

1. Overview

❖ What is library and Library Management System?

- A **library** is a collection of sources of information and similar resources, made accessible to a defined community for reference or borrowing. A library's collection can include books, periodicals, manuscripts, newspapers, films, tapes, maps, prints, CDs, documents, microforms, cassettes, videotapes, DVDs and other formats.
- A system that allows the user to store the details of the collection of the materials along with the customer's details.

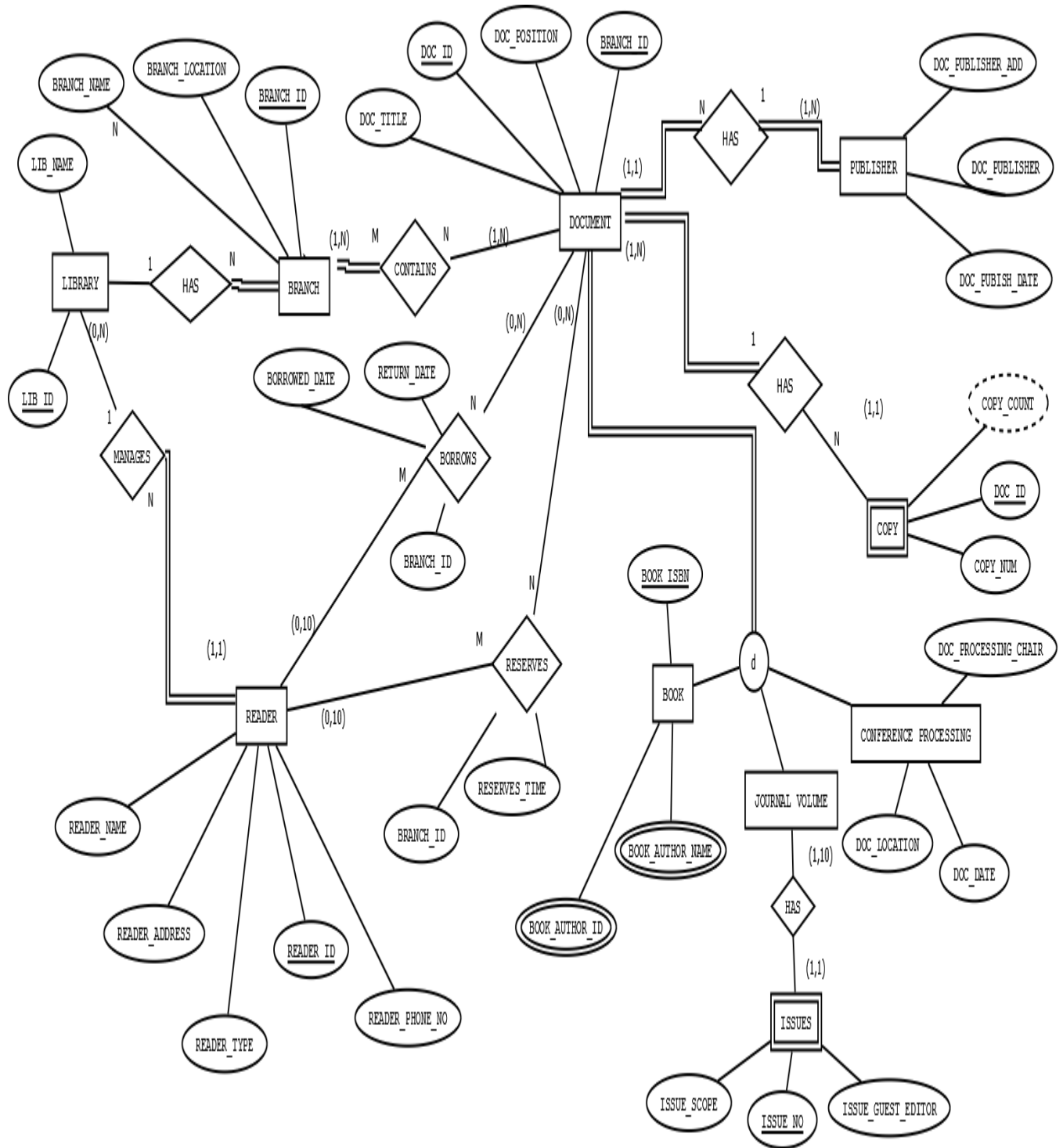
❖ Project Goals:

- The overall goal behind making this system is to allow the user to manage library's daily operations efficiently.
- A Library Management System usually comprises a relational database, software connected to database with a graphical user interface provided for the staff to interact with the database.
- The system comprises various modules such as
 - Cataloging (classifying and indexing of the materials)
 - Circulation (lending materials to readers and receiving them back)
 - Serials (tracking magazines, journals, newspaper holdings and etc.)

❖ Features of our system:

- Addition/Removal of a book from the system.
- Addition/Removal of a user from the system.
- Search for books or members.
- Renting out a book to a user

2. EER Model



The diagram illustrates a library database schema with the following entities and relationships:

- DOCUMENTS** (Attributes: DocID, Title, PDate, PublisherID)
- PUBLISHER** (Attributes: PublisherID, PubName, Address)
- BRANCH** (Attributes: Library ID, Name, Location)
- BOR_TRANSACTION** (Attributes: BorNumber, BorDateTime, RetDateTime)
- READER** (Attributes: ReaderID, ReadName, Phone number, Type, Address)
- RESERVATION** (Attributes: ResNumber, ResDateTime)
- COPY** (Attributes: CopyNo, DocID, LibID, Position)
- JOURNAL_ISSUE** (Attributes: DocID, IssueNo, Scope)
- JOURNAL_VOLUME** (Attributes: Doc ID, Volume number, Editor ID)
- PROCEEDINGS** (Attributes: Doc ID, CDate, CLocation, C.Editor)
- AUTHOR** (Attributes: Author ID, Author name)
- CHIEF_EDITOR** (Attributes: EditorID, EName)
- BOOK** (Attributes: Doc.ID, ISBN)
- EDITOR** (Attributes: Issue no., Doc ID, IName)
- WRITES** (Attributes: DocID, AuthorID)
- HAS** (Attributes: LibranID, Copy_No., DocID)
- BORROWS** (Attributes: Copy_No., BorNumber, DocID, ReaderID)
- RESERVES** (Attributes: ResNumber, ReaderID, Copy_No, DocID)
- DESCRIPTOR** (Attributes: DocID, Name)

Relationships are indicated by lines connecting the entities to their respective relationship sets (e.g., WRITES, HAS, BORROWS, RESERVES).

4. Additional Constraints

Additional Constraints that are implemented in the system:

- A reader can borrow or reserve only 10 copies at a time.
- A journal volume can have a maximum of 10 issues.
- The maximum return time of the issued copy of the document is 20 days.
- Documents to be fined at 30 cents per day if overdue.
- Each document has a single publisher.
- The copy of the document should be returned to the same issuing branch.
- The last pickup time for the reserved book is 6 pm of the assigned date, otherwise the reservation will be cancelled.
- A reader should register before borrowing a document.
- A journal has a single chief editor.
- A copy of the document can be lent to only one reader at a time.
- A document copy cannot be borrowed and returned several times in the same day.

5. DDL.sql and SQL queries to show keys and constraints

```
6. -- phpMyAdmin SQL Dump
7. -- version 4.7.4
8. -- https://www.phpmyadmin.net/
9. --
10. -- Host: 127.0.0.1
11. -- Generation Time: Dec 11, 2017 at 06:45 AM
12. -- Server version: 10.1.28-MariaDB
13. -- PHP Version: 7.1.10
14.
15. SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
16. SET AUTOCOMMIT = 0;
17. START TRANSACTION;
18. SET time_zone = "+00:00";
19.
20.
21. /*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
22. /*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
23. /*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
24. /*!40101 SET NAMES utf8mb4 */;
25.
26. --
27. -- Database: `library`
28. --
29.
30. -- -----
31.
32. --
33. -- Table structure for table `authors`
34. --
35.
36. CREATE TABLE `authors` (
37.   `author_id` int(11) NOT NULL,
38.   `author_name` varchar(50) NOT NULL,
39.   `create_date` date DEFAULT NULL,
40.   `create_time` time DEFAULT NULL,
41.   `modified_date` date DEFAULT NULL,
42.   `modified_time` time DEFAULT NULL,
43. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
44.
45. -- -----
46.
47. --
48. -- Table structure for table `book`
49. --
50.
51. CREATE TABLE `book` (
52.   `book_id` int(11) NOT NULL,
53.   `book_doc_id` int(11) DEFAULT NULL,
54.   `book_isbn` varchar(50) DEFAULT NULL,
55.   `book_is_deleted` int(11) DEFAULT '0'
56. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
57.
58. --
59. -- Dumping data for table `book`
60. --
61.
62. INSERT INTO `book` (`book_id`, `book_doc_id`, `book_isbn`, `book_is_deleted`) VALUES
63. (4, 22, '1100', 0),
64. (5, 23, '1200', 0),
65. (6, 24, '1300', 0),
66. (7, 25, '1400', 0),
67. (8, 26, '1500', 0);
68.
69. -- -----
70.
71. --
72. -- Table structure for table `borrow`
73. --
74.
75. CREATE TABLE `borrow` (
76.   `borrow_id` int(11) NOT NULL,
77.   `borrow_copy_id` int(11) DEFAULT NULL,
78.   `borrow_bt_borrow_number` int(11) DEFAULT NULL,
79.   `bt_doc_id` int(11) DEFAULT NULL,
80.   `borrow_reader_id` int(11) DEFAULT NULL,
81.   `borrow_date_time` timestamp NULL DEFAULT CURRENT_TIMESTAMP,
82.   `return_date_time` timestamp NULL DEFAULT NULL
```

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83. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
84.
85. --
86. -- Dumping data for table `borrow`
87. --
88.
89. INSERT INTO `borrow` (`borrow_id`, `borrow_copy_id`, `borrow_bt_borrow_number`, `bt_doc_id`,
    `borrow_reader_id`, `borrow_date_time`, `return_date_time`) VALUES
90. (17, 6, NULL, 22, 5, '2017-12-11 02:37:22', '2017-12-11 02:39:29'),
91. (18, 6, NULL, 22, 8, '2017-12-11 02:40:15', '2017-12-11 03:28:24'),
92. (19, 10, NULL, 24, 8, '2017-12-11 02:40:24', '2017-12-11 02:45:29'),
93. (20, 16, NULL, 27, 7, '2017-12-11 02:40:29', '2017-12-11 03:16:43');
94.
95. -- -----
96.
97. --
98. -- Table structure for table `borrower_transaction`
99. --
100.
101. CREATE TABLE `borrower_transaction` (
102.   `bt_borrow_number` int(11) NOT NULL,
103.   `bt_borrow_date_time` timestamp NULL DEFAULT CURRENT_TIMESTAMP,
104.   `bt_return_date_time` timestamp NULL DEFAULT NULL,
105.   `bt_borrow_id` int(11) DEFAULT NULL
106. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
107.
108. -- -----
109.
110. --
111. -- Table structure for table `branch`
112. --
113.
114. CREATE TABLE `branch` (
115.   `lib_branch_id` int(11) NOT NULL,
116.   `lib_branch_name` varchar(100) NOT NULL,
117.   `lib_branch_location` varchar(100) NOT NULL,
118.   `create_date_time` timestamp NULL DEFAULT CURRENT_TIMESTAMP
119. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
120.
121. --
122. -- Dumping data for table `branch`
123. --
124.
125. INSERT INTO `branch` (`lib_branch_id`, `lib_branch_name`, `lib_branch_location`, `create_date_time`)
    VALUES
126. (1, 'Van Houten Library', 'NJIT Newark', '2017-12-06 00:18:37'),
127. (2, 'Manhattan Library', 'New York', '2017-12-10 20:31:05');
128.
129. -- -----
130.
131. --
132. -- Table structure for table `chief_editor`
133. --
134.
135. CREATE TABLE `chief_editor` (
136.   `ce_id` int(11) NOT NULL,
137.   `ce_fname` varchar(50) NOT NULL,
138.   `ce_lname` varchar(50) DEFAULT NULL
139. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
140.
141. --
142. -- Dumping data for table `chief_editor`
143. --
144.
145. INSERT INTO `chief_editor` (`ce_id`, `ce_fname`, `ce_lname`) VALUES
146. (1, 'Rosie ', 'Donnell'),
147. (2, 'Arianna', 'Huffington'),
148. (3, 'Hugh ', 'Hefner'),
149. (4, 'Oliver', 'Stone'),
150. (5, 'Jacqueline ', 'Kennedy'),
151. (6, 'Christopher ', 'Nolan'),
152. (7, 'Alexa ', 'Chung'),
153. (8, 'Stan ', 'Lee'),
154. (9, 'Piers ', 'Morgan'),
155. (10, 'Tom ', 'Green');
156.
157. -- -----
158.
159. --
160. -- Table structure for table `copy`
161. --

