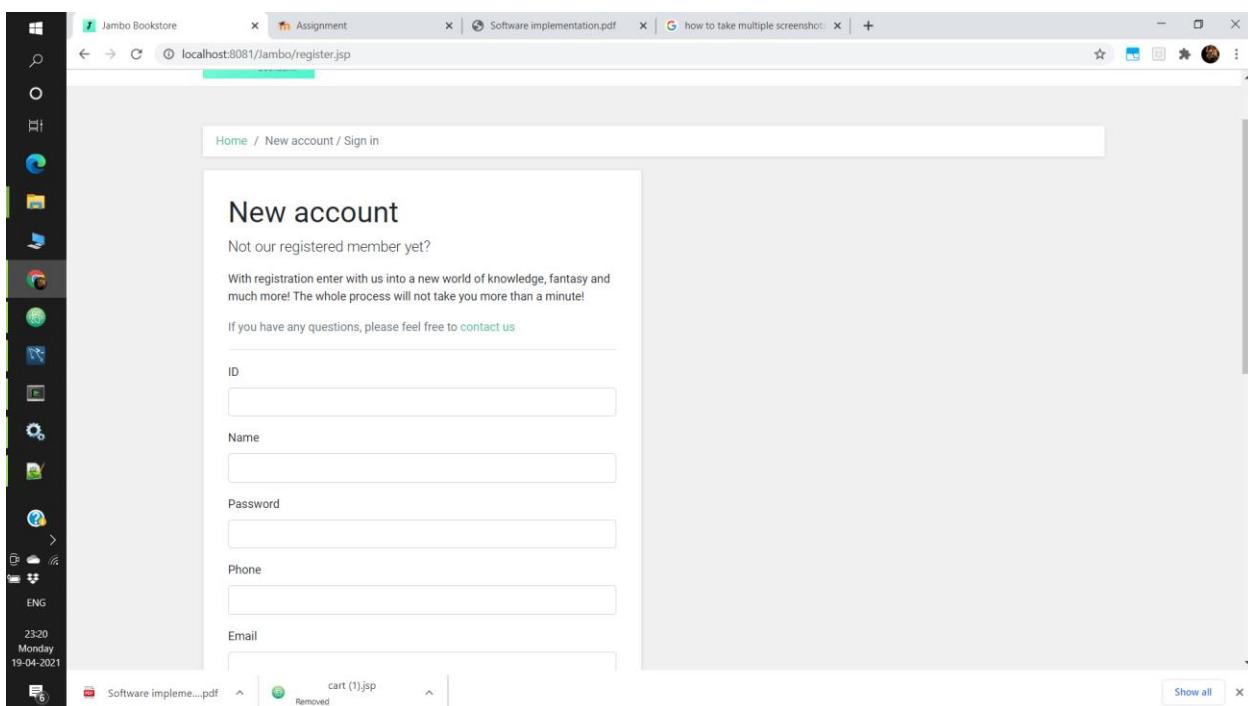
4. Successful login



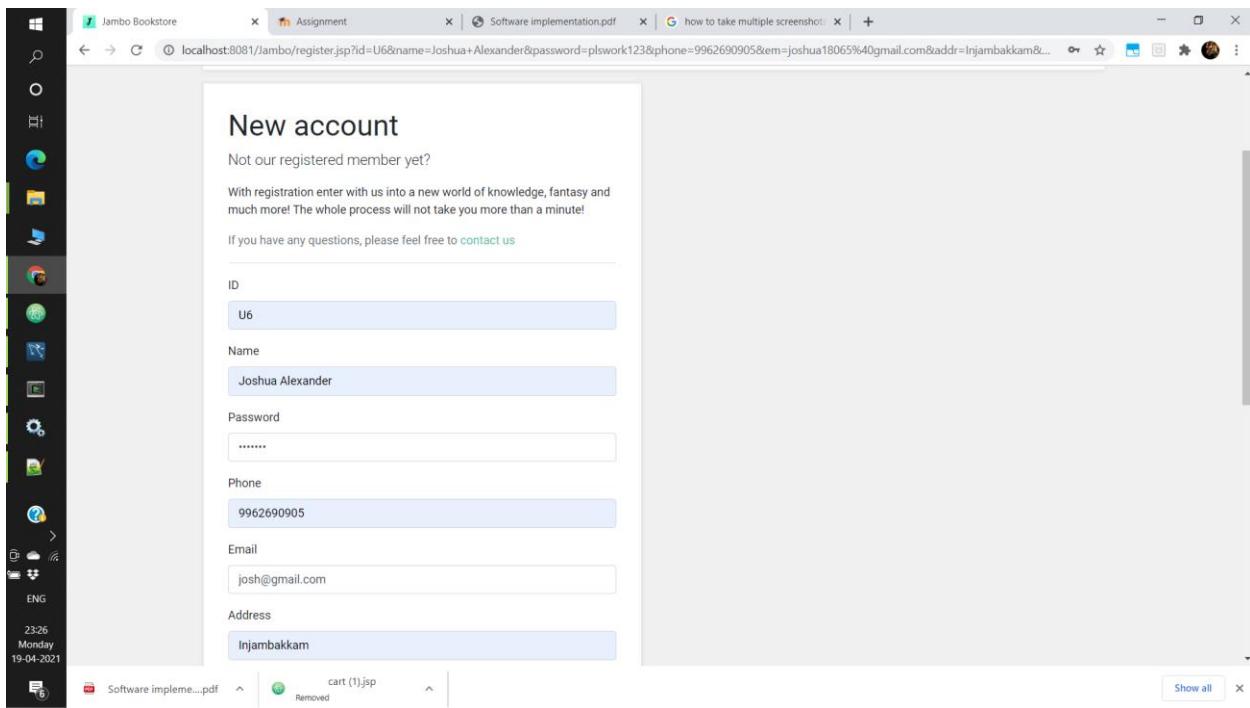
5. After successful login



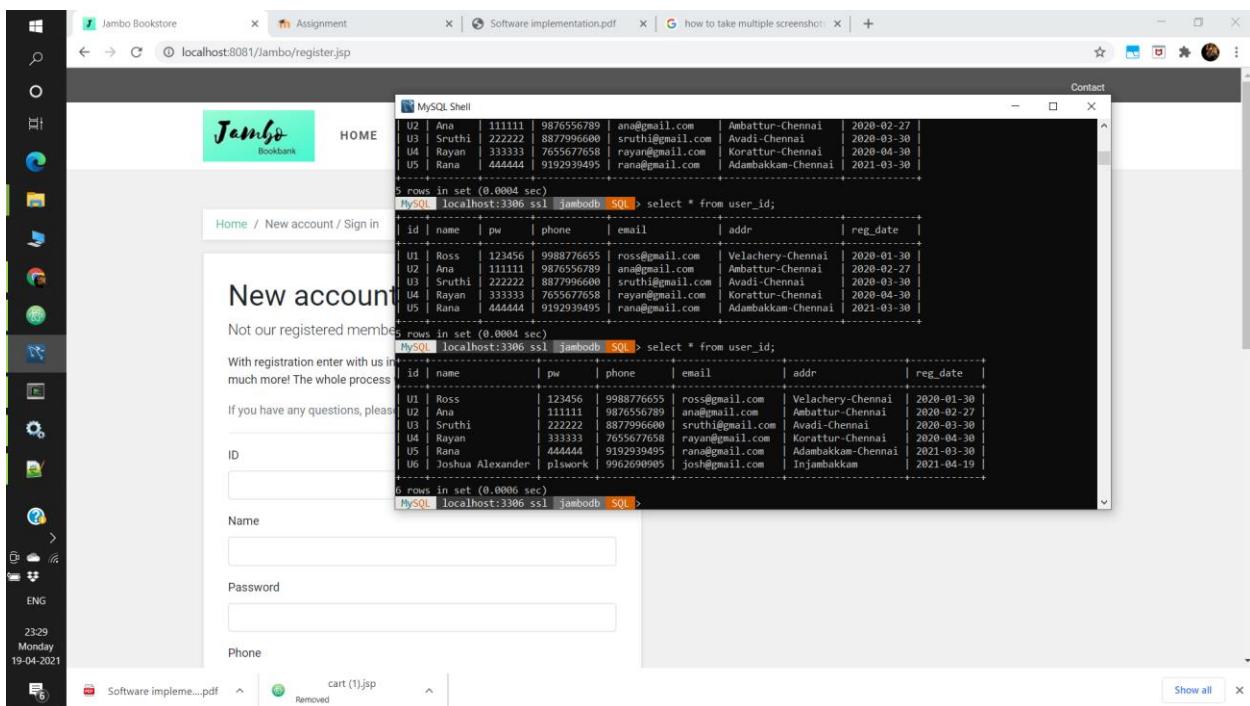
6. Redirected main page after successful login.



7. New account registration page



8. Registration page with the details filled.



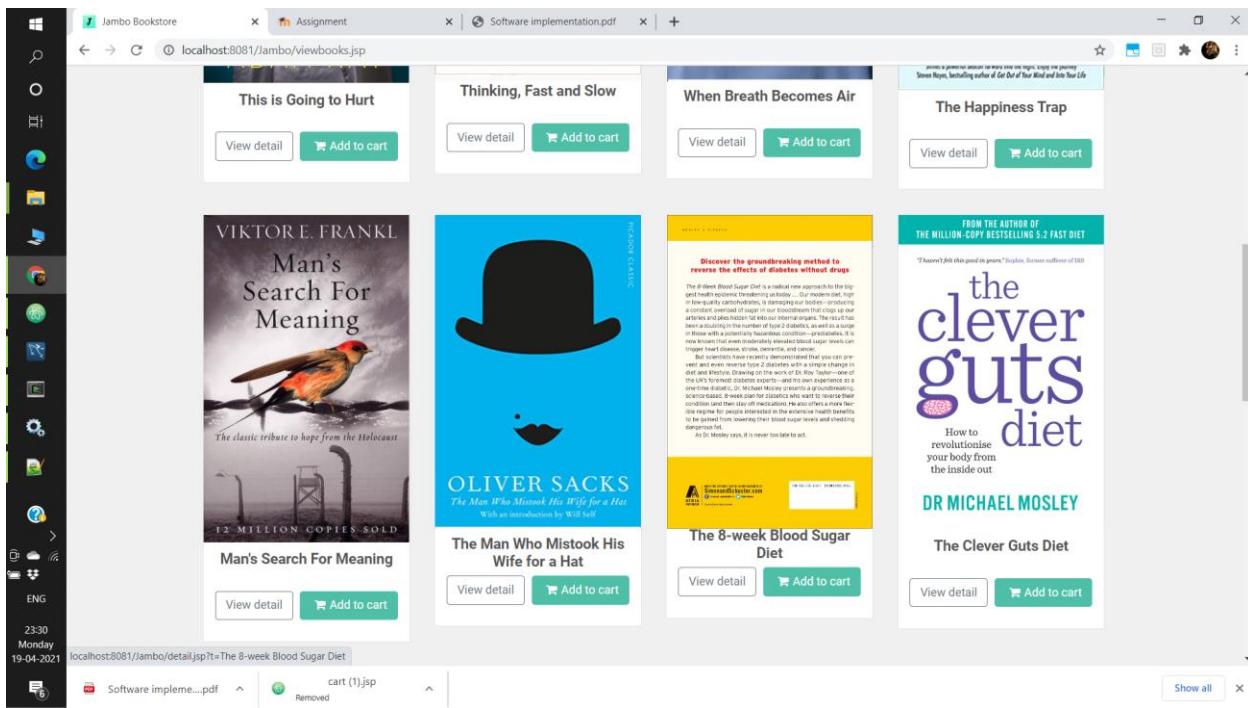
9. Modification in the database table after addition of the new user.

The screenshot shows the homepage of the Jambo Bookstore. At the top, there are three promotional boxes: "EVERYONE LOVES A GOOD READ" (Reading sharpens the mind. Grab one and plunge into an unimaginable adventure), "NOMINAL PENALTY" (Books not returned or renewed beyond 20days of borrowing pay only 10rs/day), and "100% SATISFACTION GUARANTEED" (Books never let you feeling low!). Below these is a section titled "NEW RELEASES" featuring five book covers: "THIS IS GOING TO HURT" by Adam Kay, "Thinking, Fast and Slow" by Daniel Kahneman, "When Breath Becomes Air" by Paul Kalanithi, "The Happiness Trap" by Russ Harris, and "Man's Search For Meaning" by Viktor E. Frankl. The browser status bar shows the URL "localhost:8081/jambo/index.jsp".

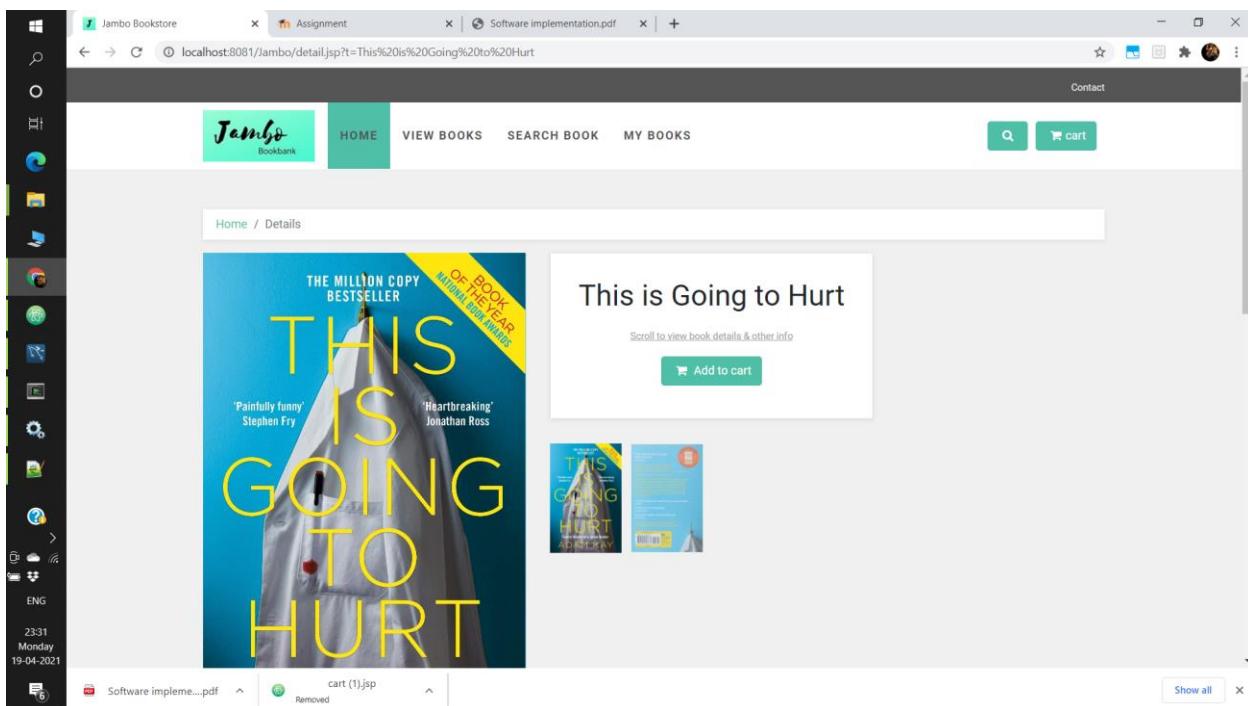
10. Main page continuation

The screenshot shows the "View Books" page of the Jambo Bookstore. The header includes the logo "Jambo Bookbank", navigation links for "HOME", "VIEW BOOKS" (which is active and highlighted in green), "SEARCH BOOK", and "MY BOOKS". There is also a search icon and a cart icon showing "cart (1).jsp". The main content area is titled "All Books" and features a sub-header: "The Widest range of books always at your disposal at Jambo Bookbank". Below this are four book covers: "THIS IS GOING TO HURT" by Adam Kay, "Thinking, Fast and Slow" by Daniel Kahneman, "WHEN BREATH BECOMES AIR" by Paul Kalanithi, and "The Happiness Trap" by Russ Harris. The browser status bar shows the URL "localhost:8081/jambo/viewbooks.jsp".