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162.
163.CREATE TABLE `copy` (
164.  `copy_id` int(11) NOT NULL,
165.  `copy_num` int(11) NOT NULL,
166.  `copy_doc_id` int(11) DEFAULT NULL,
167.  `copy_lib_branch_id` int(11) DEFAULT NULL,
168.  `copy_position` int(6) DEFAULT NULL,
169.  `copy_is_borrowed` int(11) DEFAULT '0',
170.  `copy_is_deleted` int(11) DEFAULT '0'
171.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
172.
173.--
174.-- Dumping data for table `copy`
175.--
176.
177.INSERT INTO `copy` (`copy_id`, `copy_num`, `copy_doc_id`, `copy_lib_branch_id`, `copy_position`,
  `copy_is_borrowed`, `copy_is_deleted`) VALUES
178. (6, 1, 22, 1, 1, 0, 0),
179. (7, 2, 22, 1, 2, 0, 0),
180. (8, 1, 23, 1, 4, 0, 0),
181. (9, 2, 23, 1, 5, 0, 0),
182. (10, 1, 24, 1, 7, 0, 0),
183. (11, 2, 24, 1, 8, 0, 0),
184. (12, 1, 25, 1, 10, 0, 0),
185. (13, 2, 25, 1, 11, 0, 0),
186. (14, 1, 26, 1, 13, 0, 0),
187. (15, 2, 26, 1, 14, 0, 0),
188. (16, 1, 27, 1, 16, 0, 0),
189. (17, 2, 27, 1, 17, 0, 0),
190. (18, 1, 28, 1, 19, 0, 0),
191. (19, 2, 28, 1, 20, 0, 0),
192. (20, 1, 29, 1, 22, 0, 0),
193. (21, 2, 29, 1, 23, 0, 0),
194. (22, 1, 30, 1, 25, 0, 0),
195. (23, 2, 30, 1, 26, 0, 0),
196. (24, 1, 31, 1, 28, 0, 0),
197. (25, 3, 30, 1, 29, 0, 0),
198. (26, 2, 31, 1, 29, 0, 0);
199.
200.-- -----
201.
202.--
203.-- Table structure for table `copy_pos`
204.--
205.
206.CREATE TABLE `copy_pos` (
207.  `copy_pos_id` int(11) NOT NULL,
208.  `copy_pos_location` varchar(6) NOT NULL
209.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
210.
211.--
212.-- Dumping data for table `copy_pos`
213.--
214.
215.INSERT INTO `copy_pos` (`copy_pos_id`, `copy_pos_location`) VALUES
216. (1, '001A01'),
217. (2, '001A02'),
218. (3, '001A03'),
219. (4, '001B01'),
220. (5, '001B02'),
221. (6, '001B03'),
222. (7, '001C01'),
223. (8, '001C02'),
224. (9, '001C03'),
225. (10, '001D01'),
226. (11, '001D02'),
227. (12, '001D03'),
228. (13, '001E01'),
229. (14, '001E02'),
230. (15, '001E03'),
231. (16, '001F01'),
232. (17, '001F02'),
233. (18, '001F03'),
234. (19, '001G01'),
235. (20, '001G02'),
236. (21, '001G03'),
237. (22, '001H01'),
238. (23, '001H02'),
239. (24, '001H03'),
240. (25, '001I01'),
241. (26, '001I02'),
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242. (27, '001I03'),
243. (28, '001J01'),
244. (29, '001J02'),
245. (30, '001J03');
246.
247. -- -----
248.
249. --
250. -- Table structure for table `descriptor`
251. --
252.
253. CREATE TABLE `descriptor` (
254.   `descriptor_id` int(11) NOT NULL,
255.   `descriptor_doc_id` int(11) DEFAULT NULL,
256.   `descriptor_name` varchar(40) DEFAULT NULL
257. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
258.
259. -- -----
260.
261. --
262. -- Table structure for table `documents`
263. --
264.
265. CREATE TABLE `documents` (
266.   `doc_id` int(11) NOT NULL,
267.   `doc_title` varchar(50) NOT NULL,
268.   `doc_publisher_id` int(11) DEFAULT NULL,
269.   `create_date_time` timestamp NULL DEFAULT CURRENT_TIMESTAMP,
270.   `doc_dt_id` int(11) DEFAULT NULL,
271.   `doc_lib_branch_id` int(11) DEFAULT NULL,
272.   `doc_count_borrowed` int(11) DEFAULT '0',
273.   `doc_is_deleted` int(11) DEFAULT '0'
274. ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
275.
276. --
277. -- Dumping data for table `documents`
278. --
279.
280. INSERT INTO `documents` (`doc_id`, `doc_title`, `doc_publisher_id`, `create_date_time`, `doc_dt_id`,
   `doc_lib_branch_id`, `doc_count_borrowed`, `doc_is_deleted`) VALUES
281. (1, 'hhhhhhh', 3, '2017-12-05 22:40:25', NULL, 1, 0, 1),
282. (2, 'Cricket', 6, '2017-12-05 22:54:20', NULL, 1, 0, 1),
283. (3, 'Bowling for Columbine', 10, '2017-12-08 19:45:34', NULL, 1, 0, 1),
284. (4, 'Inside Job', 9, '2017-12-08 19:46:01', NULL, 1, 0, 1),
285. (5, 'The Smartest Guys in the Room', 8, '2017-12-08 19:46:18', NULL, 1, 0, 1),
286. (6, 'Why We Fight', 7, '2017-12-08 19:46:33', NULL, 1, 0, 1),
287. (7, 'Control Room', 6, '2017-12-08 19:46:48', NULL, 1, 0, 1),
288. (8, 'Banaz: A Love Story', 5, '2017-12-08 19:47:18', NULL, 1, 0, 1),
289. (9, 'The War You Don\'t See', 4, '2017-12-08 19:47:46', NULL, 1, 0, 1),
290. (10, 'Game of Thrones', 3, '2017-12-08 19:48:02', NULL, 1, 0, 1),
291. (11, 'Flash', 2, '2017-12-08 19:48:14', NULL, 1, 0, 1),
292. (12, 'Punisher', 1, '2017-12-08 19:48:59', NULL, 1, 0, 1),
293. (13, 'hhhhhhhhh', 3, '2017-12-08 23:40:33', 1, 1, 0, 1),
294. (14, 'hhhhhhhhh', 3, '2017-12-08 23:46:49', 1, 1, 0, 1),
295. (15, 'hhhhhhhhh', 3, '2017-12-08 23:50:20', 1, 1, 0, 1),
296. (16, 'hhhhhhhhh', 3, '2017-12-08 23:51:08', 1, 1, 0, 1),
297. (17, 'hhhhhhhhh', 3, '2017-12-09 00:01:09', 1, 1, 0, 1),
298. (18, 'dsvdsvdsvds', 4, '2017-12-09 00:02:34', 1, 1, 0, 1),
299. (19, 'rthyjhgfds', 6, '2017-12-09 00:28:52', 2, 1, 0, 1),
300. (20, 'asgdh', 2, '2017-12-10 20:53:14', 2, 2, 0, 1),
301. (21, 'iouyhjkhbkbg', 1, '2017-12-10 21:09:04', 1, 2, 0, 1),
302. (22, 'Killers of the Flower Moon', 10, '2017-12-11 02:12:11', 1, 1, 2, 0),
303. (23, 'Beartown', 9, '2017-12-11 02:12:30', 1, 1, 0, 0),
304. (24, 'Exit West', 8, '2017-12-11 02:12:52', 1, 1, 1, 0),
305. (25, 'Priestdaddy', 7, '2017-12-11 02:13:31', 1, 1, 0, 0),
306. (26, 'Lincoln in the Bardo', 6, '2017-12-11 02:13:54', 1, 1, 0, 0),
307. (27, 'The Impossible Fortress', 5, '2017-12-11 02:17:59', 2, 1, 1, 0),
308. (28, 'Hunger', 4, '2017-12-11 02:19:00', 2, 1, 0, 0),
309. (29, 'A Brief History of Tomorrow', 3, '2017-12-11 02:19:27', 2, 1, 0, 0),
310. (30, 'Desert Solitaire', 2, '2017-12-11 02:20:05', 2, 1, 0, 0),
311. (31, 'Geek Love', 1, '2017-12-11 02:20:26', 2, 1, 0, 0);
312.
313. -- -----
314.
315. --
316. -- Table structure for table `documents_type`
317. --
318.
319. CREATE TABLE `documents_type` (
320.   `dt_id` int(11) NOT NULL,
321.   `dt_name` varchar(20) DEFAULT NULL

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```
322.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
323.
324.--
325.-- Dumping data for table `documents_type`
326.--
327.
328.INSERT INTO `documents_type` (`dt_id`, `dt_name`) VALUES
329.(1, 'Book'),
330.(2, 'Journal Volume'),
331.(3, 'Journal Issue');
332.
333.-- -----
334.
335.--
336.-- Table structure for table `has`
337.--
338.
339.CREATE TABLE `has` (
340.  `has_id` int(11) NOT NULL,
341.  `has_lib_branch_id` int(11) DEFAULT NULL,
342.  `has_copy_num` int(11) DEFAULT NULL,
343.  `has_doc_id` int(11) DEFAULT NULL
344.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
345.
346.-- -----
347.
348.--
349.-- Table structure for table `ieditor`
350.--
351.
352.CREATE TABLE `ieditor` (
353.  `ieditor_id` int(11) NOT NULL,
354.  `ieditor_issue_num` int(11) DEFAULT NULL,
355.  `ieditor_doc_id` int(11) DEFAULT NULL,
356.  `ieditor_iname` varchar(50) DEFAULT NULL
357.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
358.
359.-- -----
360.
361.--
362.-- Table structure for table `journal_issue`
363.--
364.
365.CREATE TABLE `journal_issue` (
366.  `ji_id` int(11) NOT NULL,
367.  `ji_doc_id` int(11) DEFAULT NULL,
368.  `ji_issue_num` int(11) NOT NULL,
369.  `ji_scope` varchar(50) DEFAULT NULL,
370.  `ji_jv_id` int(11) DEFAULT NULL,
371.  `create_date_time` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP,
372.  `ji_is_deleted` int(11) DEFAULT '0'
373.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
374.
375.-- -----
376.
377.--
378.-- Table structure for table `journal_volume`
379.--
380.
381.CREATE TABLE `journal_volume` (
382.  `jv_id` int(11) NOT NULL,
383.  `jv_doc_id` int(11) DEFAULT NULL,
384.  `jv_vol_num` int(11) NOT NULL,
385.  `jv_editor_id` int(11) DEFAULT NULL,
386.  `jv_is_deleted` int(11) DEFAULT '0'
387.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
388.
389.--
390.-- Dumping data for table `journal_volume`
391.--
392.
393.INSERT INTO `journal_volume` (`jv_id`, `jv_doc_id`, `jv_vol_num`, `jv_editor_id`, `jv_is_deleted`)
394.VALUES
395.(3, 27, 2100, 1, 0),
396.(4, 28, 2200, 2, 0),
397.(5, 29, 2300, 3, 0),
398.(6, 30, 2400, 4, 0),
399.(7, 31, 2500, 5, 0);
400.-- -----
401.
```