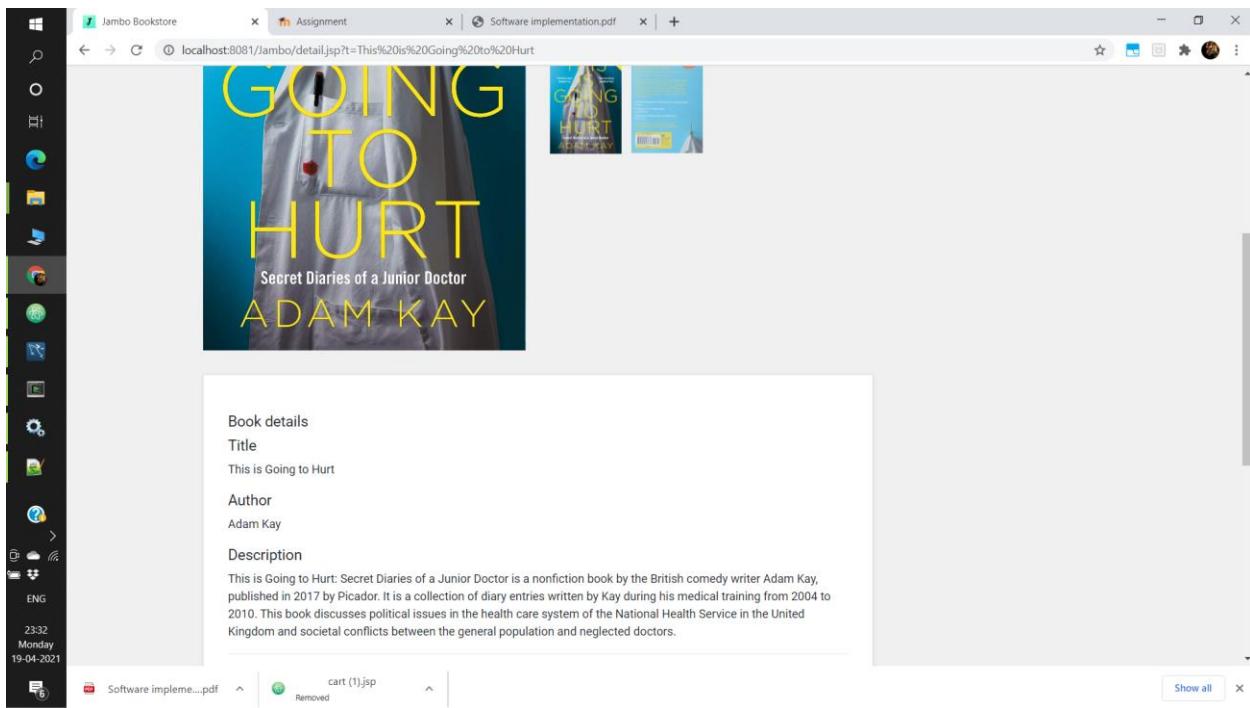
11. View All option page where all the books are displayed.



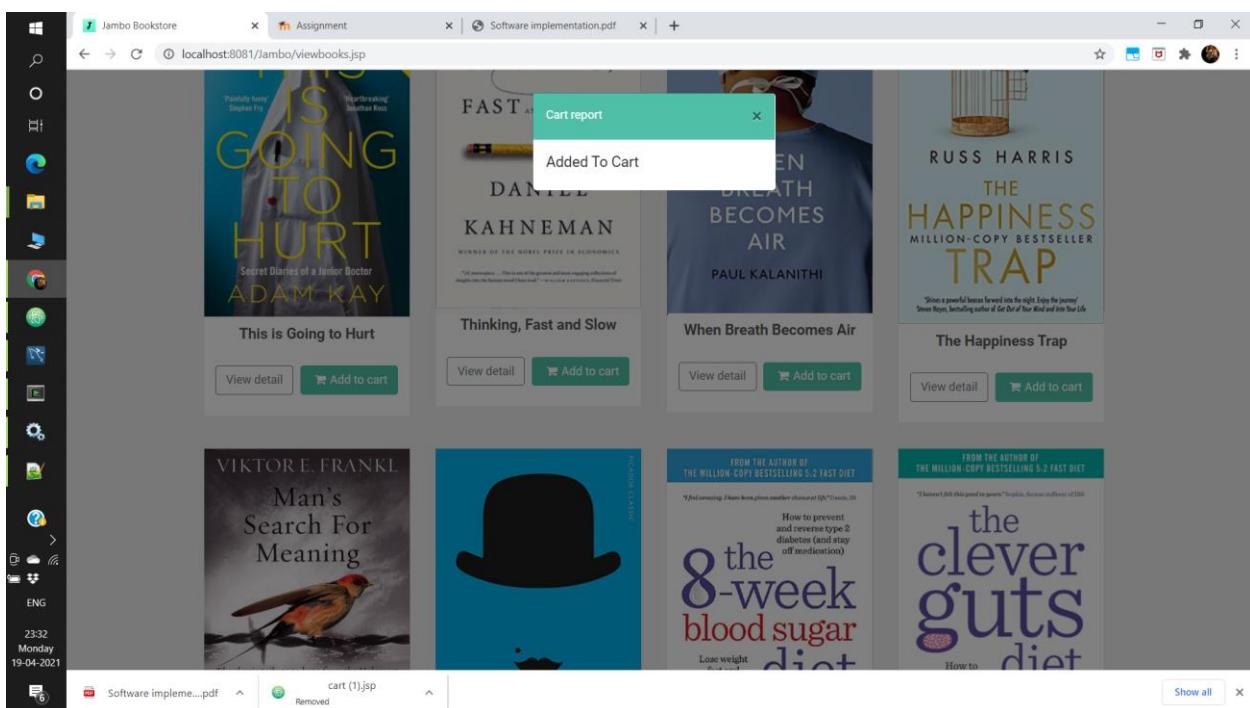
12. View All page continuation.



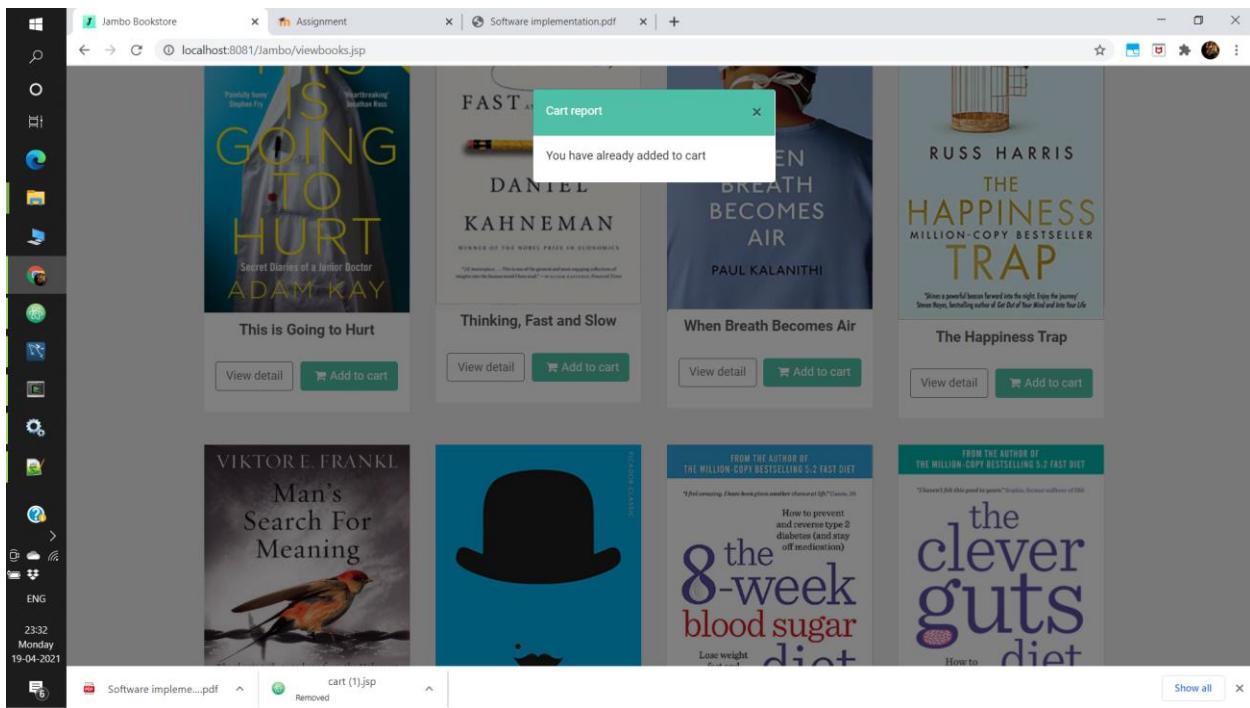
13. The view details page of a particular book.



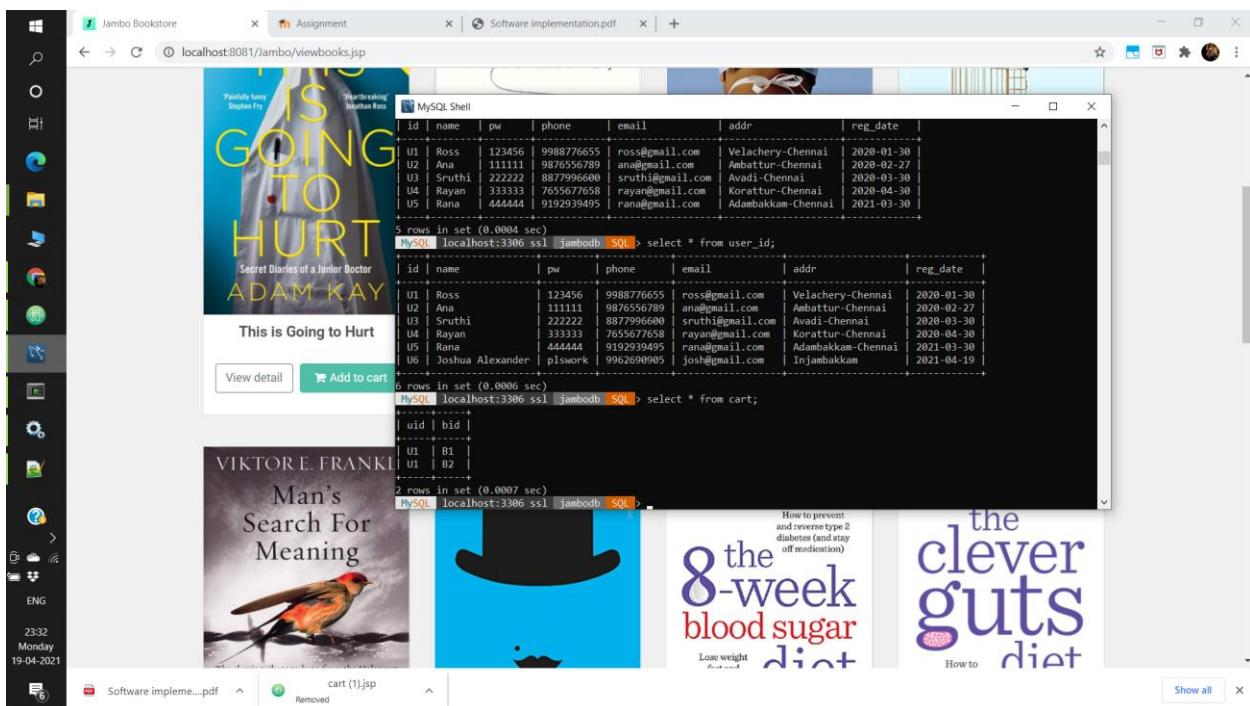
14. Continuation of the view details page of the same book.



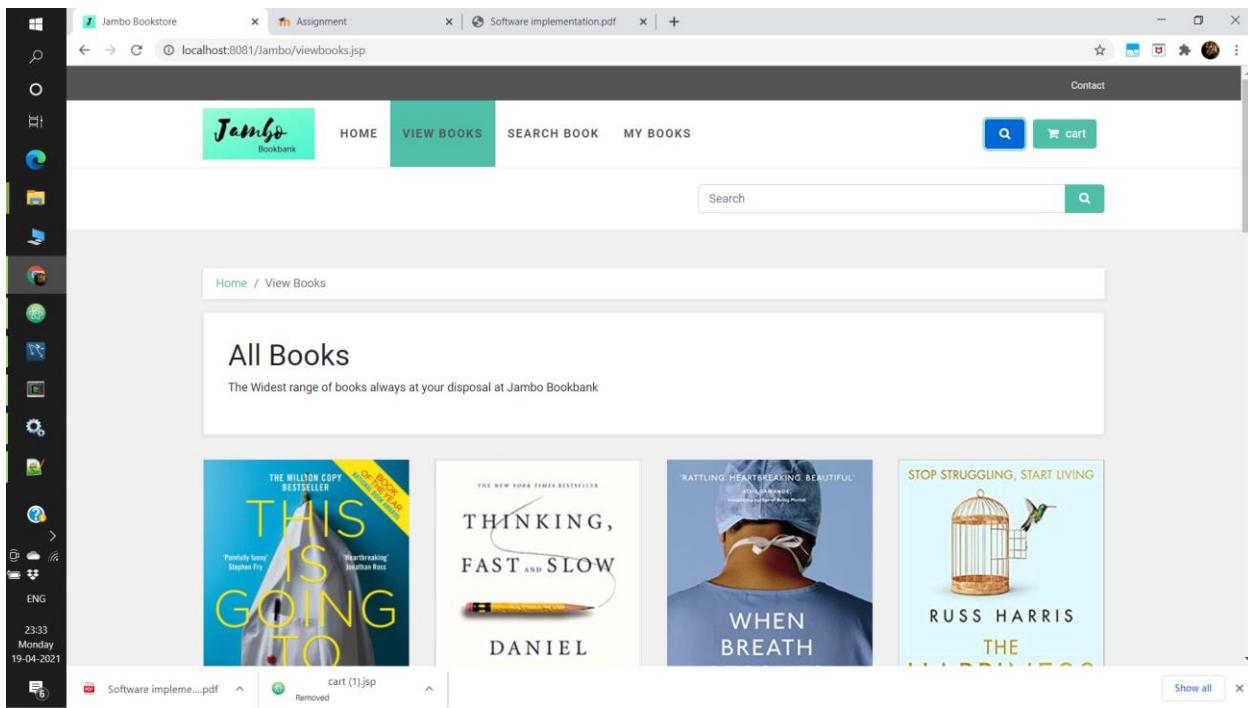
15. Cart page after adding a book.



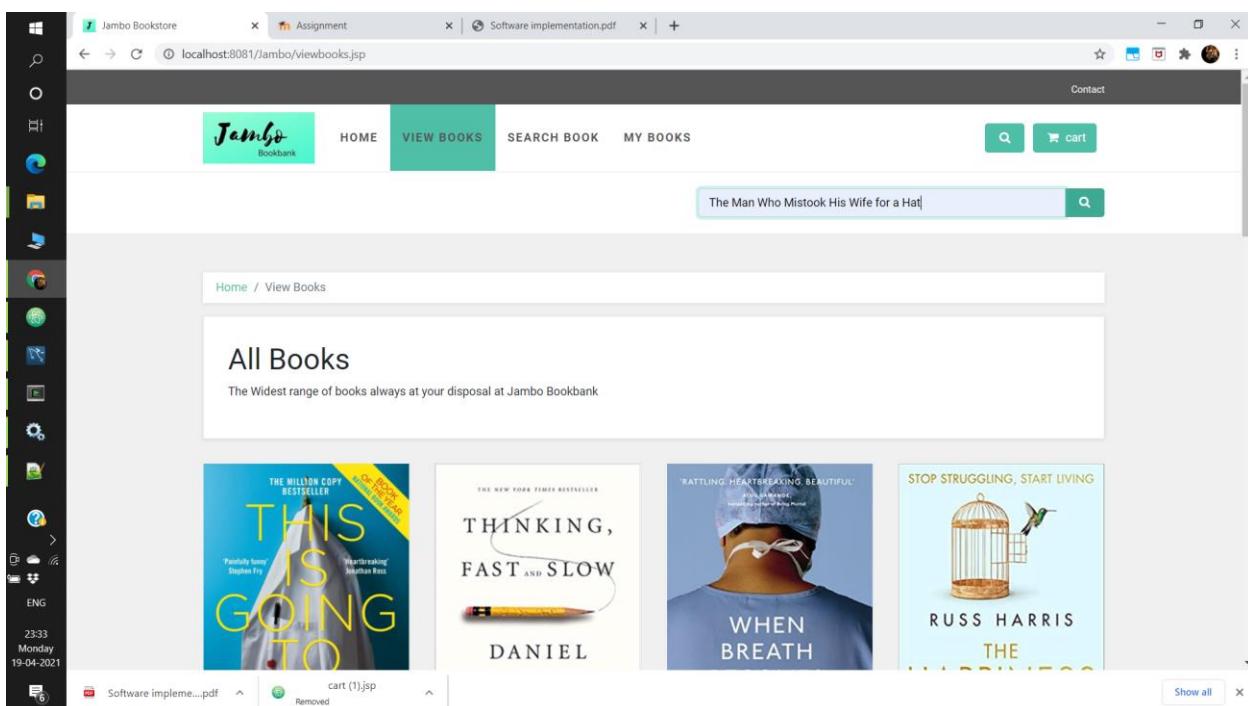
16. Cart page after trying to add a book which has already been added to the cart.



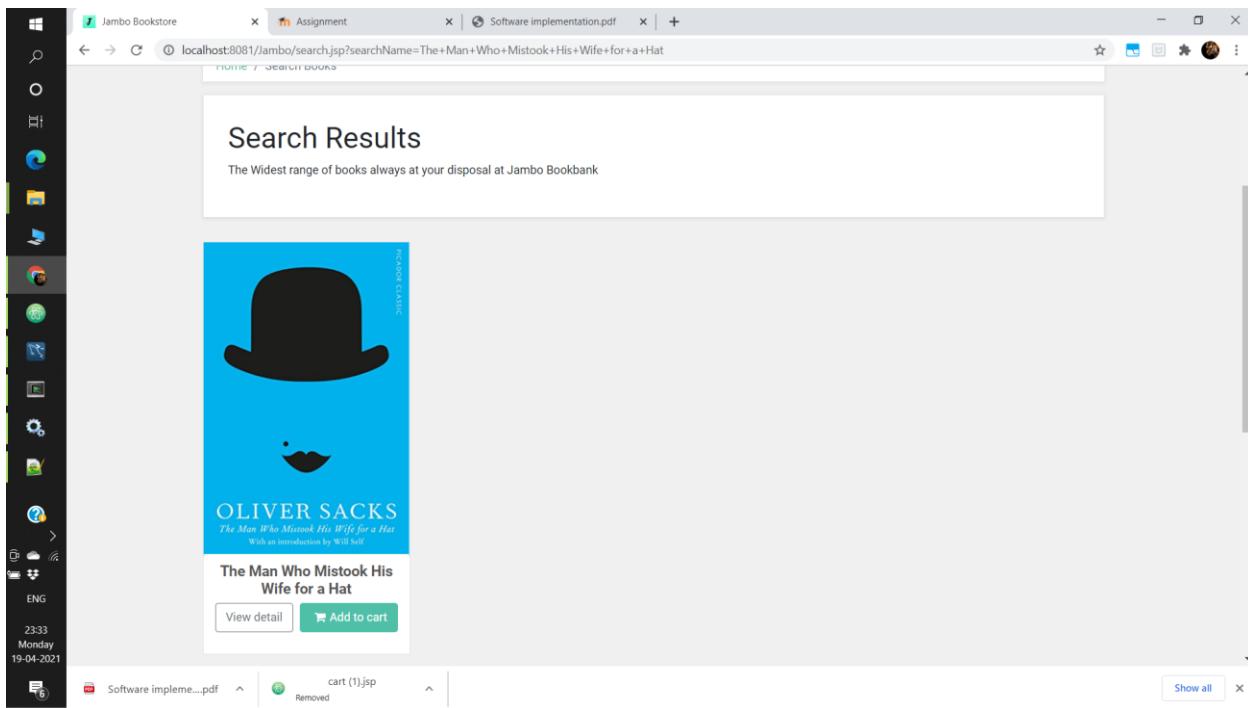
17. The database change after adding a book to the cart.



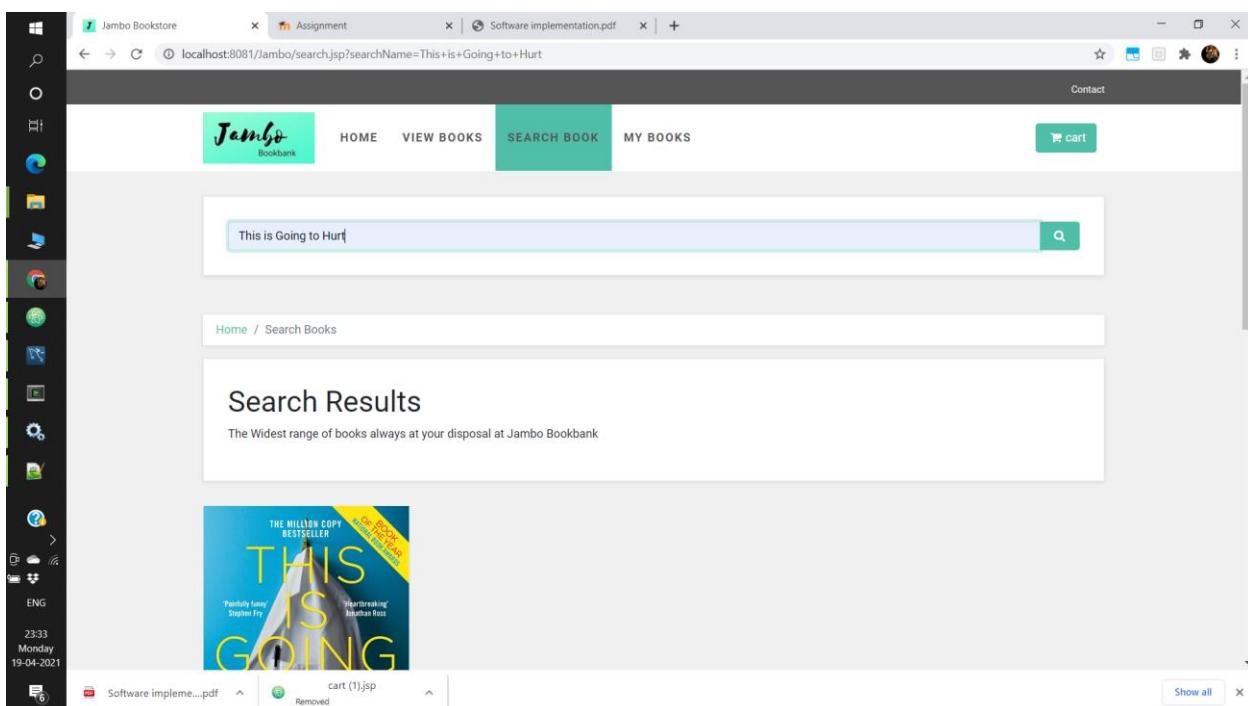
18. The page after clicking on the search icon



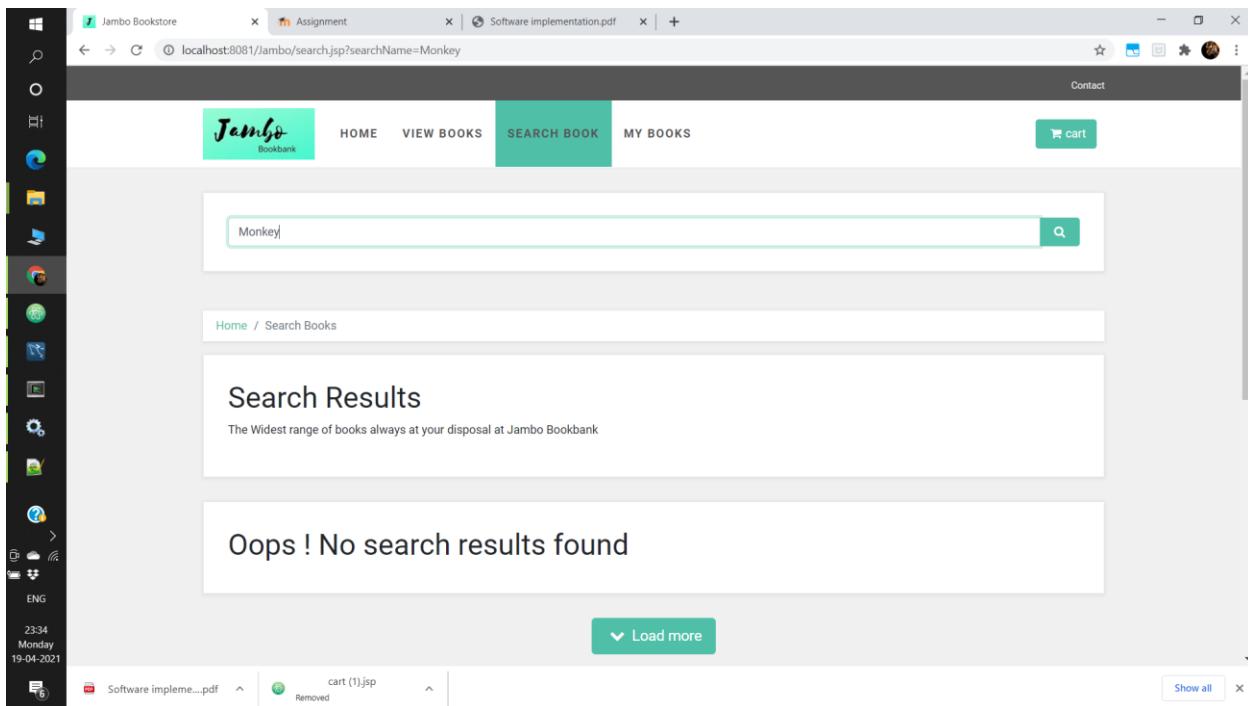
19. The search bar after searching for a particular book.



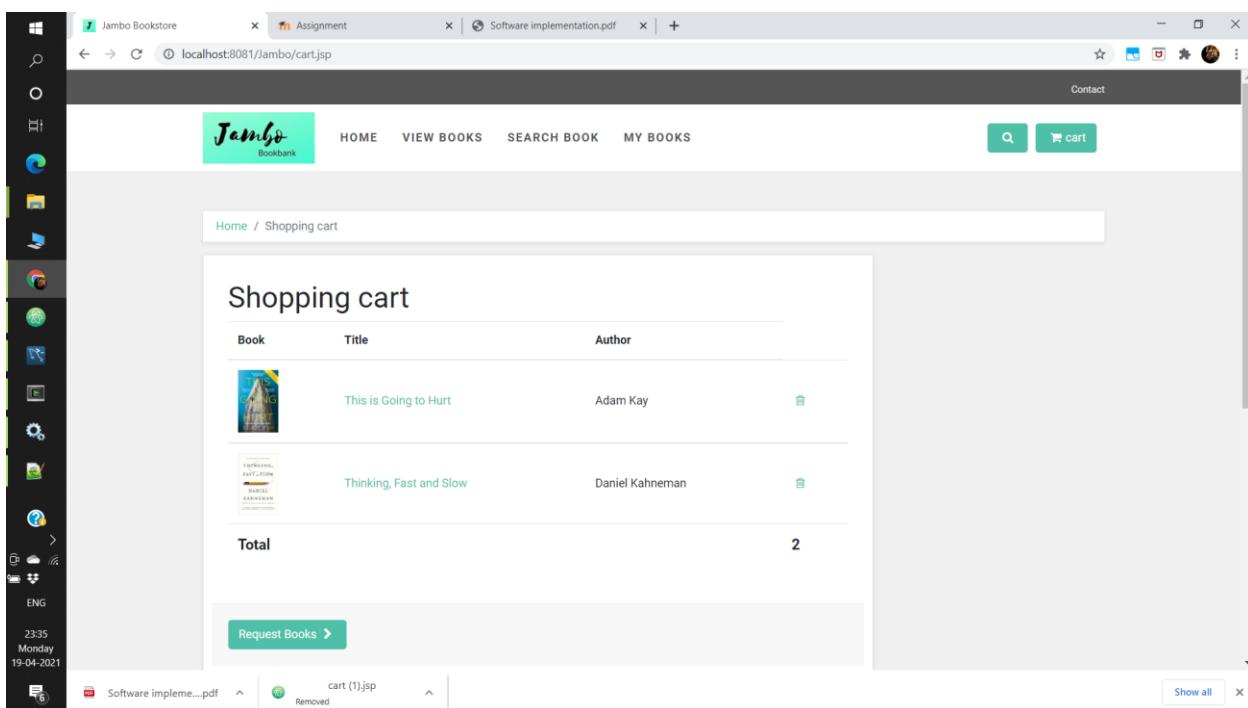
20. The search result page after finding the book.