```
402.--
403.-- Table structure for table `proceedings`
404.--
405.
406.CREATE TABLE `proceedings` (
407.  `proceedings_id` int(11) NOT NULL,
408.  `proceedings_doc_id` int(11) DEFAULT NULL,
409.  `proceedings_date` date DEFAULT NULL,
410.  `proceedings_location` varchar(50) DEFAULT NULL,
411.  `proceedings_editor` varchar(50) DEFAULT NULL
412.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
413.
414.-- -----
415.
416.--
417.-- Table structure for table `publisher`
418.--
419.
420.CREATE TABLE `publisher` (
421.  `publisher_id` int(11) NOT NULL,
422.  `publisher_name` varchar(50) DEFAULT NULL,
423.  `publisher_address` varchar(100) DEFAULT NULL,
424.  `create_date` date DEFAULT NULL,
425.  `create_time` time DEFAULT NULL
426.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
427.
428.--
429.-- Dumping data for table `publisher`
430.--
431.
432.INSERT INTO `publisher` (`publisher_id`, `publisher_name`, `publisher_address`, `create_date`,
  `create_time`) VALUES
433. (1, 'Penguin Random House', 'UK', '2017-12-05', '16:49:48'),
434. (2, 'Hachette Livre', 'UK', '2017-12-05', '16:49:48'),
435. (3, 'HarperCollins', 'UK', '2017-12-05', '16:49:48'),
436. (4, 'Pan Macmillan', 'UK', '2017-12-05', '16:49:48'),
437. (5, 'Pearson Education', 'Hoboken', '2017-12-05', '16:49:48'),
438. (6, 'Oxford University Press', 'UK', '2017-12-05', '16:49:48'),
439. (7, 'Bloomsbury', 'Pennsylvania', '2017-12-05', '16:49:48'),
440. (8, 'Random House', 'New York', '2017-12-05', '16:49:49'),
441. (9, 'Rare Bird Books', 'Los Angeles', '2017-12-05', '16:49:49'),
442. (10, 'Tin House', 'Portland', '2017-12-05', '16:49:49');
443.
444.-- -----
445.
446.--
447.-- Table structure for table `reader`
448.--
449.
450.CREATE TABLE `reader` (
451.  `reader_id` int(11) NOT NULL,
452.  `reader_fname` varchar(15) NOT NULL,
453.  `reader_lname` varchar(15) NOT NULL,
454.  `reader_phone_number` int(10) DEFAULT NULL,
455.  `reader_address` varchar(50) DEFAULT NULL,
456.  `reader_type_rt_id` int(11) DEFAULT NULL,
457.  `create_date` timestamp NULL DEFAULT CURRENT_TIMESTAMP,
458.  `reader_doc_borrowed` int(11) DEFAULT '0',
459.  `reader_is_deleted` int(11) DEFAULT '0'
460.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
461.
462.--
463.-- Dumping data for table `reader`
464.--
465.
466.INSERT INTO `reader` (`reader_id`, `reader_fname`, `reader_lname`, `reader_phone_number`,
  `reader_address`, `reader_type_rt_id`, `create_date`, `reader_doc_borrowed`, `reader_is_deleted`)
  VALUES
467. (5, 'Arman', 'Gupta', 9999, 'Jersey City', 2, '2017-12-11 00:45:19', 1, 0),
468. (6, 'Harsh', 'Shah', 8888, 'New York', 2, '2017-12-11 00:45:52', 0, 0),
469. (7, 'Manish', 'Tomar', 7777, 'Newark', 2, '2017-12-11 00:46:07', 1, 0),
470. (8, 'Shreerang', 'Paradkar', 6666, 'Harrison', 2, '2017-12-11 00:46:21', 2, 0);
471.
472.-- -----
473.
474.--
475.-- Table structure for table `reader_type`
476.--
477.
478.CREATE TABLE `reader_type` (
479.  `rt_id` int(11) NOT NULL,
```

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480. `rt_name` varchar(15) DEFAULT NULL,
481. `create_date_time` timestamp NULL DEFAULT CURRENT_TIMESTAMP
482.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
483.
484.--
485.-- Dumping data for table `reader_type`
486.--
487.
488.INSERT INTO `reader_type` (`rt_id`, `rt_name`, `create_date_time`) VALUES
489.(1, 'Staff', '2017-12-05 05:00:00'),
490.(2, 'Student', '2017-12-05 05:00:00');
491.
492.-- -----
493.
494.--
495.-- Table structure for table `reservation`
496.--
497.
498.CREATE TABLE `reservation` (
499.  `reservation_number` int(11) NOT NULL,
500.  `reservation_date` date DEFAULT NULL,
501.  `reservation_time` time DEFAULT NULL
502.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
503.
504.-- -----
505.
506.--
507.-- Table structure for table `reserves`
508.--
509.
510.CREATE TABLE `reserves` (
511.  `reserves_id` int(11) NOT NULL,
512.  `reserves_reservation_number` int(11) DEFAULT NULL,
513.  `reserves_reader_id` int(11) DEFAULT NULL,
514.  `reserves_copy_id` int(11) DEFAULT NULL,
515.  `reserves_doc_id` int(11) DEFAULT NULL
516.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
517.
518.-- -----
519.
520.--
521.-- Table structure for table `users`
522.--
523.
524.CREATE TABLE `users` (
525.  `user_id` int(11) NOT NULL,
526.  `username` varchar(15) NOT NULL,
527.  `password` varchar(15) NOT NULL,
528.  `create_date` date DEFAULT NULL,
529.  `create_time` time DEFAULT NULL,
530.  `modified_date` date DEFAULT NULL,
531.  `modified_time` time DEFAULT NULL,
532.  `is_admin` int(11) DEFAULT '0'
533.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
534.
535.--
536.-- Dumping data for table `users`
537.--
538.
539.INSERT INTO `users` (`user_id`, `username`, `password`, `create_date`, `create_time`, `modified_date`,
    `modified_time`, `is_admin`) VALUES
540.(1, 'library', 'admin', '2017-12-03', '20:45:22', NULL, NULL, 1);
541.
542.-- -----
543.
544.--
545.-- Table structure for table `writes`
546.--
547.
548.CREATE TABLE `writes` (
549.  `write_id` int(11) NOT NULL,
550.  `write_doc_id` int(11) DEFAULT NULL,
551.  `write_author_id` int(11) DEFAULT NULL
552.) ENGINE=InnoDB DEFAULT CHARSET=latin1;
553.
554.--
555.-- Indexes for dumped tables
556.--
557.
558.--
559.-- Indexes for table `authors`
```

```
560.--
561.ALTER TABLE `authors`
562.  ADD PRIMARY KEY (`author_id`);
563.
564.--
565.-- Indexes for table `book`
566.--
567.ALTER TABLE `book`
568.  ADD PRIMARY KEY (`book_id`),
569.  ADD KEY `book_doc_id` (`book_doc_id`);
570.
571.--
572.-- Indexes for table `borrow`
573.--
574.ALTER TABLE `borrow`
575.  ADD PRIMARY KEY (`borrow_id`),
576.  ADD KEY `borrow_copy_id` (`borrow_copy_id`),
577.  ADD KEY `borrow_bt_borrow_number` (`borrow_bt_borrow_number`),
578.  ADD KEY `bt_doc_id` (`bt_doc_id`),
579.  ADD KEY `bt_reader_id` (`borrow_reader_id`);
580.
581.--
582.-- Indexes for table `borrower_transaction`
583.--
584.ALTER TABLE `borrower_transaction`
585.  ADD PRIMARY KEY (`bt_borrow_number`);
586.
587.--
588.-- Indexes for table `branch`
589.--
590.ALTER TABLE `branch`
591.  ADD PRIMARY KEY (`lib_branch_id`);
592.
593.--
594.-- Indexes for table `chief_editor`
595.--
596.ALTER TABLE `chief_editor`
597.  ADD PRIMARY KEY (`ce_id`);
598.
599.--
600.-- Indexes for table `copy`
601.--
602.ALTER TABLE `copy`
603.  ADD PRIMARY KEY (`copy_id`),
604.  ADD KEY `copy_doc_id` (`copy_doc_id`),
605.  ADD KEY `copy_lib_branch_id` (`copy_lib_branch_id`),
606.  ADD KEY `fk1` (`copy_position`);
607.
608.--
609.-- Indexes for table `copy_pos`
610.--
611.ALTER TABLE `copy_pos`
612.  ADD PRIMARY KEY (`copy_pos_id`);
613.
614.--
615.-- Indexes for table `descriptor`
616.--
617.ALTER TABLE `descriptor`
618.  ADD PRIMARY KEY (`descriptor_id`),
619.  ADD KEY `descriptor_doc_id` (`descriptor_doc_id`);
620.
621.--
622.-- Indexes for table `documents`
623.--
624.ALTER TABLE `documents`
625.  ADD PRIMARY KEY (`doc_id`),
626.  ADD KEY `doc_publisher_id` (`doc_publisher_id`);
627.
628.--
629.-- Indexes for table `documents_type`
630.--
631.ALTER TABLE `documents_type`
632.  ADD PRIMARY KEY (`dt_id`);
633.
634.--
635.-- Indexes for table `has`
636.--
637.ALTER TABLE `has`
638.  ADD PRIMARY KEY (`has_id`),
639.  ADD KEY `has_lib_branch_id` (`has_lib_branch_id`),
640.  ADD KEY `has_copy_num` (`has_copy_num`),
```

```
641. ADD KEY `has_doc_id` (`has_doc_id`);
642.
643.--
644.-- Indexes for table `ieditor`
645.--
646.ALTER TABLE `ieditor`
647. ADD PRIMARY KEY (`ieditor_id`),
648. ADD KEY `ieditor_issue_num` (`ieditor_issue_num`),
649. ADD KEY `ieditor_doc_id` (`ieditor_doc_id`);
650.
651.--
652.-- Indexes for table `journal_issue`
653.--
654.ALTER TABLE `journal_issue`
655. ADD PRIMARY KEY (`ji_id`),
656. ADD KEY `ji_doc_id` (`ji_doc_id`);
657.
658.--
659.-- Indexes for table `journal_volume`
660.--
661.ALTER TABLE `journal_volume`
662. ADD PRIMARY KEY (`jv_id`),
663. ADD KEY `jv_doc_id` (`jv_doc_id`),
664. ADD KEY `jv_editor_id` (`jv_editor_id`);
665.
666.--
667.-- Indexes for table `proceedings`
668.--
669.ALTER TABLE `proceedings`
670. ADD PRIMARY KEY (`proceedings_id`),
671. ADD KEY `proceedings_doc_id` (`proceedings_doc_id`);
672.
673.--
674.-- Indexes for table `publisher`
675.--
676.ALTER TABLE `publisher`
677. ADD PRIMARY KEY (`publisher_id`);
678.
679.--
680.-- Indexes for table `reader`
681.--
682.ALTER TABLE `reader`
683. ADD PRIMARY KEY (`reader_id`),
684. ADD KEY `reader_type_rt_id` (`reader_type_rt_id`);
685.
686.--
687.-- Indexes for table `reader_type`
688.--
689.ALTER TABLE `reader_type`
690. ADD PRIMARY KEY (`rt_id`);
691.
692.--
693.-- Indexes for table `reservation`
694.--
695.ALTER TABLE `reservation`
696. ADD PRIMARY KEY (`reservation_number`);
697.
698.--
699.-- Indexes for table `reserves`
700.--
701.ALTER TABLE `reserves`
702. ADD PRIMARY KEY (`reserves_id`),
703. ADD KEY `reserves_reservation_number` (`reserves_reservation_number`),
704. ADD KEY `reserves_reader_id` (`reserves_reader_id`),
705. ADD KEY `reserves_copy_id` (`reserves_copy_id`),
706. ADD KEY `reserves_doc_id` (`reserves_doc_id`);
707.
708.--
709.-- Indexes for table `users`
710.--
711.ALTER TABLE `users`
712. ADD PRIMARY KEY (`user_id`);
713.
714.--
715.-- Indexes for table `writes`
716.--
717.ALTER TABLE `writes`
718. ADD PRIMARY KEY (`write_id`),
719. ADD KEY `write_doc_id` (`write_doc_id`),
720. ADD KEY `write_author_id` (`write_author_id`);
721.
```

```
722.--
723.-- AUTO_INCREMENT for dumped tables
724.--
725.
726.--
727.-- AUTO_INCREMENT for table `authors`
728.--
729.ALTER TABLE `authors`
730.  MODIFY `author_id` int(11) NOT NULL AUTO_INCREMENT;
731.
732.--
733.-- AUTO_INCREMENT for table `book`
734.--
735.ALTER TABLE `book`
736.  MODIFY `book_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=9;
737.
738.--
739.-- AUTO_INCREMENT for table `borrow`
740.--
741.ALTER TABLE `borrow`
742.  MODIFY `borrow_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=21;
743.
744.--
745.-- AUTO_INCREMENT for table `borrower_transaction`
746.--
747.ALTER TABLE `borrower_transaction`
748.  MODIFY `bt_borrow_number` int(11) NOT NULL AUTO_INCREMENT;
749.
750.--
751.-- AUTO_INCREMENT for table `branch`
752.--
753.ALTER TABLE `branch`
754.  MODIFY `lib_branch_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=3;
755.
756.--
757.-- AUTO_INCREMENT for table `chief_editor`
758.--
759.ALTER TABLE `chief_editor`
760.  MODIFY `ce_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=11;
761.
762.--
763.-- AUTO_INCREMENT for table `copy`
764.--
765.ALTER TABLE `copy`
766.  MODIFY `copy_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=27;
767.
768.--
769.-- AUTO_INCREMENT for table `copy_pos`
770.--
771.ALTER TABLE `copy_pos`
772.  MODIFY `copy_pos_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=31;
773.
774.--
775.-- AUTO_INCREMENT for table `descriptor`
776.--
777.ALTER TABLE `descriptor`
778.  MODIFY `descriptor_id` int(11) NOT NULL AUTO_INCREMENT;
779.
780.--
781.-- AUTO_INCREMENT for table `documents`
782.--
783.ALTER TABLE `documents`
784.  MODIFY `doc_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=32;
785.
786.--
787.-- AUTO_INCREMENT for table `documents_type`
788.--
789.ALTER TABLE `documents_type`
790.  MODIFY `dt_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=4;
791.
792.--
793.-- AUTO_INCREMENT for table `has`
794.--
795.ALTER TABLE `has`
796.  MODIFY `has_id` int(11) NOT NULL AUTO_INCREMENT;
797.
798.--
799.-- AUTO_INCREMENT for table `ieditor`
800.--
801.ALTER TABLE `ieditor`
802.  MODIFY `ieditor_id` int(11) NOT NULL AUTO_INCREMENT;
```

```
803.
804.--
805.-- AUTO_INCREMENT for table `journal_issue`
806.--
807.ALTER TABLE `journal_issue`
808.  MODIFY `ji_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=5;
809.
810.--
811.-- AUTO_INCREMENT for table `journal_volume`
812.--
813.ALTER TABLE `journal_volume`
814.  MODIFY `jv_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=8;
815.
816.--
817.-- AUTO_INCREMENT for table `proceedings`
818.--
819.ALTER TABLE `proceedings`
820.  MODIFY `proceedings_id` int(11) NOT NULL AUTO_INCREMENT;
821.
822.--
823.-- AUTO_INCREMENT for table `publisher`
824.--
825.ALTER TABLE `publisher`
826.  MODIFY `publisher_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=11;
827.
828.--
829.-- AUTO_INCREMENT for table `reader`
830.--
831.ALTER TABLE `reader`
832.  MODIFY `reader_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=9;
833.
834.--
835.-- AUTO_INCREMENT for table `reader_type`
836.--
837.ALTER TABLE `reader_type`
838.  MODIFY `rt_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=3;
839.
840.--
841.-- AUTO_INCREMENT for table `reservation`
842.--
843.ALTER TABLE `reservation`
844.  MODIFY `reservation_number` int(11) NOT NULL AUTO_INCREMENT;
845.
846.--
847.-- AUTO_INCREMENT for table `reserves`
848.--
849.ALTER TABLE `reserves`
850.  MODIFY `reserves_id` int(11) NOT NULL AUTO_INCREMENT;
851.
852.--
853.-- AUTO_INCREMENT for table `users`
854.--
855.ALTER TABLE `users`
856.  MODIFY `user_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=2;
857.
858.--
859.-- AUTO_INCREMENT for table `writes`
860.--
861.ALTER TABLE `writes`
862.  MODIFY `write_id` int(11) NOT NULL AUTO_INCREMENT;
863.
864.--
865.-- Constraints for dumped tables
866.--
867.
868.--
869.-- Constraints for table `book`
870.--
871.ALTER TABLE `book`
872.  ADD CONSTRAINT `book_ibfk_1` FOREIGN KEY (`book_doc_id`) REFERENCES `documents` (`doc_id`);
873.
874.--
875.-- Constraints for table `borrow`
876.--
877.ALTER TABLE `borrow`
878.  ADD CONSTRAINT `borrow_ibfk_1` FOREIGN KEY (`borrow_copy_id`) REFERENCES `copy` (`copy_id`),
879.  ADD CONSTRAINT `borrow_ibfk_2` FOREIGN KEY (`borrow_bt_borrow_number`) REFERENCES
    `borrower_transaction` (`bt_borrow_number`),
880.  ADD CONSTRAINT `borrow_ibfk_3` FOREIGN KEY (`bt_doc_id`) REFERENCES `documents` (`doc_id`),
881.  ADD CONSTRAINT `borrow_ibfk_4` FOREIGN KEY (`borrow_reader_id`) REFERENCES `reader` (`reader_id`);
882.
```

```
883.--
884.-- Constraints for table `copy`
885.--
886.ALTER TABLE `copy`
887.  ADD CONSTRAINT `copy_ibfk_1` FOREIGN KEY (`copy_doc_id`) REFERENCES `documents` (`doc_id`),
888.  ADD CONSTRAINT `copy_ibfk_2` FOREIGN KEY (`copy_lib_branch_id`) REFERENCES `branch`
  (`lib_branch_id`),
889.  ADD CONSTRAINT `fk1` FOREIGN KEY (`copy_position`) REFERENCES `copy_pos` (`copy_pos_id`);
890.--
891.--
892.-- Constraints for table `descriptor`
893.--
894.ALTER TABLE `descriptor`
895.  ADD CONSTRAINT `descriptor_ibfk_1` FOREIGN KEY (`descriptor_doc_id`) REFERENCES `documents`
  (`doc_id`);
896.--
897.--
898.-- Constraints for table `documents`
899.--
900.ALTER TABLE `documents`
901.  ADD CONSTRAINT `documents_ibfk_1` FOREIGN KEY (`doc_publisher_id`) REFERENCES `publisher`
  (`publisher_id`);
902.--
903.--
904.-- Constraints for table `has`
905.--
906.ALTER TABLE `has`
907.  ADD CONSTRAINT `has_ibfk_1` FOREIGN KEY (`has_lib_branch_id`) REFERENCES `branch` (`lib_branch_id`),
908.  ADD CONSTRAINT `has_ibfk_2` FOREIGN KEY (`has_copy_num`) REFERENCES `copy` (`copy_id`),
909.  ADD CONSTRAINT `has_ibfk_3` FOREIGN KEY (`has_doc_id`) REFERENCES `documents` (`doc_id`);
910.--
911.--
912.-- Constraints for table `ieditor`
913.--
914.ALTER TABLE `ieditor`
915.  ADD CONSTRAINT `ieditor_ibfk_1` FOREIGN KEY (`ieditor_issue_num`) REFERENCES `journal_issue`
  (`ji_id`),
916.  ADD CONSTRAINT `ieditor_ibfk_2` FOREIGN KEY (`ieditor_doc_id`) REFERENCES `documents` (`doc_id`);
917.--
918.--
919.-- Constraints for table `journal_issue`
920.--
921.ALTER TABLE `journal_issue`
922.  ADD CONSTRAINT `journal_issue_ibfk_1` FOREIGN KEY (`ji_doc_id`) REFERENCES `documents` (`doc_id`);
923.--
924.--
925.-- Constraints for table `journal_volume`
926.--
927.ALTER TABLE `journal_volume`
928.  ADD CONSTRAINT `journal_volume_ibfk_1` FOREIGN KEY (`jv_doc_id`) REFERENCES `documents` (`doc_id`),
929.  ADD CONSTRAINT `journal_volume_ibfk_2` FOREIGN KEY (`jv_editor_id`) REFERENCES `chief_editor`
  (`ce_id`);
930.--
931.--
932.-- Constraints for table `proceedings`
933.--
934.ALTER TABLE `proceedings`
935.  ADD CONSTRAINT `proceedings_ibfk_1` FOREIGN KEY (`proceedings_doc_id`) REFERENCES `documents`
  (`doc_id`);
936.--
937.--
938.-- Constraints for table `reader`
939.--
940.ALTER TABLE `reader`
941.  ADD CONSTRAINT `reader_ibfk_1` FOREIGN KEY (`reader_type_rt_id`) REFERENCES `reader_type` (`rt_id`);
942.--
943.--
944.-- Constraints for table `reserves`
945.--
946.ALTER TABLE `reserves`
947.  ADD CONSTRAINT `reserves_ibfk_1` FOREIGN KEY (`reserves_reservation_number`) REFERENCES
  `reservation` (`reservation_number`),
948.  ADD CONSTRAINT `reserves_ibfk_2` FOREIGN KEY (`reserves_reader_id`) REFERENCES `reader`
  (`reader_id`),
949.  ADD CONSTRAINT `reserves_ibfk_3` FOREIGN KEY (`reserves_copy_id`) REFERENCES `copy` (`copy_id`),
950.  ADD CONSTRAINT `reserves_ibfk_4` FOREIGN KEY (`reserves_doc_id`) REFERENCES `documents` (`doc_id`);
951.--
952.--
953.-- Constraints for table `writes`
954.--
955.ALTER TABLE `writes`
```