21. Search page for a book that is not available.



22. Search result page after no matching search result is found.



23. The cart page with the selected books.

MySQL Shell

U1	Ross	123456	9988776655	ross@gmail.com	Velachery-Chennai	2020-01-30
U2	Ana	111111	9876556789	ana@gmail.com	Ambattur-Chennai	2020-02-27
U3	Sruthi	222222	8877996600	sruthi@gmail.com	Avadi-Chennai	2020-03-30
U4	Rayan	333333	7655677658	rayan@gmail.com	Korattur-Chennai	2020-04-30
U5	Rana	444444	9192939495	rana@gmail.com	Adambakkam-Chennai	2021-03-30
U6	Joshua Alexander	p1swork	9962690985	josh@gmail.com	Injambakkam	2021-04-19

MySQL	localhost:3306	ssl	Jambodb	SQL	> select * from user_id;
id name pw phone email addr reg_date					
U1 Ross 123456 9988776655 ross@gmail.com Velachery-Chennai 2020-01-30					
U2 Ana 111111 9876556789 ana@gmail.com Ambattur-Chennai 2020-02-27					
U3 Sruthi 222222 8877996600 sruthi@gmail.com Avadi-Chennai 2020-03-30					
U4 Rayan 333333 7655677658 rayan@gmail.com Korattur-Chennai 2020-04-30					
U5 Rana 444444 9192939495 rana@gmail.com Adambakkam-Chennai 2021-03-30					
U6 Joshua Alexander p1swork 9962690985 josh@gmail.com Injambakkam 2021-04-19					

MySQL	localhost:3306	ssl	Jambodb	SQL	> select * from cart;
uid bid					
U1 B1					
U1 B2					

MySQL	localhost:3306	ssl	Jambodb	SQL	> select * from cart;
Empty set (0.0000 sec)					
MySQL	localhost:3306	ssl	Jambodb	SQL	>

EVERYONE LOVES A GOOD READ

NOMINAL PENALTY

100% SATISFACTION GUARANTEED

24. The database table after modification in the cart.

MySQL Shell

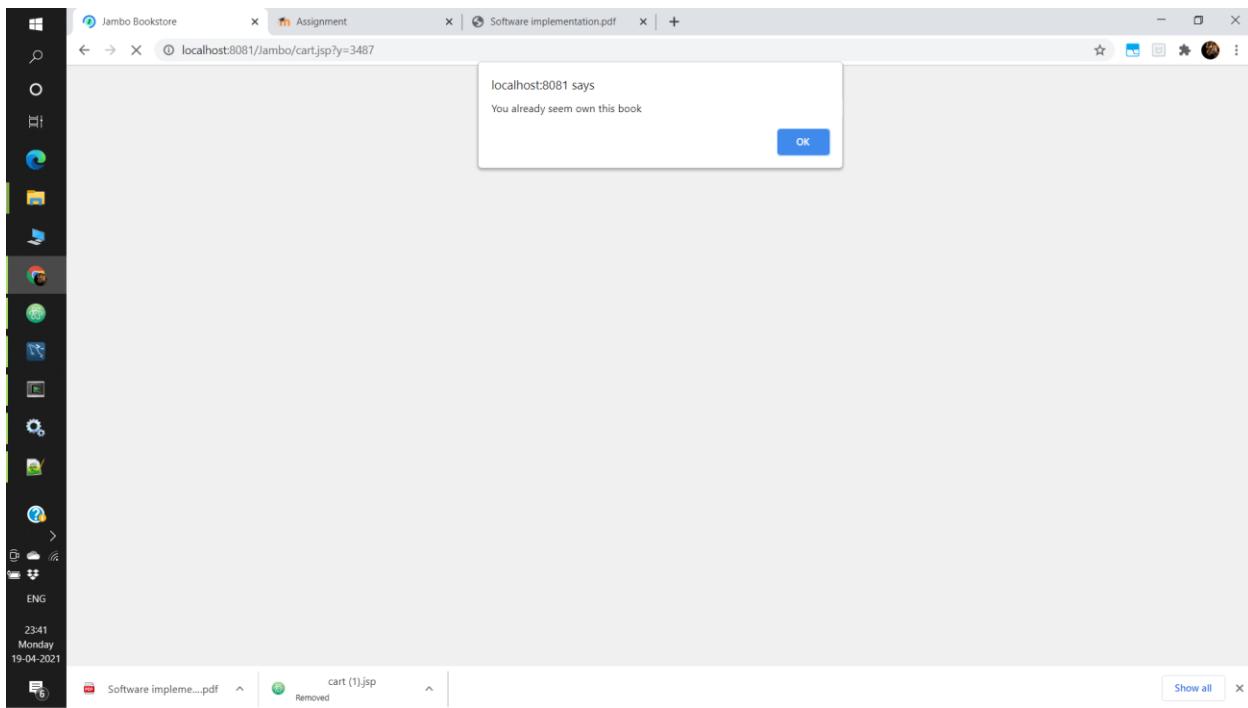
MySQL	localhost:3306	ssl	Jambodb	SQL	> select * from cart;
Total	1				

Shopping cart

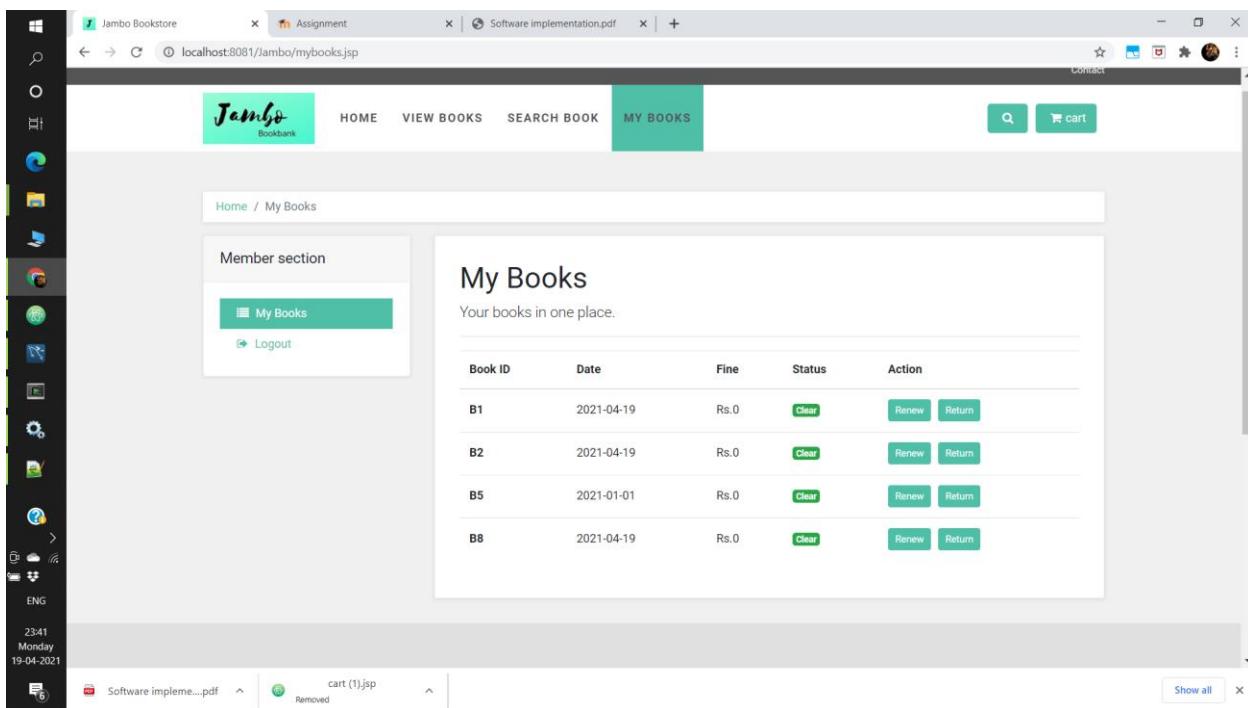
Book	Title	Author
	This is Going to Hurt	Adam Kay

Request Books >

25. Cart after deleting a particular book



26. Popup message after trying to borrow an already acquired book.



27. The My Books page displaying the books owned by the user.

```

MySQL> select * from user_id;
+---+---+---+---+---+
| id | name | pw | phone | email | addr | reg_date |
+---+---+---+---+---+
| U1 | Ross | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana | 111111 | 9876543210 | ana@gmail.com | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai | 2020-03-30 |
| U4 | Rayan | 333333 | 7655677658 | rayan@gmail.com | Korattur-Chennai | 2020-04-30 |
| U5 | Rana | 444444 | 9192939405 | rana@gmail.com | Adambakkam-Chennai | 2021-03-30 |
+---+---+---+---+---+
5 rows in set (0.0004 sec)

MySQL> select * from cart;
+---+---+
| uid | bid |
+---+---+
| U1 | B1 |
| U1 | B2 |
+---+---+
2 rows in set (0.0007 sec)

MySQL> select * from cart;
Empty set (0.0006 sec)

MySQL> insert into book_user values ('U1','2021-01-01','2021-02-28','B4',0);
Query OK, 1 row affected (0.1096 sec)

MySQL> -

```

Book ID	Date	Fine	Status	Action
B8	2021-04-19	Rs.0	Clear	Renew Return
			Clear	Renew Return
			Clear	Renew Return

B8 2021-04-19 Rs.0 **Clear** **Renew** **Return**

28. Database before the addition of penalty.

Book ID	Date	Fine	Status	Action
B1	2021-04-19	Rs.0	Clear	Renew Return
B2	2021-04-19	Rs.0	Clear	Renew Return
B4	2021-01-01	Rs.500	Penalty	
B5	2021-01-01	Rs.0	Clear	Renew Return
B8	2021-04-19	Rs.0	Clear	Renew Return

Pay Penalty

29. Penalty for a particular book

```

MySQL Shell
+----+----+----+----+----+----+
| id | name | pw   | phone | email |      | reg_date |
+----+----+----+----+----+----+
| U1 | Ross  | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana   | 111111 | 9876556789 | ana@gmail.com  | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai    | 2020-03-30 |
| U4 | Rayan  | 333333 | 7655677658 | rayan@gmail.com | Korattur-Chennai | 2020-04-30 |
| U5 | Rana   | 444444 | 9192939405 | rana@gmail.com  | Adambakkam-Chennai | 2021-03-30 |
| U6 | Joshua Alexander | 555555 | 9962680805 | joshua@gmail.com | Injamakkam       | 2021-04-19 |
+----+----+----+----+----+----+
6 rows in set (0.0004 sec)

MySQL localhost:3306 ssl [jambodb] SQL > select * from cart;
+----+----+
| uid | bid |
+----+----+
| U1 | B1 |
| U1 | B2 |
+----+
2 rows in set (0.0007 sec)

MySQL localhost:3306 ssl [jambodb] SQL > select * from cart;
Empty set (0.0000 sec)

MySQL localhost:3306 ssl [jambodb] SQL > insert into book_user values ('U1','2021-01-01','2021-02-28','B4',0);
Query OK, 1 row affected (0.1096 sec)

MySQL localhost:3306 ssl [jambodb] SQL > insert into book_user values ('U1','2021-01-01','2021-03-28','B3',0);
Query OK, 1 row affected (0.1099 sec)

MySQL localhost:3306 ssl [jambodb] SQL > .

```

B5 2021-01-01 Rs.0

B8 2021-04-19 Rs.0 [Clear](#) [Renew](#) [Return](#)

[Pay Penalty](#)

30. Database on the addition of another penalty

Member section

- [My Books](#)
- [Logout](#)

My Books

Your books in one place.

Book ID	Date	Fine	Status	Action
B1	2021-04-19	Rs.0	Clear	Renew Return
B2	2021-04-19	Rs.0	Clear	Renew Return
B4	2021-01-01	Rs.500	Penalty	
B5	2021-01-01	Rs.0	Clear	Renew Return
B8	2021-04-19	Rs.0	Clear	Renew Return

[Pay Penalty](#)

31. Penalty page

The screenshot shows a web browser window with three tabs: 'Jambo Bookstore', 'Assignment', and 'Software implementation.pdf'. The main content area displays the 'My Books' section of the Jambo Bookstore. On the left, a sidebar shows 'Member section' with 'My Books' selected. The main area is titled 'My Books' and contains a table of books with columns: Book ID, Date, Fine, Status, and Action. The table includes the following data:

Book ID	Date	Fine	Status	Action
B1	2021-04-19	Rs.0	Clear	Renew Return
B2	2021-04-19	Rs.0	Clear	Renew Return
B3	2021-01-01	Rs.300	Penalty	
B4	2021-01-01	Rs.500	Penalty	
B5	2021-01-01	Rs.0	Clear	Renew Return
B6	2021-04-19	Rs.0	Clear	Renew Return

A green button labeled 'Pay Penalty' is located at the bottom of the table.

32. Second penalty added

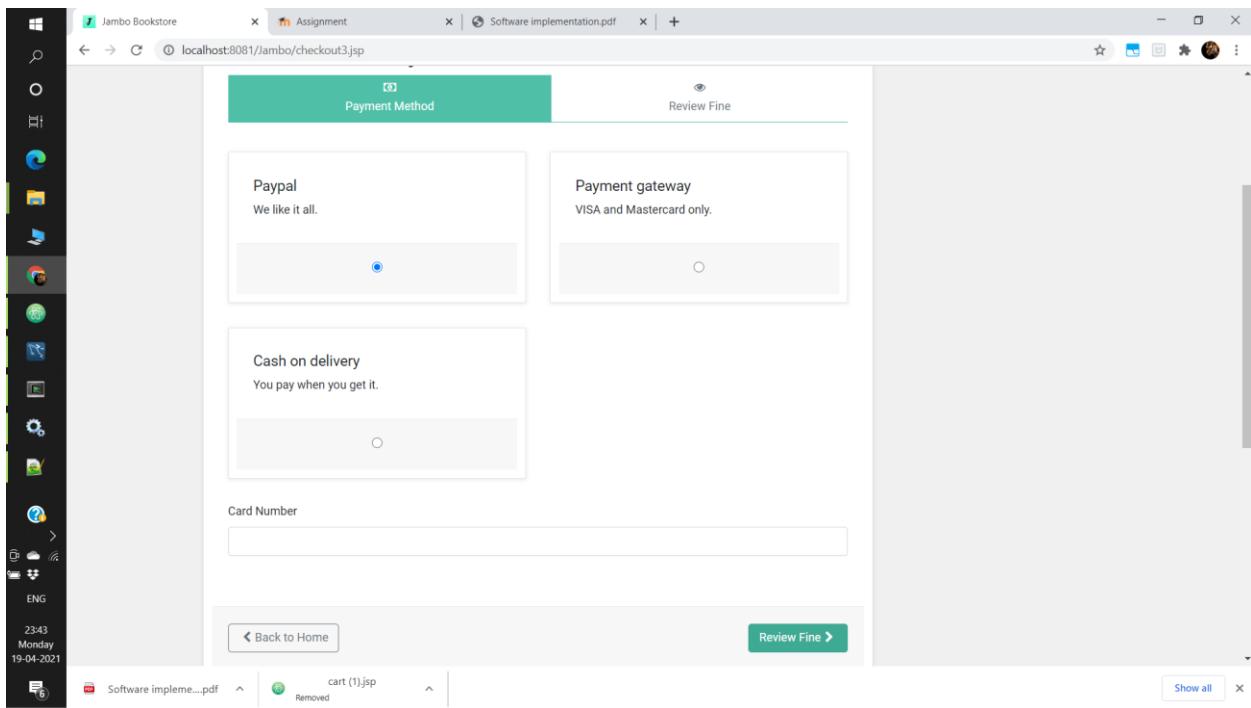
The screenshot shows a web browser window with three tabs: 'Jambo Bookstore', 'Assignment', and 'Software implementation.pdf'. The main content area displays the 'Checkout - Payment method' section of the Jambo Bookstore. The top navigation bar includes a 'Contact' link. The main area is titled 'Checkout - Payment method' and features three payment method options:

- Payment Method** (selected tab)
- Review Fine**

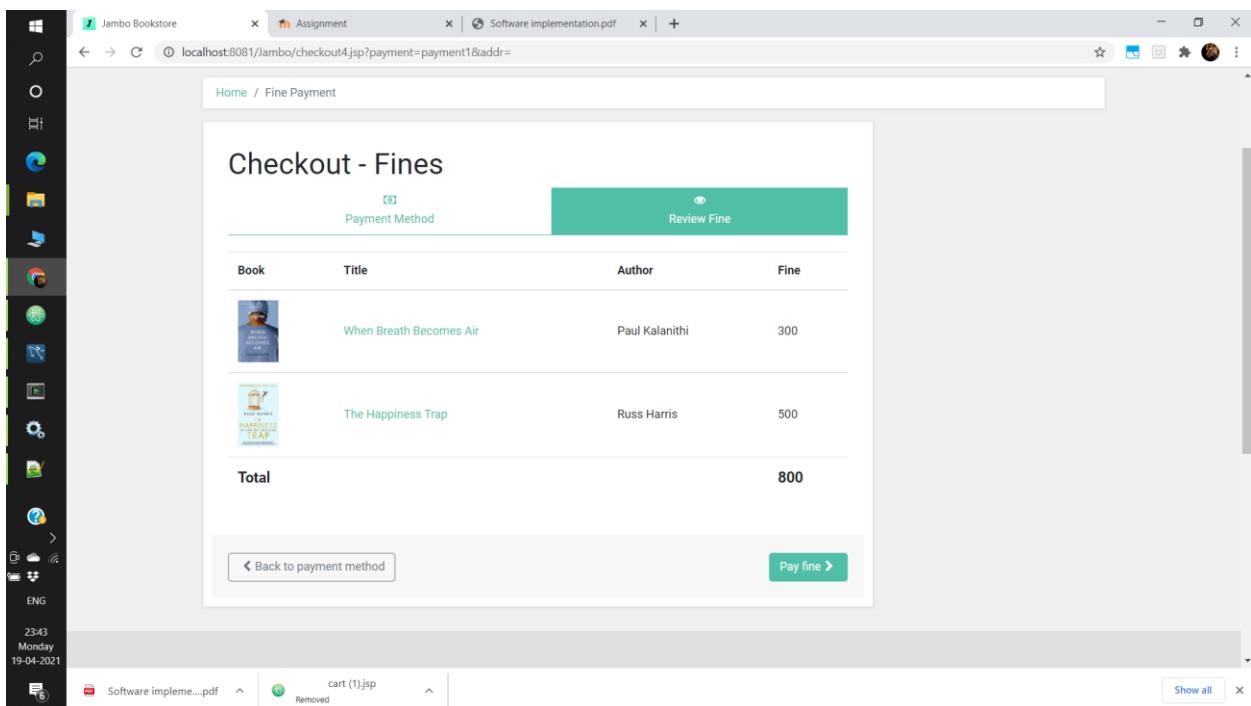
The payment methods listed are:

- Paypal**: We like it all.
- Payment gateway**: VISA and Mastercard only.
- Cash on delivery**: You pay when you get it.

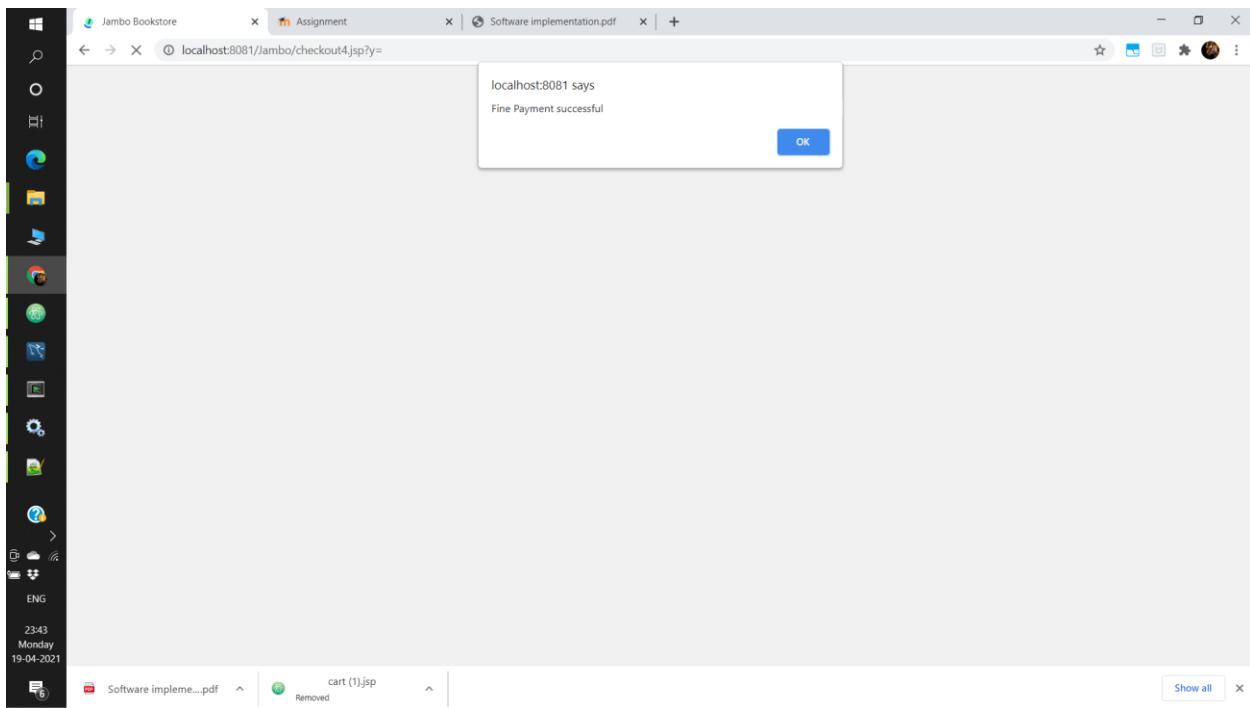
33. Payment method options for the penalties.



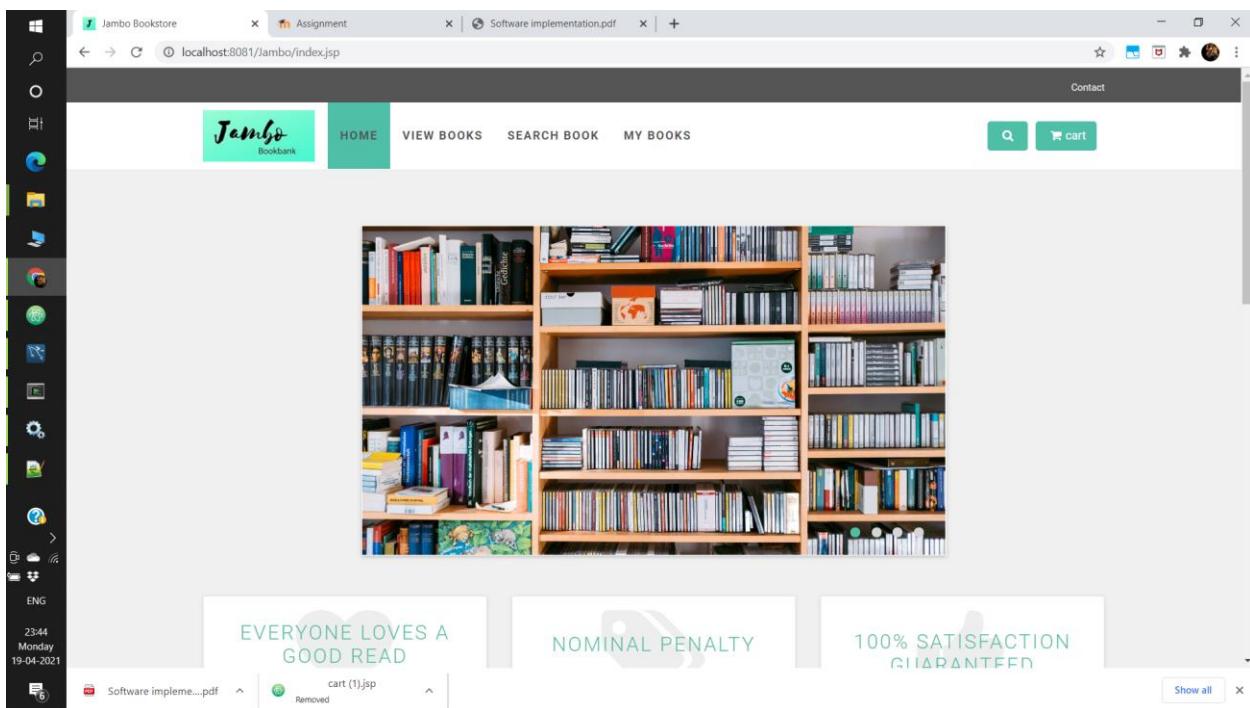
34. Continuation of the payment method options.



35. Checkout Page for the penalty payment.



36. Successful payment indication message



37. Redirected home page after the payment of the fine.

The screenshot shows a web browser window with three tabs: 'Jambo Bookstore', 'Assignment', and 'Software implementation.pdf'. The main content area displays the 'My Books' page. On the left, a sidebar titled 'Member section' has a 'My Books' button. The main area is titled 'My Books' with the sub-instruction 'Your books in one place.' Below is a table:

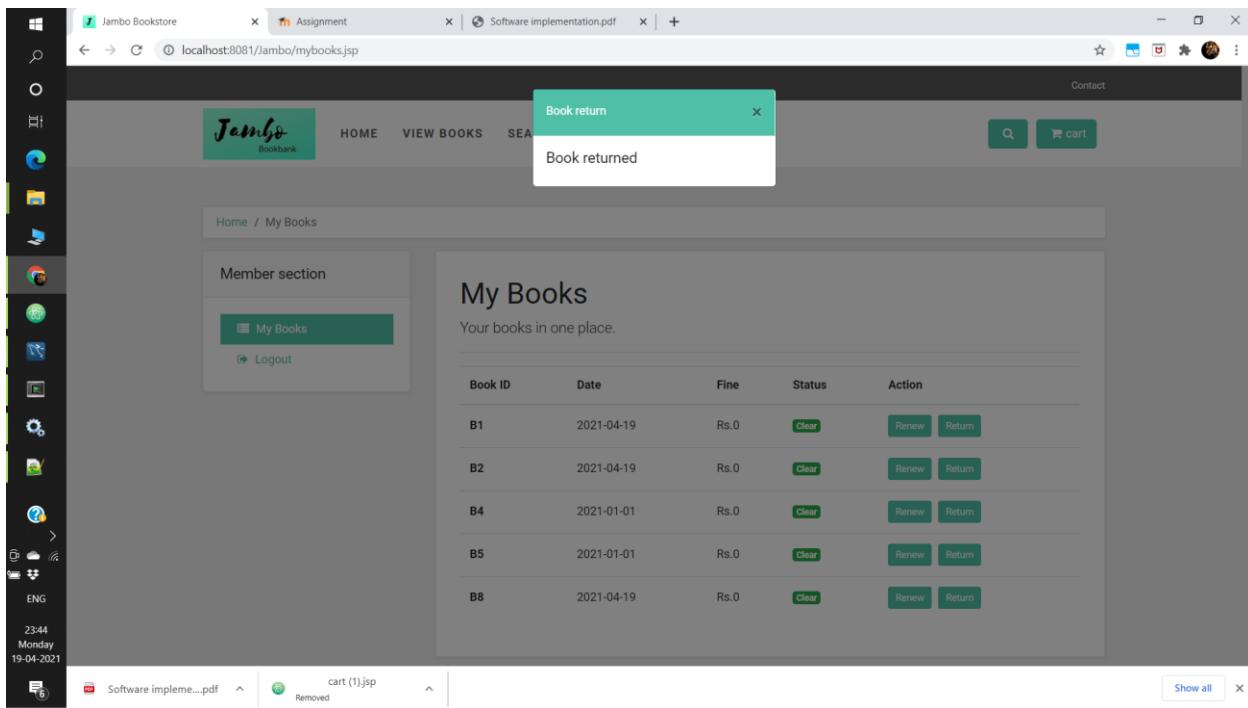
Book ID	Date	Fine	Status	Action
B1	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B2	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B3	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B4	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B5	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B8	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>