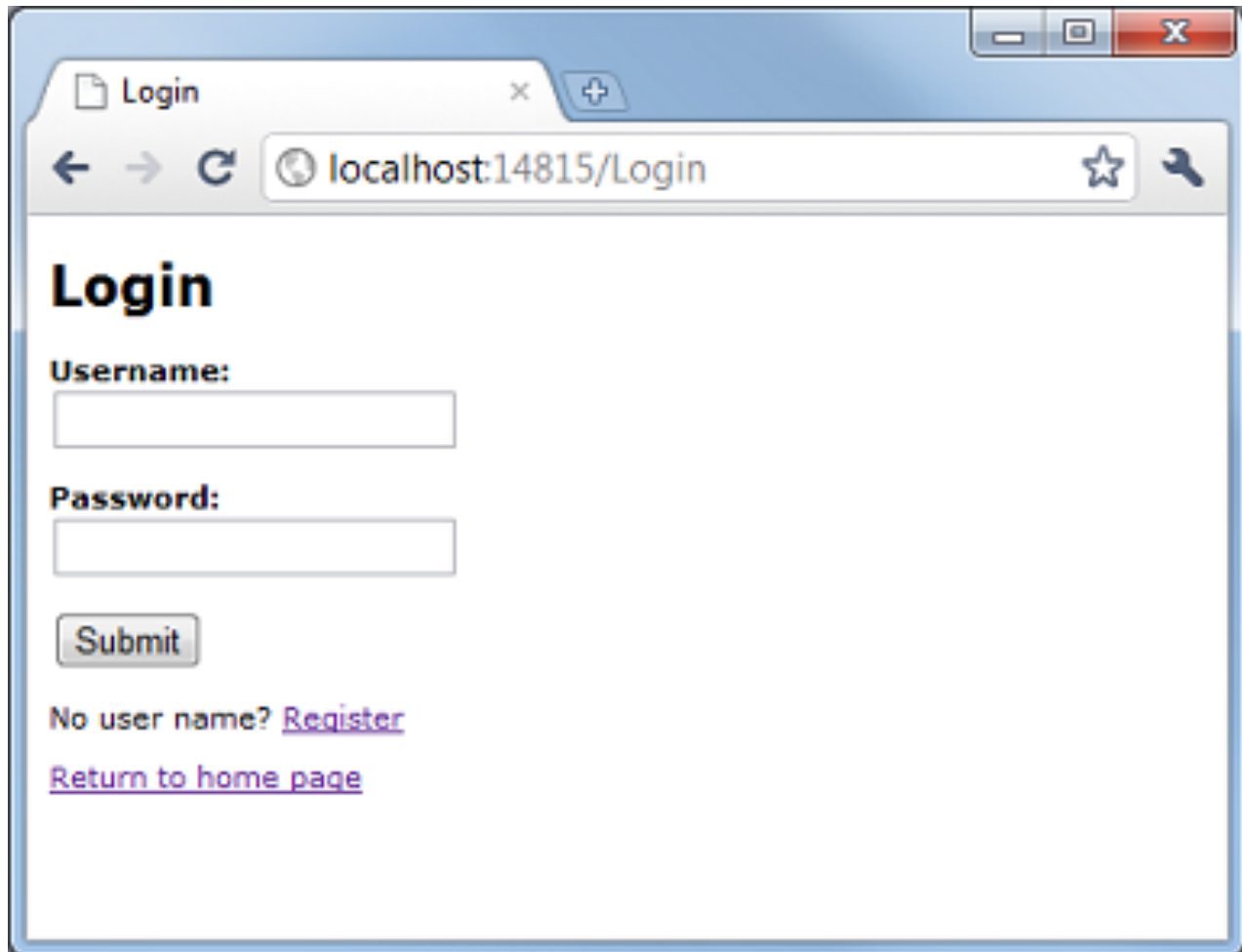
```
956.  ADD CONSTRAINT `writes_ibfk_1` FOREIGN KEY (`write_doc_id`) REFERENCES `documents` (`doc_id`),
957.  ADD CONSTRAINT `writes_ibfk_2` FOREIGN KEY (`write_author_id`) REFERENCES `authors` (`author_id`);
958. COMMIT;
959.
960. /*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
961. /*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
962. /*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
963.
```

6. SQL.sql file to show sample data

7. User Guide

- **Login**

Here is the login page of the system, where the user or an admin can login into their respective accounts and use different functionalities of the system that will be displayed further below.