38. The My Books page after all the fines are cleared.

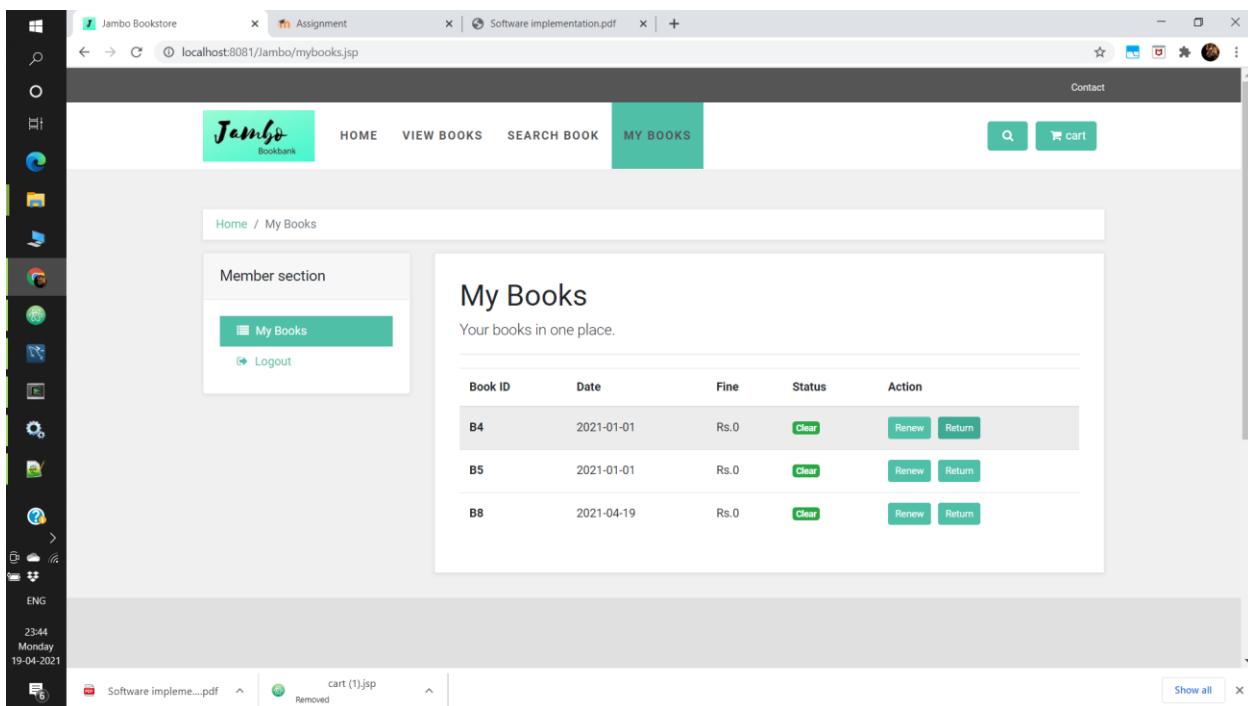
The screenshot shows a web browser window with three tabs: 'Jambo Bookstore', 'Assignment', and 'Software implementation.pdf'. The main content area displays the 'My Books' page. A modal dialog box titled 'Book return' contains the message 'Book returned'. The main table is identical to the previous screenshot:

Book ID	Date	Fine	Status	Action
B1	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B2	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B3	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B4	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B5	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B8	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>

39. Page after returning a particular book



40. After returning another book.



41. The My Books page after returning the two books in possession

The screenshot shows a web browser window with three tabs: 'Jambo Bookstore', 'Assignment', and 'Software implementation.pdf'. The main content area displays the 'My Books' section of the Jambo Bookstore website. On the left, a sidebar shows 'Member section' with 'My Books' selected. The main area is titled 'My Books' and contains a table with three rows:

Book ID	Date	Fine	Status	Action
B4	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B5	2021-01-01	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>
B8	2021-04-19	Rs.0	<button>Clear</button>	<button>Renew</button> <button>Return</button>

42. Page before returning another book.

The screenshot shows a similar web browser setup. The 'Assignment' tab is active. The main content area now displays a modal dialog box titled 'Book return' with the message 'Book returned'. The rest of the page, including the sidebar and the book list table, remains visible in the background.

43. Book returned popup message.

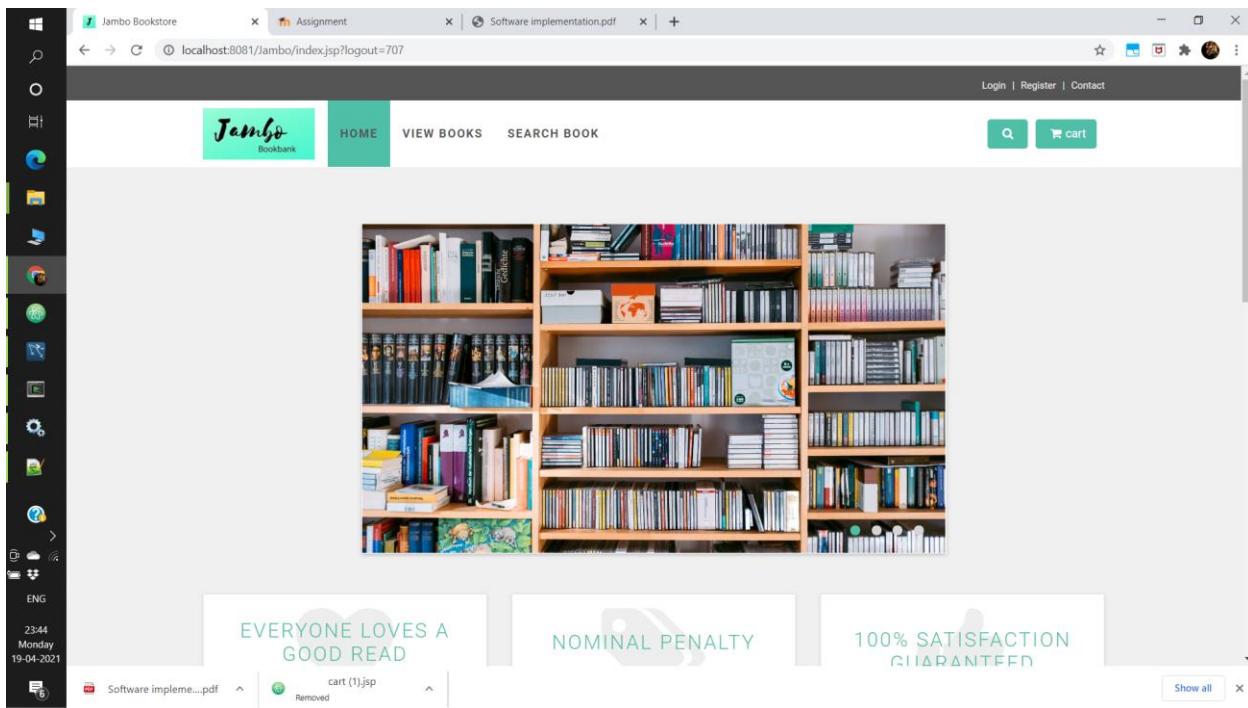
The screenshot shows a web browser window with the URL localhost:8081/jambo/mybooks.jsp. The page is titled "My Books" and displays a table of books owned by the user. The table has columns for Book ID, Date, Fine, Status, and Action. Two books are listed:

Book ID	Date	Fine	Status	Action
B5	2021-01-01	Rs.0	Clear	Renew Return
B8	2021-04-19	Rs.0	Clear	Renew Return

44. My Book page after returning the book.

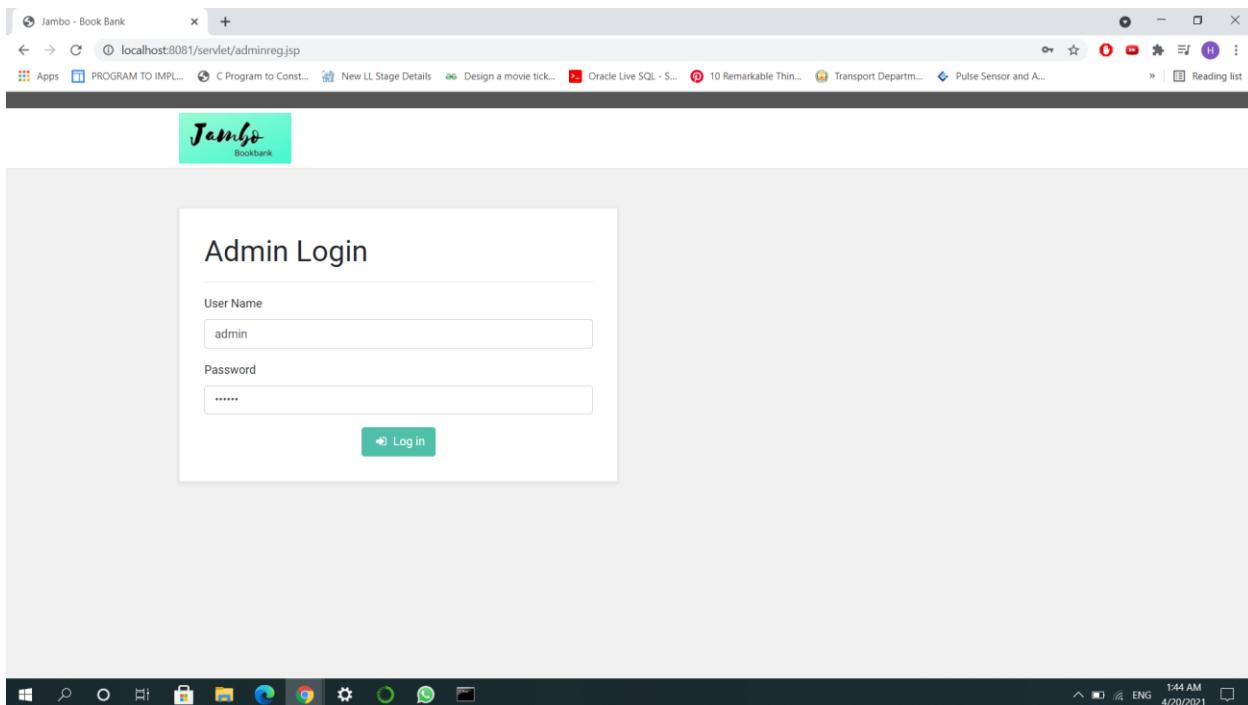
The screenshot shows a web browser window with the URL localhost:8081/Jambo/category.html. The page displays an error message: "We are sorry - this page is not here anymore" followed by "Error 404 - Page not found". Below the message is a link to "Go to Homepage".

45. Page for the error 404 page not found situation.

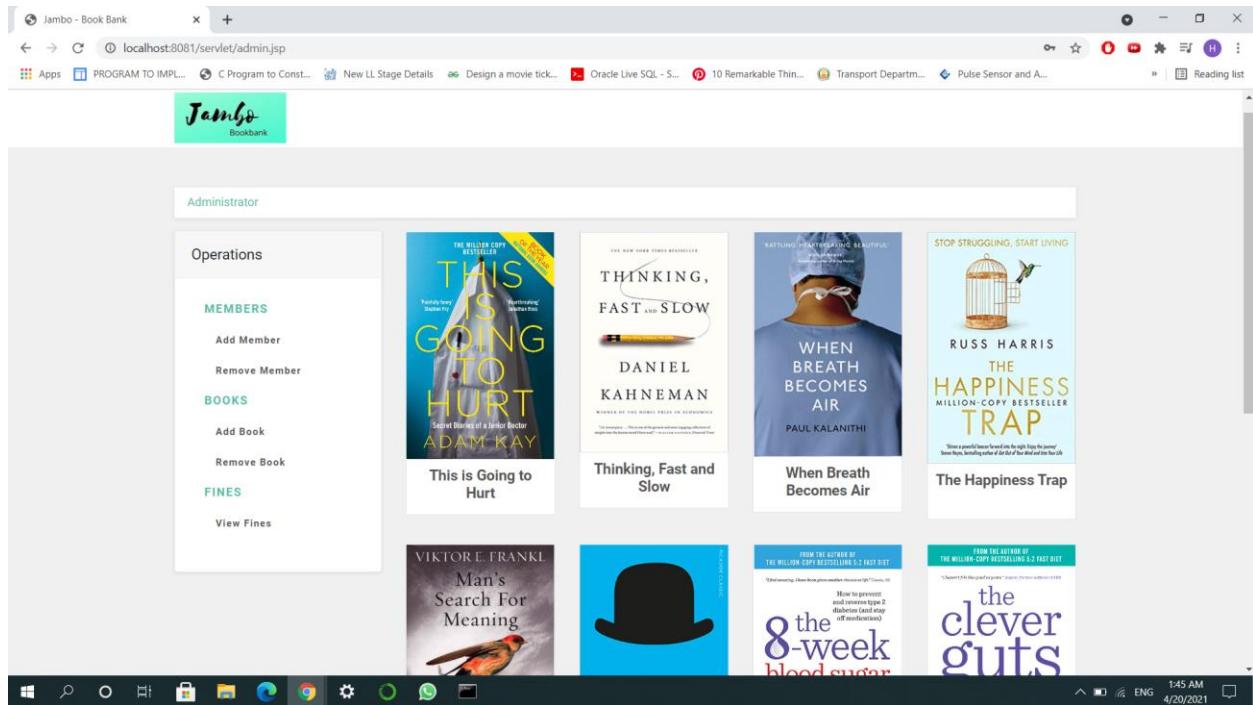


46. The page after logging out is redirected to the main page.

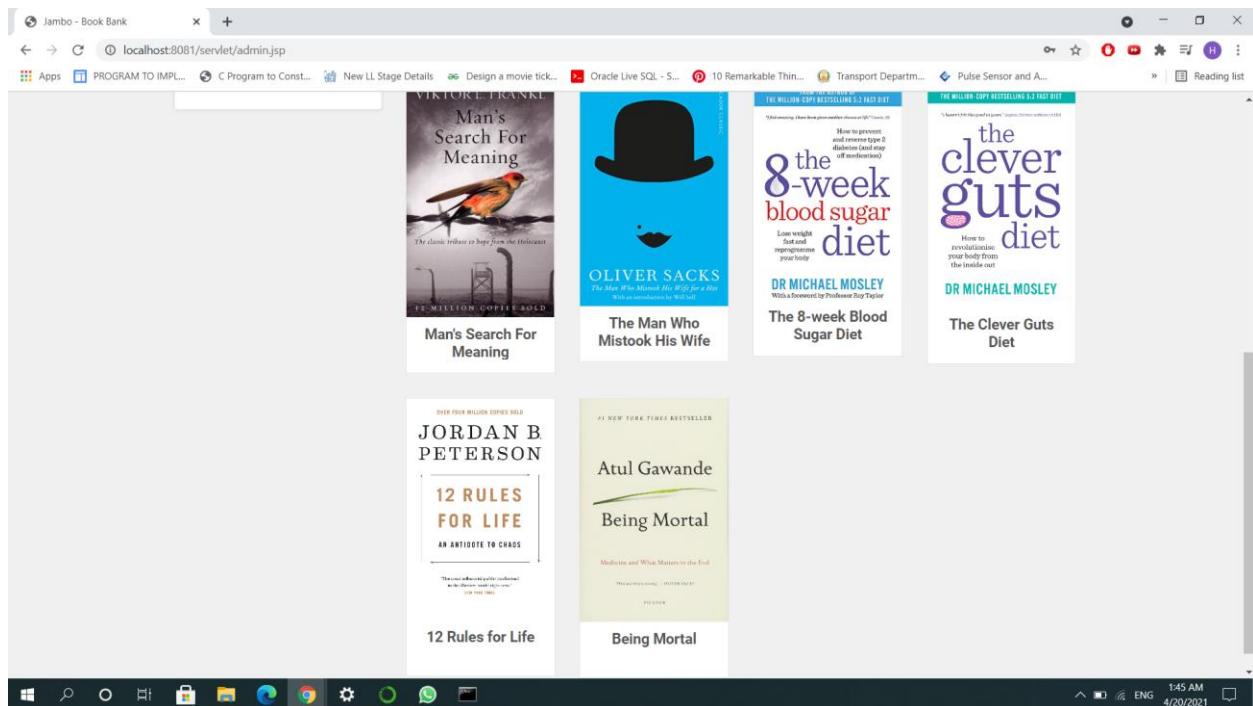
Admin Side:



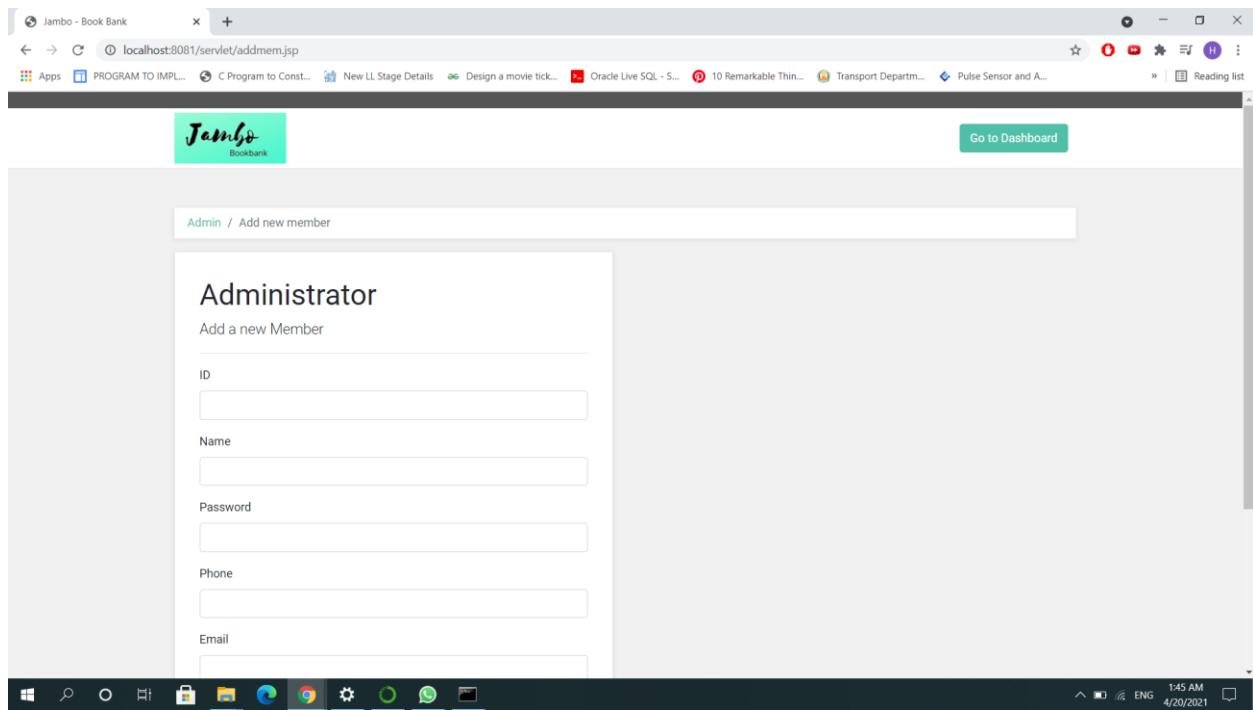
1. Admin login page



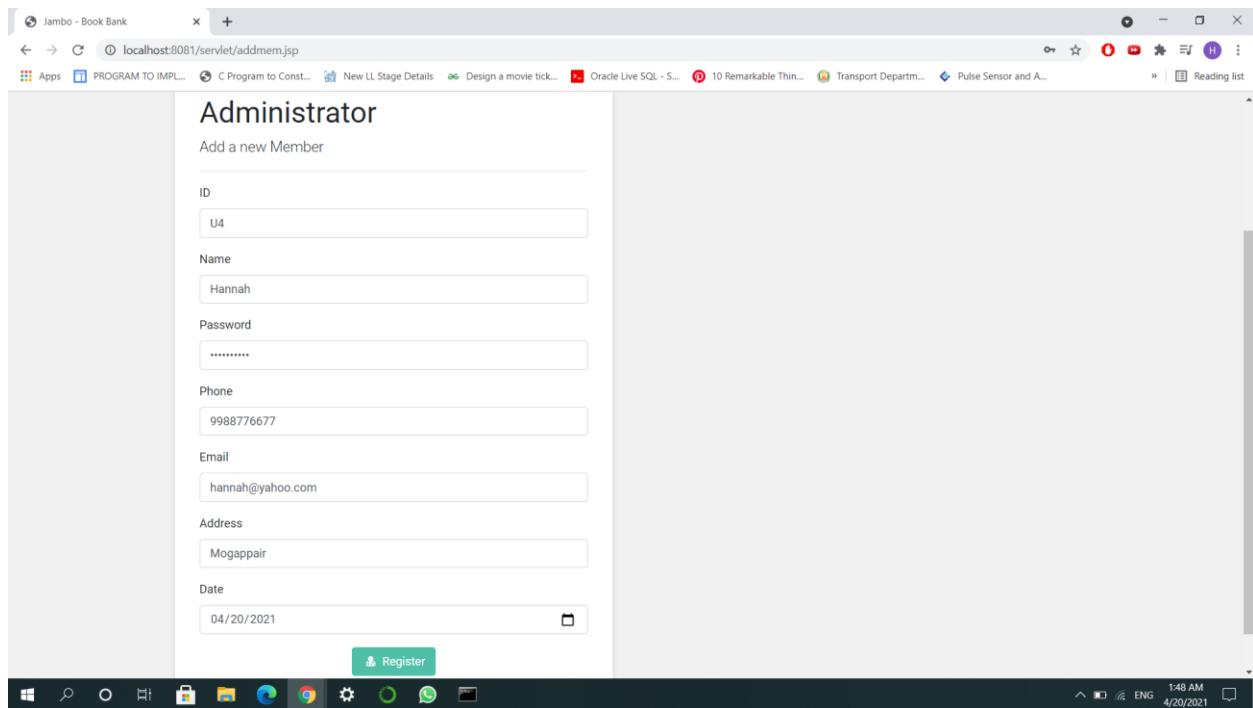
2. The dashboard for the admin side



3. Dashboard continuation



4. Add member page for the admin



5. Add member page after the addition of details

The screenshot shows a web application interface for 'Jambo Bookbank'. On the left, there's a sidebar with a teal header containing the 'Jambo' logo and the word 'Bookbank'. Below it, a green button says 'Go to Dashboard'. The main content area has a title 'Admin / Add new member' and a heading 'Administrator'. It features a form with fields for 'ID', 'Name', 'Password', 'Phone', and 'Email'. To the right of the form is a terminal window titled 'Command Prompt - mysql -u root -p'. It displays two MySQL queries: 'select * from user_id;' and 'select * from user_id;'. Both queries return data tables with columns 'id', 'name', 'pw', 'phone', 'email', 'addr', and 'reg_date'. The first query returns 3 rows, and the second returns 4 rows. The data includes entries like 'Ross' at 'Velachery-Chennai' and 'Hannah' at 'Mogappair'.

6. The database after adding a member.

This screenshot shows the 'Admin / Remove a member' page. The interface is similar to the previous one, with the 'Jambo Bookbank' sidebar and 'Go to Dashboard' button. The main area has a heading 'Administrator' and a sub-heading 'Remove an existing Member'. It contains a form with a field labeled 'Enter Member ID' and a green 'Remove' button below it. The status bar at the bottom indicates the time is 1:49 AM and the date is 4/20/2021.

7. Admin page to remove the member

```

mysql> select * from user_id;
+----+-----+-----+-----+-----+-----+
| id | name | pw   | phone | email  | addr      | reg_date |
+----+-----+-----+-----+-----+-----+
| U1 | Ross | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana  | 111111 | 9876556789 | ana@gmail.com  | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai | 2020-03-30 |
+----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from user_id;
+----+-----+-----+-----+-----+-----+
| id | name | pw   | phone | email  | addr      | reg_date |
+----+-----+-----+-----+-----+-----+
| U1 | Ross | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana  | 111111 | 9876556789 | ana@gmail.com  | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai | 2020-03-30 |
| U4 | Hannah | 1234322356 | 9988776677 | hannah@yahoo.com | Mogappair | 2021-04-20 |
+----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

8. Database before removing a member of particular id.

```

mysql> select * from user_id;
+----+-----+-----+-----+-----+-----+
| id | name | pw   | phone | email  | addr      | reg_date |
+----+-----+-----+-----+-----+-----+
| U1 | Ross | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana  | 111111 | 9876556789 | ana@gmail.com  | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai | 2020-03-30 |
+----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

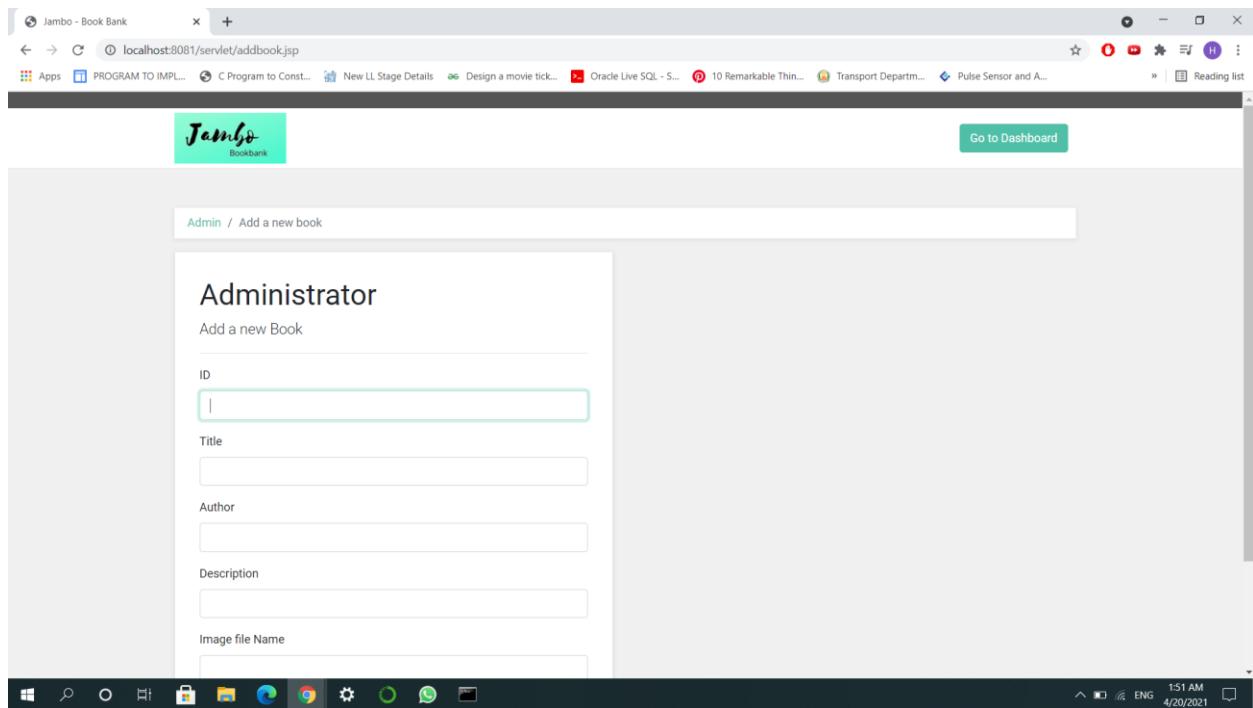
mysql> select * from user_id;
+----+-----+-----+-----+-----+-----+
| id | name | pw   | phone | email  | addr      | reg_date |
+----+-----+-----+-----+-----+-----+
| U1 | Ross | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana  | 111111 | 9876556789 | ana@gmail.com  | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai | 2020-03-30 |
| U4 | Hannah | 1234322356 | 9988776677 | hannah@yahoo.com | Mogappair | 2021-04-20 |
+----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select * from user_id;
+----+-----+-----+-----+-----+-----+
| id | name | pw   | phone | email  | addr      | reg_date |
+----+-----+-----+-----+-----+-----+
| U1 | Ross | 123456 | 9988776655 | ross@gmail.com | Velachery-Chennai | 2020-01-30 |
| U2 | Ana  | 111111 | 9876556789 | ana@gmail.com  | Ambattur-Chennai | 2020-02-27 |
| U3 | Sruthi | 222222 | 8877996600 | sruthi@gmail.com | Avadi-Chennai | 2020-03-30 |
+----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