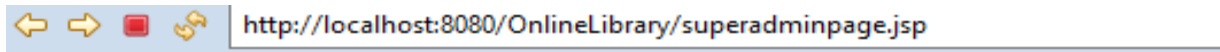


The screenshot shows a web browser window with a single tab titled 'Login'. The address bar displays 'localhost:14815/Login'. The page content includes a heading 'Login', followed by a 'Username:' label and an empty text input field. Below this is a 'Password:' label and another empty text input field. A 'Submit' button is positioned below the password field. At the bottom of the page, there is a link 'No user name? Register' and a link 'Return to home page'.

- **Admin**

- Homepage

Here the Admin will be able to access various functionality of the system.



Add Reader

①

Add Documents

Journal Volume Book Journal Issue

②

Display Reader

③

Display Documents

④

Issue a Document

⑤

Return a Document

⑥

Top 10 Document

⑦

Top 10 Reader

⑧

Search Documents

Doc ID Title Author

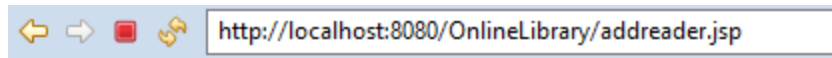
⑨

Reserved Books

⑩

1. Add Reader

The Admin can register a new user here.



Add Reader

First Name

Last Name

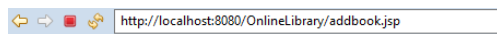
Number

Address

Reader Type

2. Add Document

Any new documents that are not in the system can be added from here.



Add Book

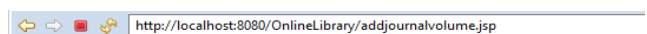
Title

No of copies

Publisher

Enter ISBN

Branch



Add Journal Volume

Title

No of copies

Publisher

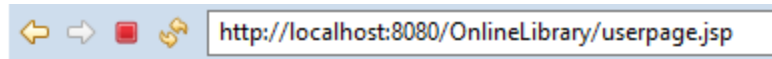
Volume Number Editor

Branch

- **User**

- **Homepage**

This is the homepage a user or a reader will be displayed after logging in to the system where they can access various different functionalities as displayed below in the image.



Display Documents

Top 10 Document

Search Documents
Doc ID Title

Reserve a Document

Reserved Documents

Documents Borrowed

8. Source Codes (.java)

❖ Login.java

```
package com.shree;
import java.io.*;
import javax.servlet.*;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
public class LoginDao
{
    String url="jdbc:mysql://localhost:3306/test";
    String username="root";
    String password="";
    public boolean check(String uname, String pwd) throws ClassNotFoundException
    {
        try
        {
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =
            DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","");
            //String query = "select * from login where
            username='"+username+"' and password='"+password+"'";
            String query = "select * from users";
            Statement st = con.createStatement();
            ResultSet rs = st.executeQuery(query);
            if(rs.next())
            {
                return true;
                //System.out.println("hello");
            }
        }
        catch (Exception e)
        {
            e.printStackTrace();
        }
        return false;
    }
}
```

○ AddCopy.java

```
package com.shree;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/AddCopy")
public class AddCopy extends HttpServlet
{
    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException
    {
        int doc_id =
Integer.parseInt(request.getParameter("document"));
        int copynum =
Integer.parseInt(request.getParameter("copynum"));
        int branch_id =
Integer.parseInt(request.getParameter("branch"));
        int copy_position =
Integer.parseInt(request.getParameter("copyposition"));

        //System.out.println(doc_id+" "+copynum+" "+branch_id+"
"+copy_position);
        AddCopyDao acDao = new AddCopyDao();
        try
        {
            if(acDao.addCopy(copynum, doc_id, branch_id,
copy_position))
            {
                response.sendRedirect("welcome.jsp");
            }
        }
        catch (Exception e)
        {
            e.printStackTrace();
        }
    }
}
```


○ AddCopyDao.java

```
package com.shree;

import com.mysql.jdbc.PreparedStatement;
import java.sql.Connection;
import java.sql.DriverManager;

public class AddCopyDao
{
    public boolean addCopy(int copynum, int document, int branch, int copyposition)
    throws ClassNotFoundException
    {
        try
        {
            Connection con = Database.getConnection();

            String query = "insert into copy (copy_num, copy_doc_id,
            copy_lib_branch_id,copy_position) values (?,?=?,?)";

            PreparedStatement ps = (PreparedStatement)
            con.prepareStatement(query);

            ps.setInt(1, copynum);
            ps.setInt(2, document);
            ps.setInt(3, branch);
            ps.setInt(4, copyposition);

            int insertQuery = ps.executeUpdate();

            if(insertQuery!=0)
            {
                return true;

                //System.out.println("hello");
            }
        }
    }
}
```

```
        }  
    }  
    catch (Exception e)  
    {  
        e.printStackTrace();  
    }  
    return false;  
}  
}
```

○ AddDocument.java

```
package com.shree;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/AddDocument")
public class AddDocument extends HttpServlet
{
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
        int doc_type = Integer.parseInt(request.getParameter("doctype"));

        if(doc_type==1)
        {
            int isbn = Integer.parseInt(request.getParameter("isbn"));
            String title = request.getParameter("title");
            int copies = Integer.parseInt(request.getParameter("copies"));
            int publisher_id = Integer.parseInt(request.getParameter("publisher"));
```

```
int branch = Integer.parseInt(request.getParameter("branch"));

//System.out.println(title+" "+copies+" "+publisher_id+" "+doc_type+" "+isbn);

AddDocumentDao adDao = new AddDocumentDao();

try
{
    if(adDao.addBook(title, copies, publisher_id, doc_type, isbn, branch))
    {
        response.sendRedirect("welcome.jsp");
    }
}
catch (Exception e)
{
    e.printStackTrace();
}

if(doc_type==2)
{
    int volumenumber =
Integer.parseInt(request.getParameter("volumenumber"));

    int editor = Integer.parseInt(request.getParameter("editor"));

    String title = request.getParameter("title");

    int copies = Integer.parseInt(request.getParameter("copies"));

    int publisher_id = Integer.parseInt(request.getParameter("publisher"));

    int branch = Integer.parseInt(request.getParameter("branch"));
```

```
//System.out.println(volumenumber+" "+editor+" "+title+ " "+copies+"
"+publisher_id+ " "+branch);

AddDocumentDao adDao = new AddDocumentDao();

try
{
    if(adDao.addJournalVolume(title, copies, publisher_id, doc_type,
volumenumber, editor, branch))
    {
        response.sendRedirect("welcome.jsp");
    }
}
catch (Exception e)
{
    e.printStackTrace();
}

if(doc_type==3)
{
    int issuenumber = Integer.parseInt(request.getParameter("issuenumber"));
    int volume = Integer.parseInt(request.getParameter("volume"));
    int docid = Integer.parseInt(request.getParameter("docid"));
    //System.out.println(issuenumber+" "+volume+" "+docid);

    AddDocumentDao adDao = new AddDocumentDao();
    try
```

```
        {  
            if(adDao.addJournalIssue(issuenumber, volume, docid))  
            {  
                response.sendRedirect("welcome.jsp");  
            }  
        }  
        catch (Exception e)  
        {  
            e.printStackTrace();  
        }  
    }  
}  
}
```

○ AddReader.java

```
package com.shree;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/AddReader")
public class AddReader extends HttpServlet
{
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
        String fname = request.getParameter("fname");
        String lname = request.getParameter("lname");
        String address = request.getParameter("address");
        int number = Integer.parseInt(request.getParameter("number"));
        int type = Integer.parseInt(request.getParameter("type"));

        //System.out.println(fname+" "+lname+" "+address+" "+number+" "+type);

        AddReaderDao arDao = new AddReaderDao();
```

```
        try
        {
            if(arDao.addReader(fname, lname, address, number, type))
            {
                response.sendRedirect("welcome.jsp");
            }
        }
        catch (Exception e)
        {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
    }
}
```


○ IssueCopy.java

```
package com.shree;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/IssueCopy")
public class IssueCopy extends HttpServlet
{
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
        int copy_id = Integer.parseInt(request.getParameter("copyid"));
        int reader_id = Integer.parseInt(request.getParameter("reader"));
        int doc_id = Integer.parseInt(request.getParameter("docid"));
        //System.out.println(reader_id+" "+copy_id+" "+doc_id);

        IssueCopyDao icDao = new IssueCopyDao();

        try
        {
```

```
        if(icDao.issueCopy(copy_id, reader_id, doc_id))
        {
            response.sendRedirect("welcome.jsp");
        }
    }
    catch (Exception e)
    {
        // TODO Auto-generated catch block
        e.printStackTrace();
    }
}
```

○ IssueCopyDao.java

```
package com.shree;
```

```
import com.mysql.jdbc.PreparedStatement;
```

```
import com.mysql.jdbc.Statement;
```

```
import java.sql.Connection;
```

```
import java.sql.DriverManager;
```

```
import java.sql.ResultSet;
```

```
public class IssueCopyDao
```

```
{
```

```
    public boolean issueCopy(int copyid, int readerid, int docid) throws  
    ClassNotFoundException
```

```
    {
```

```
        try
```

```
        {
```

```
            Connection con = Database.getConnection();
```

```
            String query = "insert into borrow (borrow_copy_id, borrow_reader_id,  
bt_doc_id) values (?, ?, ?)";
```

```
            PreparedStatement ps = (PreparedStatement)  
con.prepareStatement(query);
```

```
            ps.setInt(1, copyid);
```

```
            ps.setInt(2, readerid);
```

```
            ps.setInt(3, docid);
```

```
int insertQuery = ps.executeUpdate();

if(insertQuery!=0)
{
    String query1 = "update copy set copy_is_borrowed = ? where
copy_id = ?";

    int copyisborrowed=1;

    PreparedStatement ps1 = (PreparedStatement)
con.prepareStatement(query1);

    ps1.setInt(1, copyisborrowed);
    ps1.setInt(2, copyid);

    int insertQuery1 = ps1.executeUpdate();

    if(insertQuery1 != 0)
    {

        int count=0;

        Statement st10 = (Statement) con.createStatement();

        String query10 = "select * from documents where doc_id =
"+docid+"";

        ResultSet rs10 = st10.executeQuery(query10);

        while(rs10.next())
        {
            count = rs10.getInt("doc_count_borrowed")+ 1;
```

```
String queryupdatecountborrowed = "update documents set  
doc_count_borrowed = ? where doc_id = ?";
```

```
PreparedStatement pscountborrowed =  
(PreparedStatement) con.prepareStatement(queryupdatecountborrowed);
```

```
pscountborrowed.setInt(1, count);
```

```
pscountborrowed.setInt(2, docid);
```

```
int insertQuery2 = pscountborrowed.executeUpdate();
```

```
if(insertQuery2 != 0)
```

```
{
```

```
int readercountborrowed=0;
```

```
Statement st11 = (Statement) con.createStatement();
```

```
String query11 = "select * from reader where  
reader_id = '"+readerid+"'";
```

```
ResultSet rs11 = st11.executeQuery(query11);
```

```
while(rs11.next())
```

```
{
```

```
readercountborrowed =  
rs11.getInt("reader_doc_borrowed")+ 1;
```

```
String queryupdatereader = "update reader  
set reader_doc_borrowed = ? where reader_id = ?";
```

```
PreparedStatement psreadercountborrowed  
= (PreparedStatement) con.prepareStatement(queryupdatereader);
```

```
psreadercountborrowed.setInt(1,  
readercountborrowed);
```

```
psreadercountborrowed.setInt(2, readerid);
```

```
psreadercountborrowed.executeUpdate();

        int insertQuery3 =

        if(insertQuery3 != 0)
        {
            return true;
        }
    }
}

}

}

}

//System.out.println("hello");

}

}

catch (Exception e)
{
    e.printStackTrace();
}

return false;

}

}
```