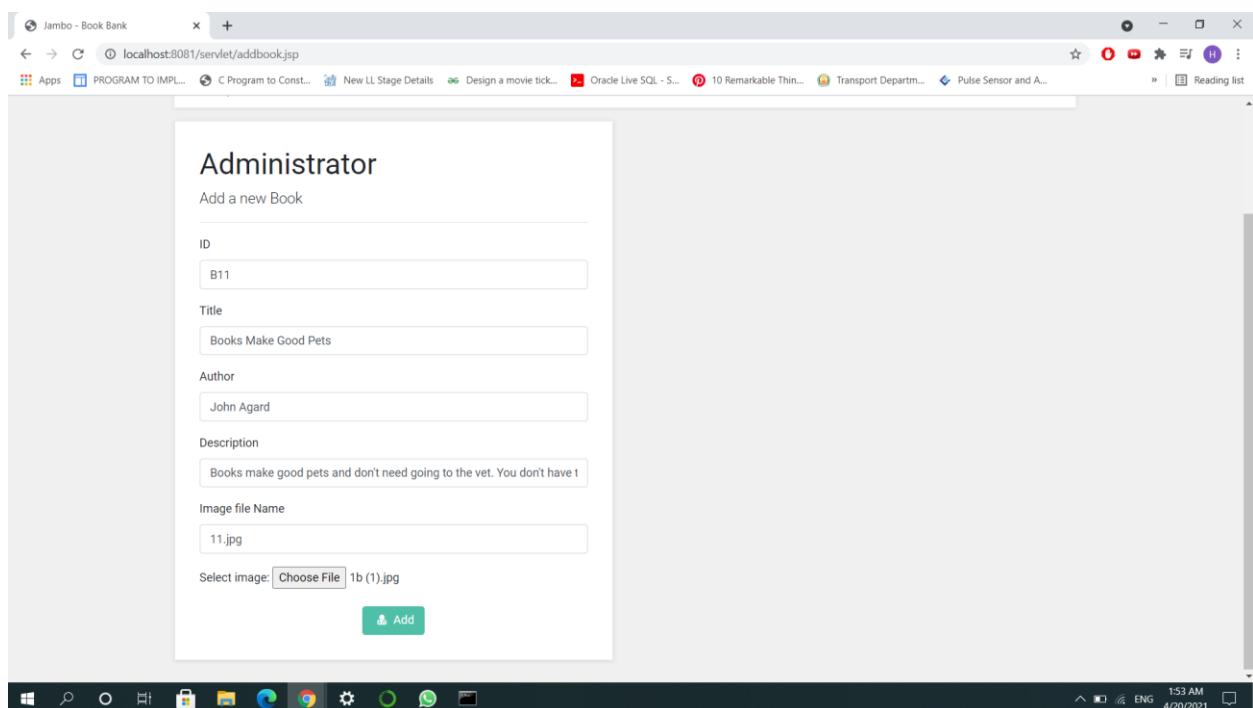
mysql>

```

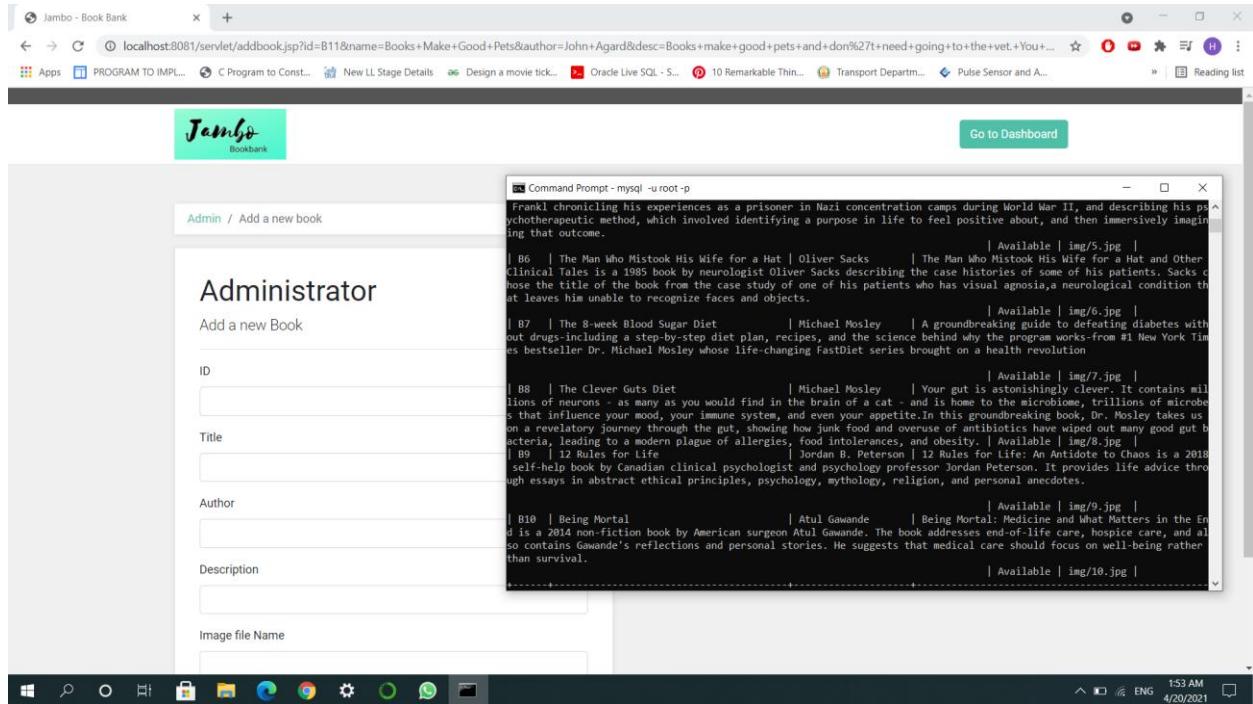
9. Database after removing the particular member.



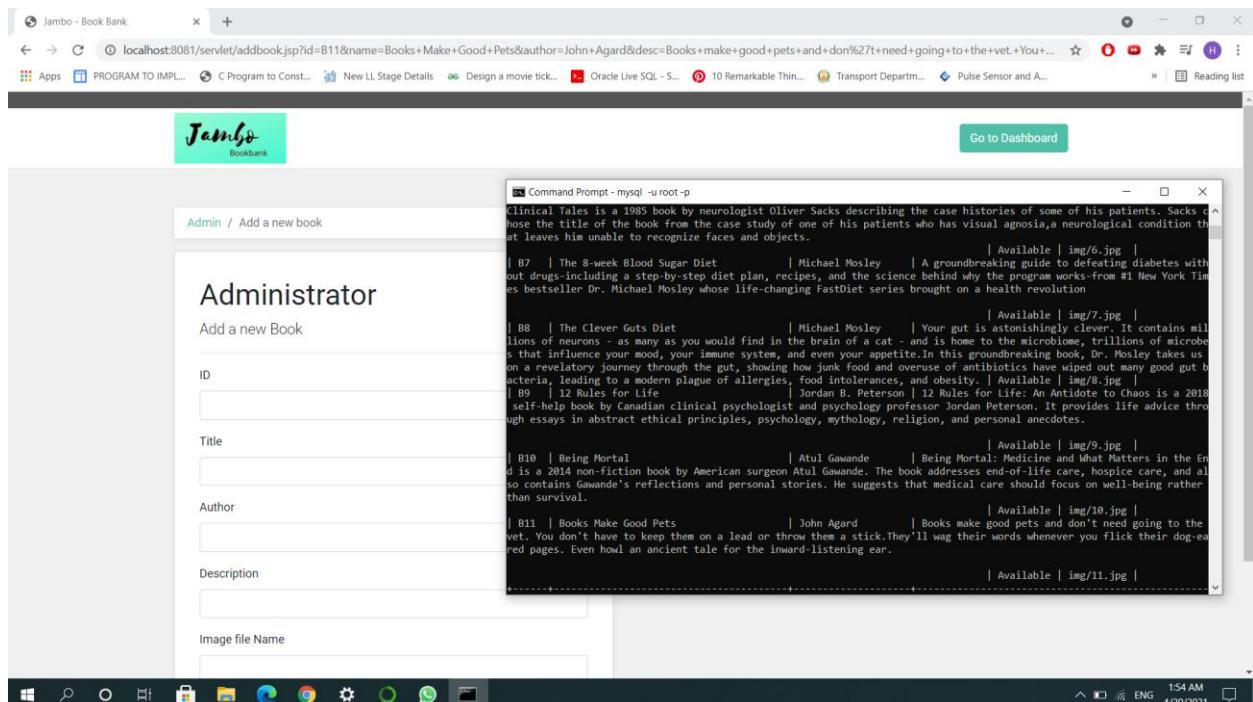
10. Admin page to add a new book to the database.



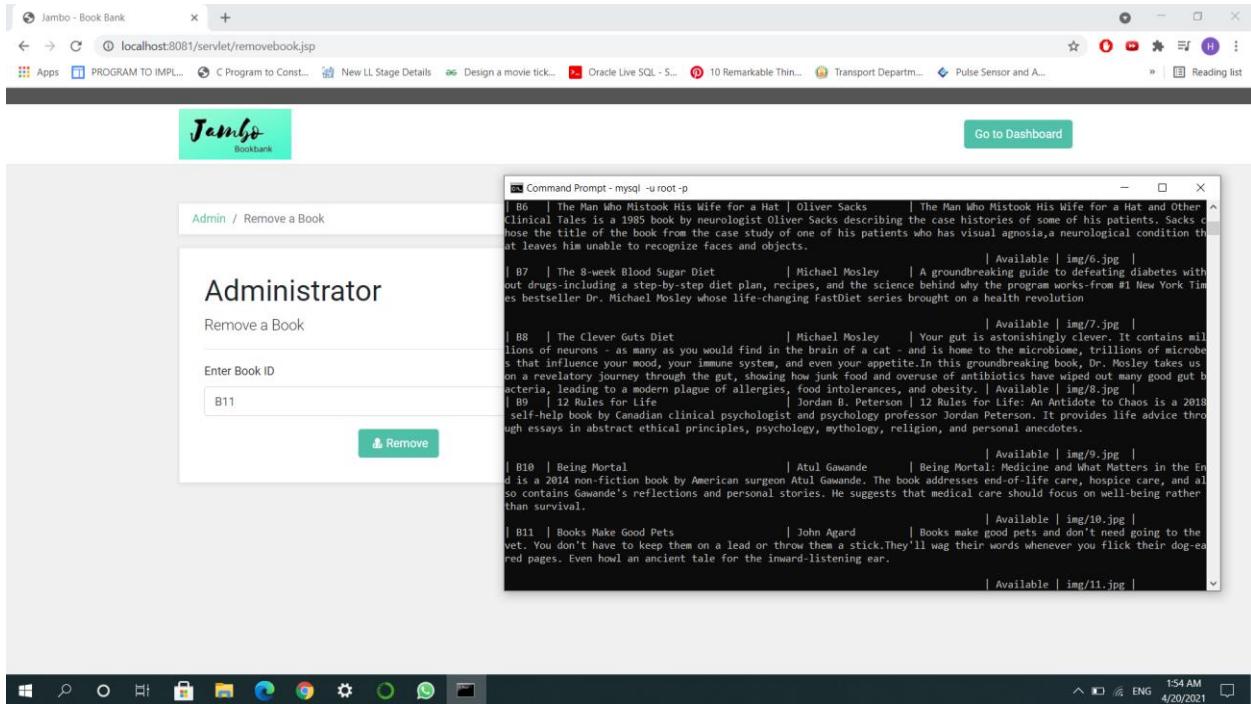
11. Add book page after the details are entered.



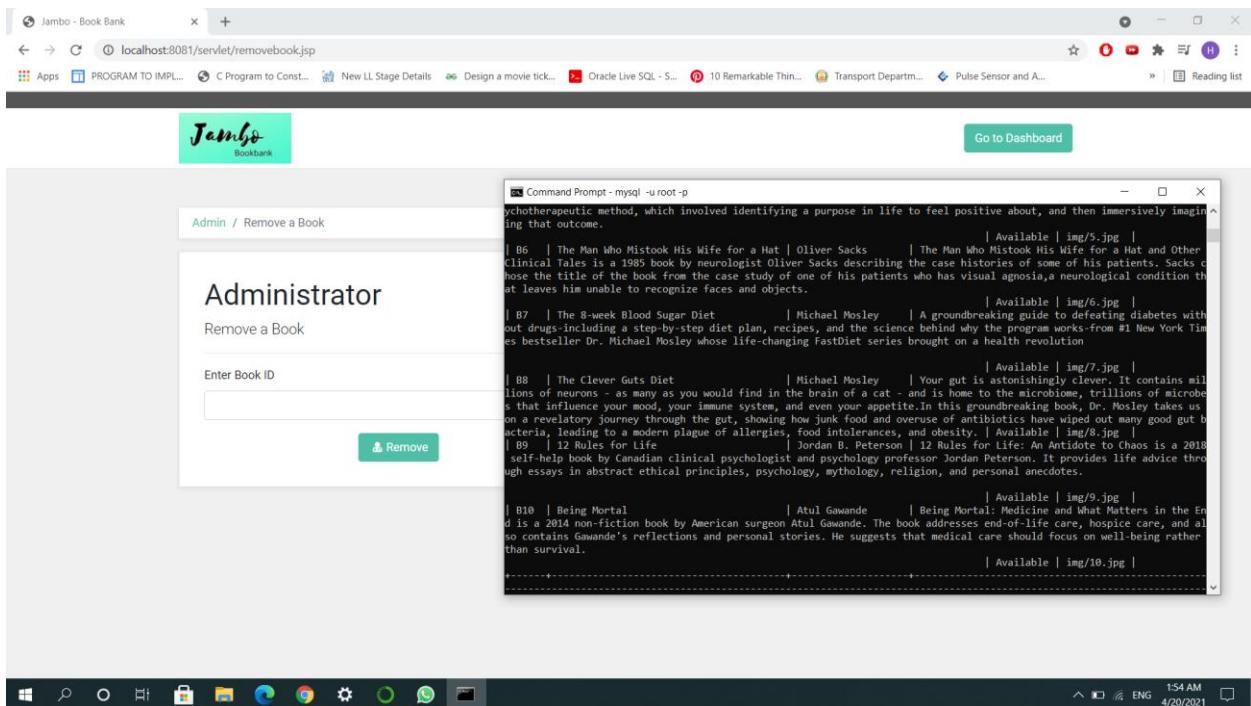
12. Database before the addition of the book



13. Database after the addition of the book.



14. Admin page to remove a particular book.



15. After removal of the book from the database.

The screenshot shows a web browser window titled "Jambo - Book Bank". The URL in the address bar is "localhost:8081/servlet/fines.jsp". The page content is titled "Administrator - View Fines". A table lists the following data:

Book	Title	Author	User ID	Fine
	Thinking, Fast and Slow	Daniel Kahneman	U1	40
	The Happiness Trap	Russ Harris	U1	10
Total				50

16. View the fine page for the admin.

Documentation:

The Book Bank system consists of 2 main sides, the student side and the Administrator side. We realised that the user would feel more comfortable to access a site that is similar to an e-commerce website. So, the Student side of the website is made to have the look and feel of online shopping websites. The admin side is designed to provide the basic administrator functionalities to work with.

Technically, the project consists of JSP, AJAX, Java servlets and HTML, CSS.

The project helped us realize the difficulties faced when building a website which could not have known otherwise. It was challenging yet not too harsh. The developing experience was worth the time put into it.

Future expansions:

There are quite a few functionalities that we deliberately didn't add due to time constraints.

Some of the future work are

1. Renew book feature
2. SQL overhead reductions
3. Page concept to display multiple books instead of everything in one page
4. Search engine enhancements
5. Many UI features and redirects for easier flow
6. A dynamic system to store Cart values