○ **ReturnDocument.java**

```
package com.shree;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

@WebServlet("/ReturnDocument")

public class ReturnDocument extends HttpServlet
{
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
        int copy_id = Integer.parseInt(request.getParameter("copyid"));
        int reader_id = Integer.parseInt(request.getParameter("readerid"));
        int doc_id = Integer.parseInt(request.getParameter("docid"));
        int borrow_id = Integer.parseInt(request.getParameter("borrowid"));

        //System.out.println(reader_id+" "+copy_id+" "+doc_id);

        ReturnDocumentDao rdDao = new ReturnDocumentDao();

        try
```

```
        {  
            if(rdDao.returnCopy(copy_id, reader_id, doc_id, borrow_id))  
            {  
                response.sendRedirect("welcome.jsp");  
            }  
        }  
    catch (Exception e)  
    {  
        // TODO Auto-generated catch block  
        e.printStackTrace();  
    }  
}  
}
```


❖ Source Codes (.jsp)

○ Index.jsp

```
<html>
```

```
<body>
```

```
<form action="Login">
```

```
<h1>Login Form</h1><!--END TITLE-->
```

```
<!--USERNAME--><input name="username" type="text" class="input username"
placeholder="Username" onfocus="this.value=""" required/><!--END USERNAME-->
```

```
<!--PASSWORD--><input name="password" type="password" class="input password"
placeholder="Password" onfocus="this.value=""" value="Username" required/><!--END
PASSWORD-->
```

```
<!--LOGIN BUTTON--><input type="submit" name="submit" value="Login" class="button"
/><!--END LOGIN BUTTON-->
```

```
</form>
```

```
</body>
```

```
</html>
```

○ Welcome.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Insert title here</title>

<a href="addreader.jsp"><h2>Add Reader</h2></a>

<p><h2>Add Documents</h2></p>

<a href="addjournalvolume.jsp">Journal Volume</a>

<a href="addbook.jsp">Book</a>

<a href="addjournalissue.jsp">Journal Issue</a>

<a href="displayreader.jsp"><h2>Display Reader</h2></a>

<a href="displaydocuments.jsp"><h2>Display Documents</h2></a>

<a href="documentissue.jsp"><h2>Issue a Document</h2></a>

<a href="returndocument.jsp"><h2>Return a Document</h2></a>

</head>

<body>

</body>

</html>
```

○ AddReader.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

    <%

        Connection con = Database.getConnection();

        Statement st = con.createStatement();

        String query = "select * from reader_type";

        ResultSet rs = st.executeQuery(query);

    %>

<form action="AddReader" method="get">

<h1>Add Reader</h1>

First Name <input name="fname" type="text"/><br><br>

Last Name   <input name="lname" type="text"/><br><br>

Number      <input name="number" type="text"/><br><br>

Address      <input name="address" type="text"/><br><br>

Reader Type

<select name="type">
```

```
<option value=""></option>

<% while(rs.next())

    {

%>

    <option value="<%=rs.getString("rt_id") %>"><%=rs.getString("rt_name") %></option>

    <%

        }

%>

</select>

<input type = "submit" value = "Submit" />

</form>

</head>

<body>

</body>

</html>
```

○ SubmitReader.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
```

```
    pageEncoding="ISO-8859-1"%>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
```

```
<title>Insert title here</title>
```

```
Firstname ===== <%= request.getParameter("fname")%><br><br>
```

```
Lastname ===== <%= request.getParameter("lname")%><br><br>
```

```
number ===== <%= request.getParameter("number")%><br><br>
```

```
address ===== <%= request.getParameter("address")%><br><br>
```

```
type ===== <%= request.getParameter("type")%><br><br>
```

```
</head>
```

```
<body>
```

```
</body>
```

```
</html>
```

○ AddDocuments.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
```

```
    pageEncoding="ISO-8859-1"%>
```

```
    <%@ page import="java.sql.*" %>
```

```
    <%@ page import="com.shree.*" %>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
```

```
<title>Insert title here</title>
```

```
</head>
```

```
<body>
```

```
    <%
```

```
        Connection con = Database.getConnection();
```

```
        Statement st = con.createStatement();
```

```
        String query = "select * from publisher";
```

```
        ResultSet rs = st.executeQuery(query);
```

```
    %>
```

```
<form action="AddDocument" method="get">
```

```
<h1>Add Document</h1>
```

```
Title  <input name="title" type="text"/><br><br>
```

```
No of copies      <input name="copies" type="text"/><br><br>
```

```
Publisher
```

```
<select name="publisher">
<option value=""></option>
<% while(rs.next())
    {
%>
    <option value="<%=rs.getString("publisher_id") %>"><%=rs.getString("publisher_name")
%></option>
<%
    }
%>
</select>
<br><br><br><input type = "submit" value = "Submit" />
</form>
</body>
</html>
```

○ AddBook.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
```

```
    pageEncoding="ISO-8859-1"%>
```

```
    <%@ page import="java.sql.*" %>
```

```
    <%@ page import="com.shree.*" %>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
```

```
<title>Add Books</title>
```

```
</head>
```

```
<body>
```

```
    <%
```

```
        Connection con = Database.getConnection();
```

```
        Statement st = con.createStatement();
```

```
        String query = "select * from publisher";
```

```
        ResultSet rs = st.executeQuery(query);
```

```
    %>
```

```
<form action="AddDocument" method="get">
```

```
<h1>Add Book</h1>
```

```
Title  <input name="title" type="text"/><br><br>
```

```
No of copies      <input name="copies" type="text"/><br><br>
```

```
Publisher
```



```
<select name="publisher">

<option value=""></option>

<% while(rs.next())

    {

%>

    <option value="<%=rs.getString("publisher_id") %>"><%=rs.getString("publisher_name")
%></option>

<%

    }

%>

</select><br><br>

Enter ISBN <input name="isbn" type="text">

<br><br>Branch

<select name="branch">

<option value=""></option>

<%

Statement st7 = con.createStatement();

String query7 = "select * from branch";

ResultSet rs7 = st7.executeQuery(query7);

while(rs7.next())

    {

%>

    <option value="<%=rs7.getString("lib_branch_id")
%>"><%=rs7.getString("lib_branch_name") %>, <%=rs7.getString("lib_branch_location")
%></option>
```

<%

}

%>

</select><input name="doctype" type="hidden" value='1'/>

<input type = "submit" value = "Submit" />

</form>

</body>

</html>

○ AddCopy.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
    <%@ page import="java.sql.*" %>
    <%@ page import="com.shree.*" %>
    <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
    "http://www.w3.org/TR/html4/loose.dtd">
    <html>
    <head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
    <title>Insert title here</title>
    </head>
    <body>
        <%
            Connection con = Database.getConnection();
            Statement st1 = con.createStatement();
            Statement st2 = con.createStatement();
            Statement st3 = con.createStatement();
            String query1 = "select * from documents where doc_is_deleted != 1";
            ResultSet rs1 = st1.executeQuery(query1);
            String query2 = "select * from copy_pos";
            ResultSet rs2 = st2.executeQuery(query2);
            String query3 = "select * from branch";
            ResultSet rs3 = st3.executeQuery(query3);
        %>
```

```
<form action="AddCopy" method="get">
```

```
<h1>Add Copy of a Document</h1>
```

Document <select name="document">

```
<option value=""></option>
```

```
<% while(rs1.next())
```

```
{
```

```
%>
```

```
<option value="<%=rs1.getString("doc_id") %>"><%=rs1.getString("doc_title") %></option>
```

```
<%
```

```
}
```

```
%>
```

```
</select><br><br>
```

Copy Number <input name="copynum" type="text"/>

Branch

```
<select name="branch">
```

```
<option value=""></option>
```

```
<% while(rs3.next())
```

```
{
```

```
%>
```

```
<option value="<%=rs3.getString("lib_branch_id")  
%>"><%=rs3.getString("lib_branch_name") %>, <%=rs3.getString("lib_branch_location")  
%></option>
```

```
<%
```

```
}
```

```
%>
```

```
</select><br><br>
```

Copy Position

```
<select name="copyposition">

  <option value=""></option>

  <% while(rs2.next())

    {

%>

    <option                                value="<%=rs2.getString("copy_pos_id")
%>"><%=rs2.getString("copy_pos_location") %></option>

    <%

      }

%>

</select><br><br>

<input type = "submit" value = "Submit" />

</form>

<br><br><br><br><br><br>

  <a href="welcome.jsp">Back to previous Page</a>

</body>

</html>
```

○ AddJournalIssue.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
```

```
    pageEncoding="ISO-8859-1"%>
```

```
    <%@ page import="java.sql.*" %>
```

```
    <%@ page import="com.shree.*" %>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
```

```
<title>Add Journal Issue</title>
```

```
</head>
```

```
<body>
```

```
    <%
```

```
        Connection con = Database.getConnection();
```

```
    %>
```

```
<form action="AddDocument" method="get">
```

```
<h1>Add Journal Issue</h1>
```

Journal Volume

```
<select name="volume">
```

```
<option value=""></option>
```

```
<%
```

```
Statement st1 = con.createStatement();
```

```
String query1 = "select * from documents d, journal_volume j where d.doc_id = j.jv_doc_id and  
d.doc_is_deleted!=1";
```

```
ResultSet rs1 = st1.executeQuery(query1);
```

```
while(rs1.next())
```

```
{
```

```
%>
```

```
<option value="<%=rs1.getString("j.jv_id") %>"><%=rs1.getString("doc_title") %></option>
```

```
<%
```

```
}
```

```
%>
```

```
</select>
```

```
<%
```

```
Statement st2 = con.createStatement();
```

```
String query2 = "select * from documents d, journal_volume j where d.doc_id = j.jv_doc_id and  
d.doc_is_deleted!=1";
```

```
ResultSet rs2 = st2.executeQuery(query2);
```

```
while(rs2.next())
```

```
{
```

```
%>
```

```
<input name="docid" type="hidden" value="<%=rs2.getInt("j.jv_doc_id") %>"/>
```

```
<%
```

```
}
```

%>

</select>

Issue Number <input name="issuenumber" type="text">

<input name="doctype" type="hidden" value='3' />

<input type = "submit" value = "Submit" />

</form>

</body>

</html>

○ AddJournalVolume.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Add Journal Volume</title>

</head>

<body>

    <%

        Connection con = Database.getConnection();

        Statement st = con.createStatement();

        String query = "select * from publisher";

        ResultSet rs = st.executeQuery(query);

    %>

    <form action="AddDocument" method="get">

    <h1>Add Journal Volume</h1>

    Title  <input name="title" type="text"/><br><br>

    No of copies      <input name="copies" type="text"/><br><br>
```

Publisher

```
<select name="publisher">
<option value=""></option>

<% while(rs.next())
    {
%>

    <option value="<%=rs.getString("publisher_id") %>"><%=rs.getString("publisher_name")
%></option>

<%
    }
%>

</select><br><br>
```

Volume Number <input name="volumenumber" type="text">

Editor

```
<select name="editor">
<option value=""></option>

<%

Statement st1 = con.createStatement();

String query1 = "select * from chief_editor";

ResultSet rs1 = st.executeQuery(query1);

while(rs1.next())
    {
%>

    <option value="<%=rs1.getString("ce_id") %>"><%=rs1.getString("ce_fname")
%><%=rs1.getString("ce_lname") %></option>
```

```
<%  
    }  
%>  
  
</select>  
  
<br><br>Branch  
  
<select name="branch">  
  
<option value=""></option>  
  
<%  
  
Statement st7 = con.createStatement();  
  
String query7 = "select * from branch";  
  
ResultSet rs7 = st7.executeQuery(query7);  
  
while(rs7.next())  
  
    {  
  
%>  
  
    <option                                value="<%=rs7.getString("lib_branch_id")  
%>"><%=rs7.getString("lib_branch_name")    %>,    <%=rs7.getString("lib_branch_location")  
%></option>  
  
<%  
  
    }  
  
%>  
  
</select><input name="doctype" type="hidden" value='2'/><br><br>  
  
<br><input type = "submit" value = "Submit" />  
  
</form>  
  
</body>  
  
</html>
```

○ CopyIssue.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Issue Copy</title>
</head>
<body>

    <%
        Connection con = Database.getConnection();
        Statement st = con.createStatement();

        int docid = Integer.parseInt(request.getParameter("docid"));

        String query = "select * from documents d, copy c, copy_pos cp where d.doc_id =
        '"+docid+"' and c.copy_doc_id = d.doc_id and cp.copy_pos_id = c.copy_position";

        ResultSet rs = st.executeQuery(query);

        while(rs.next())
            { %>
```

```
<form action="IssueCopy" method="GET">

    <p>Copy Number - <%=rs.getInt("copy_num") %>

                                &emsp;&emsp;&emsp;&emsp;Copy Position - <%=
rs.getString("copy_pos_location") %>

                                &emsp;&emsp;&emsp;&emsp;

    <select name="reader">

        <option value=""></option>

        <%

            Statement st1 = con.createStatement();

            String query1 = "select * from reader";

            ResultSet rs1 = st1.executeQuery(query1);

            while (rs1.next())

                {

                    <option value="<%=rs1.getInt("reader_id")
%>"><%=rs1.getInt("reader_id") %> - <%=rs1.getString("reader_fname") %>
<%=rs1.getString("reader_lname") %></option>

                    <%

                        }

                    %>

                </select>

                                &emsp;&emsp;&emsp;&emsp;
```

```

                                <input          name="copyid"          type="hidden"
value="<%=rs.getInt("copy_id") %>">

                                <input    name="docid"    type="hidden"    value="<%=
Integer.parseInt(request.getParameter("docid")) %>">

                                <input type = "submit" value = "Issue" />

                                </p>

                                </form>

                                <%

                                }

                                %>

</body>

</html>
```

○ DocumentIssue.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Document Issue</title>
</head>
<body>

    <%

        Connection con = Database.getConnection();

        Statement st4 = con.createStatement();

        String query4 = "select * from branch b, documents d, publisher p where
d.doc_publisher_id = p.publisher_id and d.doc_lib_branch_id = lib_branch_id and
d.doc_is_deleted!=1";

        ResultSet rs4 = st4.executeQuery(query4);

        //int docid = Integer.parseInt(request.getParameter("docid"));

        while(rs4.next())
        {
```

```

                                %>

                                <br><p>Title    -    <strong><%=rs4.getString("doc_title")
%></strong>

                                &emsp;&emsp;&emsp;&emsp;Publisher - '<strong><%=
rs4.getString("publisher_name") %></strong>'

                                <br>Branch
                                -
                                <strong><%=rs4.getString("lib_branch_name") %>, <%=rs4.getString("lib_branch_location")
%></strong>

                                &emsp;&emsp;&emsp;&emsp;<a
href=copyissue.jsp?docid=<%= rs4.getInt("doc_id") %>>Issue a Copy</a>

                                <%
                                }

                                %>

                                <br><br><br>

                                <a href="welcome.jsp">Back to previous Page</a>

</body>

</html>
```


○ ReturnDocument.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Return Document</title>
</head>
<body>

    <%

        Connection con = Database.getConnection();

        Statement st = con.createStatement();

        String query = "select * from copy c, borrow b, reader r, documents d where c.copy_id =
b.borrow_copy_id and b.borrow_reader_id = r.reader_id and d.doc_id = c.copy_doc_id and
copy_is_borrowed=1 and b.return_date_time is null";

        ResultSet rs = st.executeQuery(query);

        Statement st1 = con.createStatement();

        String query1 = "select count(*) as total from copy where copy_is_borrowed=1";

        ResultSet rs1 = st1.executeQuery(query1);
```

```

while(rs1.next())
{
    if(rs1.getInt("total")==0)
    { %>
        <br><p><strong>No Documents Issued</strong></p>
    <%    }
}

while(rs.next())
{
    %>
    <form action="ReturnDocument" method="get">
    <p> Doc ID : <strong><%= rs.getString("copy_doc_id") %></strong>
        &emsp;&emsp;&emsp;Copy      Num      :      <strong><%=
rs.getInt("copy_num") %></strong>
        &emsp;&emsp;&emsp;Doc      Title      :      <strong><%=
rs.getString("doc_title") %></strong>
        &emsp;&emsp;&emsp;Borrowed    by      :      <strong><%=
rs.getString("reader_fname") %></strong>
        &emsp;&emsp;&emsp;Borrowed    on      :      <%=
rs.getDate("borrow_date_time") %>
        &emsp;&emsp;&emsp;
        <input      name="docid"      type="hidden"      value="<%=
rs.getString("copy_doc_id") %>">
        <input      name="copyid"      type="hidden"      value="<%=
rs.getString("copy_id") %>">
        <input      name="readerid"      type="hidden"      value="<%=
rs.getString("reader_id") %>">

```

```
rs.getString("borrow_id") %>">
    <input    name="borrowid"    type="hidden"    value="<%=
```

```
<input type = "submit" value ="Return" /></p>
```

```
</p>
```

```
</form>
```

```
<%
```

```
}
```

```
%>
```

```
<br>
```

```
<a href="welcome.jsp">Back to previous Page</a>
```

```
</body>
```

```
</html>
```

○ DisplayReader.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

    <%
        Connection con = Database.getConnection();
        Statement st = con.createStatement();

        String query = "select * from reader r, reader_type rt where r.reader_type_rt_id =
rt.rt_id and reader_is_deleted!=1";

        ResultSet rs = st.executeQuery(query);
    %>

    <br><p><strong>&emsp;&emsp;&emsp;&emsp;List of Readers</strong></p>

    <table class="table" border="1">

        <caption style="text-align:center"></caption>

        <thead>
```

```
<tr>

    <th>Id</th>

    <th>First Name</th>

    <th>Last Name</th>

    <th>Phone Number</th>

    <th>Address</th>

    <th>Reader Type</th>

</tr>

</thead>

<tbody>

    <% while(rs.next())

        {

    %>

    <tr>

        <td><%=rs.getInt("reader_id") %></td>

        <td><%=rs.getString("reader_fname") %></td>

        <td><%=rs.getString("reader_lname") %></td>

        <td><%=rs.getInt("reader_phone_number") %></td>

        <td><%=rs.getString("reader_address") %></td>

        <td><%=rs.getString("rt_name") %></td>

    </tr>

    <%

        }

    %>

</tbody>
```

</table>

Back to previous Page

</body>

</html>

○ DisplayDocument.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<%@ page import="com.shree.*" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Documents</title>
</head>
<body>

    <%

        Connection con = Database.getConnection();

        Statement stbranch = con.createStatement();

        String querybranch = "select * from branch";

        ResultSet rsbranch = stbranch.executeQuery(querybranch);

        while(rsbranch.next())
        {

            Statement st = con.createStatement();
```

```
String query = "select * from documents where doc_lib_branch_id =  
"+rsbranch.getInt("lib_branch_id")+" and doc_is_deleted !=1";
```

```
ResultSet rs = st.executeQuery(query);
```

```
while(rs.next())
```

```
{
```

```
Statement st10 = con.createStatement();
```

```
String query10 = "select count(*) as total from copy where  
copy_doc_id = "+rs.getInt("doc_id")+"";
```

```
ResultSet rs10 = st10.executeQuery(query10);
```

```
Statement st2 = con.createStatement();
```

```
String query2 = "select * from publisher where publisher_id =  
"+rs.getInt("doc_publisher_id")+"";
```

```
ResultSet rs2 = st2.executeQuery(query2);
```

```
Statement st3 = con.createStatement();
```

```
String query3 = "select * from copy where copy_doc_id =  
"+rs.getInt("doc_id")+"";
```

```
ResultSet rs3 = st3.executeQuery(query3);
```

```
/* Statement st4 = con.createStatement();
```

```
String query4 = "select * from branch where lib_branch_id";
```

```
ResultSet rs4 = st4.executeQuery(query4);
```

```
*/
```

```
while(rs2.next())
```

```
{
```



```

//while(rs4.next())

{

%>

<form action="IssueCopy" method="get">

    <br><p>Title -
<strong><%=rs.getString("doc_title") %></strong>

    &emsp;&emsp;&emsp;&emsp;Publisher - '<strong><%=
rs2.getString("publisher_name") %></strong>'

    <br>Branch -
<strong><%=rsbranch.getString("lib_branch_name") %></strong>,
<%=rsbranch.getString("lib_branch_location") %></strong>

    <%

while(rs10.next())

{

%>

    &emsp;&emsp;&emsp;&emsp;No of copies -
<%=rs10.getInt("total") %></p>

    <% while(rs3.next())

    {

        Statement st66 = con.createStatement();

        String query66 = "select * from copy_pos
where copy_pos_id = '"+rs3.getInt("copy_position")+'";

        ResultSet rs66 =
st66.executeQuery(query66);

%>

```

```
<p> Copy Number - <%=rs3.getInt("copy_num") %>

&emsp;&emsp;<%

while(rs66.next())

{

    %>    Copy Position -

    <%= rs66.getString("copy_pos_location") %>

    &emsp;&emsp;<input    name="copyid"    type="hidden"
value="<%= rs3.getInt("copy_id") %>">

    <%

    Statement st68 = con.createStatement();

    String query68 = "select * from borrow where
borrow_copy_id = '"+rs3.getInt("copy_id")+"'";

    ResultSet rs68 = st68.executeQuery(query68);

    while (rs68.next())

    {

        Statement st67 = con.createStatement();

        String query67 = "select * from reader
where reader_id = '"+ rs68.getInt("borrow_reader_id")+"'";

        ResultSet          rs67          =
st67.executeQuery(query67);

        %>

        <br>---Issued to

        <%

        while (rs67.next())

        { %>
```

```
<strong><%=rs67.getString("reader_fname") %> <%=rs67.getString("reader_lname")
%></strong> on <strong><%=rs68.getDate("borrow_date_time") %></strong>

                                <% if (rs68.getDate("return_date_time") !=
null)

                                {
                                %>

                                and      collected      back      on
<strong><%=rs68.getDate("return_date_time") %></strong>

                                <%
                                }
                                else
                                {
                                %>

                                and <strong>not collected back

</strong>

                                <%
                                }
                                }
                                }
                                %>

                                <br>

                                </form>

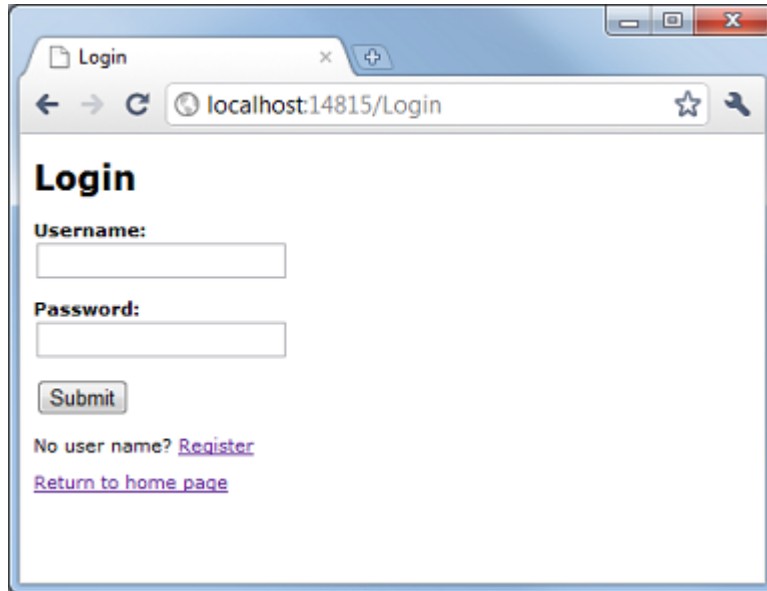
                                <%
```

```
        }  
    }  
}  
  
%>  
  
<br><br><br>  
<a href="addcopy.jsp">Add a Copy of Document</a>  
  
<br><br><br>  
<a href="welcome.jsp">Back to previous Page</a>  
  
</body>  
  
</html>
```

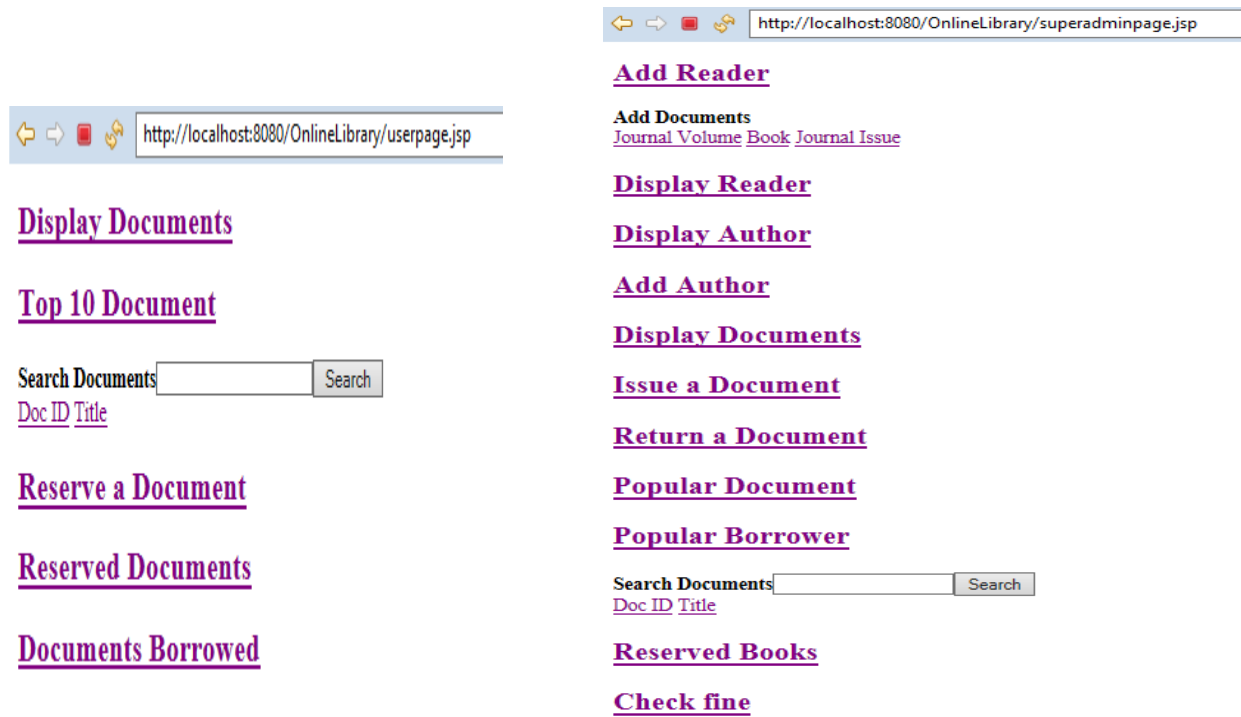
9. Program Screenshots.

Below are some of our systems screenshots.

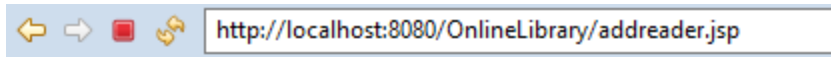
Login:



Homepages:



Add Readers:



Add Reader

First Name

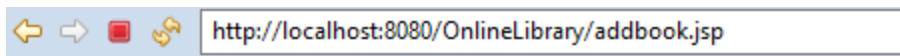
Last Name

Number

Address

Reader Type

Add Book:



Add Book

Title

No of copies

Publisher

Enter ISBN

Branch

Add Journal Volume:

http://localhost:8080/OnlineLibrary/addjournalvolume.jsp

Add Journal Volume

Title

No of copies

Publisher

Volume Number Editor

Branch


List of Readers:

http://localhost:8080/OnlineLibrary/displayreader.jsp

List of Readers

Id	First Name	Last Name	Phone Number	Address	Reader Type
5	Arman	Gupta	9999	Jersey City	Student
6	Harsh	Shah	8888	New York	Student
7	Manish	Tomar	7777	Newark	Student
8	Shreerang	Paradkar	6666	Harrison	Student
9	Vivek	Pereira	5555	Harrison	Student
10	Mihir	Pendse	4444	NY	Staff
11	Anurag	Singh	3333	Harrison	Staff
12	Anubhav	Gupta	3333	Chicago	Student
13	Rishabh	Jaiswal	2222	California	Staff
14	Amit	Sawant	2222	Dallas	Staff
15	Anush	Shetty	1111	Rochester	Staff
16	Akhil	Kalra	1111	Harrison	Student
17	Shubham	Sali	3333	Harrison	Staff
18	Ganesh	Sonavane	8888	Jersey City	Staff
19	Rohit	Neeraj	8888	Mumbai	Staff
20	Kedar	Patil	4444	Mumbai	Staff
21	Rajesh	Patil	9999	Mumbai	Staff

List of Documents:


<http://localhost:8080/OnlineLibrary/displaydocuments.jsp>

Title - **Killers of the Flower Moon**

Publisher - **'Tin House'**

Branch - **Van Houten Library, NJIT Newark**

No of copies - 2

Copy Number - 1

Copy Position - 001A01

---Issued to **Arman Gupta** on 2017-12-10 21:37:22.0 and collected back on 2017-12-10 21:39:29.0

---Issued to **Shreerang Paradkar** on 2017-12-10 21:40:15.0 and collected back on 2017-12-10 22:28:24.0

Copy Number - 2

Copy Position - 001A02

Title - **Beartown**

Publisher - **'Rare Bird Books'**

Branch - **Van Houten Library, NJIT Newark**

No of copies - 2

Copy Number - 1

Copy Position - 001B01

Copy Number - 2

Copy Position - 001B02

Title - **Exit West**

Publisher - **'Random House'**

Branch - **Van Houten Library, NJIT Newark**

No of copies - 2

Copy Number - 1

Copy Position - 001C01


---Issued to **Shreerang Paradkar** on 2017-12-10 21:40:24.0 and collected back on 2017-12-10 21:45:29.0

List of Author:

 http://localhost:8080/OnlineLibrary/displayauthor.jsp			
<hr/>			
List of Authors			
Id	Author Name		
1	Stephen King	Edit Author	Delete
2	Tolkien	Edit Author	Delete
3	Nicholas	Edit Author	Delete
4	Rowling	Edit Author	Delete
5	Jon Snow	Edit Author	Delete
6	Jaquen Hagar	Edit Author	Delete
7	Eddard Stark	Edit Author	Delete
8	Arya Stark	Edit Author	Delete
9	Sansa Starkk	Edit Author	Delete
11	Ryan	Edit Author	Delete

[Back to previous Page](#)

List of Journal Issues


http://localhost:8080/OnlineLibrary/documentissue.jsp

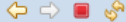
Title - Geek Love	Publisher - 'Penguin Random House'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Twilight	Publisher - 'Penguin Random House'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Desert Solitaire	Publisher - 'Hachette Livre'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - A Brief History of Tomorrow	Publisher - 'HarperCollins'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Hunger	Publisher - 'Pan Macmillan'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - The Impossible Fortress	Publisher - 'Pearson Education'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Lincoln in the Bardo	Publisher - 'Oxford University Press'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Priestdaddy	Publisher - 'Bloomsbury'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Exit West	Publisher - 'Random House'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy
Title - Beartown	Publisher - 'Rare Bird Books'	
Branch - Van Houten Library, NJIT Newark		Issue a Copy

List of Popular Documents


<http://localhost:8080/OnlineLibrary/toptendocuments.jsp>

'Top 10 Documents'			
Doc ID - 31	Borrowed - 6 times	Doc Type - Journal Volume	Doc Name - Geek Love
<u>Borrowed by</u>			
'Harsh Shah' on '2017-12-11, 21:07:39' and returned on '2017-12-11, 21:09:37'			
'Shreerang Paradkar' on '2017-12-12, 20:52:49' and returned on '2017-12-12, 21:26:39'			
'Manish Tomar' on '2017-12-12, 22:02:56' and returned on '2017-12-12, 22:03:34'			
'Manish Tomar' on '2017-12-13, 01:20:55' and returned on '2017-12-13, 01:20:59'			
'Shreerang Paradkar' on '2017-12-13, 01:47:24' and returned on '2017-12-13, 01:48:25'			
'Manish Tomar' on '2017-12-13, 01:47:29' and returned on '2017-12-13, 01:48:27'			
'Manish Tomar' on '2017-12-13, 01:48:19' and returned on '2018-12-15, 01:48:27'			
Doc ID - 25	Borrowed - 3 times	Doc Type - Book	Doc Name - Priestdaddy
<u>Borrowed by</u>			
'Ganesh Sonavane' on '2017-12-12, 00:20:45' and returned on '2017-12-12, 00:21:52'			
'Rishabh Jaiswal' on '2017-12-12, 00:20:51' and returned on '2017-12-12, 00:21:55'			
'Shreerang Paradkar' on '2017-12-12, 20:58:21' and returned on '2017-12-12, 21:26:42'			
Doc ID - 22	Borrowed - 2 times	Doc Type - Book	Doc Name - Killers of the Flower Moon
<u>Borrowed by</u>			
'Arman Gupta' on '2017-12-10, 21:37:22' and returned on '2017-12-10, 21:39:29'			
'Shreerang Paradkar' on '2017-12-10, 21:40:15' and returned on '2017-12-10, 22:28:24'			
Doc ID - 27	Borrowed - 2 times	Doc Type - Journal Volume	Doc Name - The Impossible Fortress
<u>Borrowed by</u>			
'Manish Tomar' on '2017-12-10, 21:40:29' and returned on '2017-12-10, 22:16:43'			
'Shreerang Paradkar' on '2017-12-12, 15:23:47' and returned on '2017-12-12, 16:19:19'			

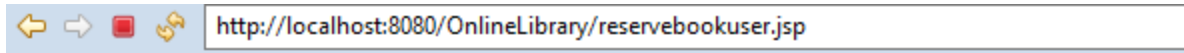
List of Popular Readers

 http://localhost:8080/OnlineLibrary/toptenreaders.jsp		
'Top 10 Readers'		
Reader ID - 8	Reader Name - Shreerang Paradkar	Borrowed - 9 Documents
Documents Borrowed		
Killers of the Flower Moon on 2017-12-10, 21:40:15 and returned on 2017-12-10, 22:28:24		
Exit West on 2017-12-10, 21:40:24 and returned on 2017-12-10, 21:45:29		
Lincoln in the Bardo on 2017-12-12, 00:20:36 and returned on 2017-12-12, 00:21:48		
Hunger on 2017-12-12, 14:55:38 and returned on 2017-12-12, 15:09:09		
The Impossible Fortress on 2017-12-12, 15:23:47 and returned on 2017-12-12, 16:19:19		
Geek Love on 2017-12-12, 20:52:49 and returned on 2017-12-12, 21:26:39		
Priestdaddy on 2017-12-12, 20:58:21 and returned on 2017-12-12, 21:26:42		
Hunger on 2017-12-12, 21:02:23 and returned on 2017-12-12, 21:26:32		
Geek Love on 2017-12-13, 01:47:24 and returned on 2017-12-13, 01:48:25		
Reader ID - 7	Reader Name - Manish Tomar	Borrowed - 6 Documents
Documents Borrowed		
The Impossible Fortress on 2017-12-10, 21:40:29 and returned on 2017-12-10, 22:16:43		
Hunger on 2017-12-12, 15:06:38 and returned on 2017-12-12, 15:14:39		
Geek Love on 2017-12-12, 22:02:56 and returned on 2017-12-12, 22:03:34		
Geek Love on 2017-12-13, 01:20:55 and returned on 2017-12-13, 01:20:59		
Geek Love on 2017-12-13, 01:47:29 and returned on 2017-12-13, 01:48:27		
Geek Love on 2017-12-13, 01:48:19 and returned on 2018-12-15, 01:48:27		
Reader ID - 5	Reader Name - Arman Gupta	Borrowed - 4 Documents
Documents Borrowed		
Killers of the Flower Moon on 2017-12-10, 21:37:22 and returned on 2017-12-10, 21:39:29		
Desert Solitaire on 2017-12-12, 21:22:26 and returned on 2017-12-12, 21:26:29		
Desert Solitaire on 2017-12-12, 21:26:06 and returned on 2017-12-12, 21:26:26		
Desert Solitaire on 2017-12-12, 21:26:16 and returned on 2017-12-12, 21:26:26		

List of Borrowed Documents

 http://localhost:8080/OnlineLibrary/docborrowedhistoryuser.jsp		
Doc ID : 22	Copy Num : 1	Doc Title : Killers of the Flower Moon
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Doc ID : 24	Copy Num : 1	Doc Title : Exit West
Borrowed on : 2017-12-10 21:40:24.0		Returned on : 2017-12-10 21:45:29.0
Doc ID : 27	Copy Num : 1	Doc Title : The Impossible Fortress
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Doc ID : 31	Copy Num : 1	Doc Title : Geek Love
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10. References

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