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Batch ID: TH\_IV/2307/11119

Abstract

The System greatly lowers manual effort and allows for a seamless flow of library activities by eliminating the possibility of errors when doing its activities.

library management system

**Project by- miss. Swapnali Yashwant Khopatkar.**

**Guided by- mr. Samir Warsolkar sir.**

**LIBRARY MANAGEMENT SYSTEM**

***Project for SQL Module***

# Description:

Following database schema is designed to function as a backend storage database for a web application built to manage a library.

By storing information in a relational database, all the tasks related to daily functioning of the library can be performed easily and much more efficiently. Some of the benefits of using this system to store data over traditional paper registers are as follows:

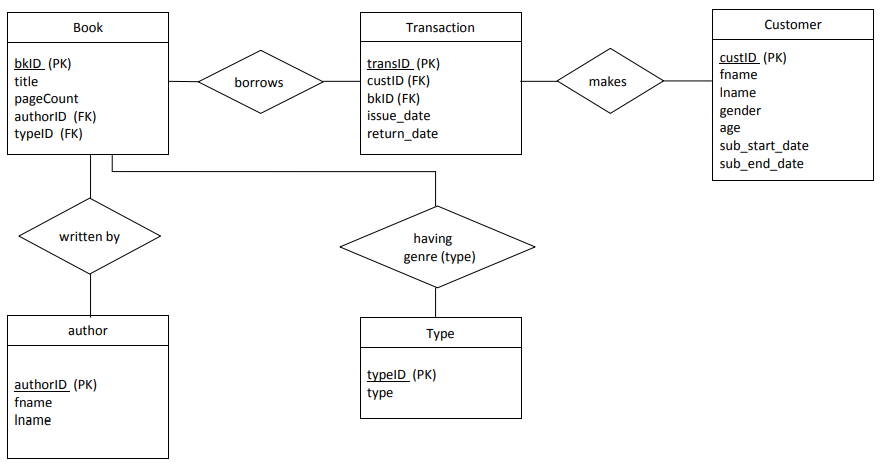
* 1. Updating and modifying booklist in the library is much easier and efficient
  2. Maintaining customer details and their account is easy and efficient.
  3. Calculations like due payments can be done automatically by DBMS, thus eliminating human error
  4. RDBMS provides many ways to analyze available data, thus helping in making more informed decisions about inventory management and other aspects of library management

This database contains 5 tables:

1. Author
2. Type (Genre of book)
3. Book
4. Customer
5. Transaction

How these tables/entities are related to each other is shown pictorially on next page through ER diagram, i.e., Entity Relationship Diagram.

# ER-Diagram (Entity Relation – Diagram) for Library Management System:



# Table Descriptions:

### Author:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field | Type | Null | Key | Default | Extra |
| authorID | int(11) | NO | PRI | NULL |  |
| fname | varchar(50) | YES |  | NULL |  |
| lname | varchar(50) | YES |  | NULL |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

### Type (Genre):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field | Type | Null | Key | Default | Extra |
| typeID | int(11) | NO | PRI | NULL |  |
| type | varchar(50) | YES |  | NULL |  |
|  |  |  |  |  |  |

### Book:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field | Type | Null | Key | Default | Extra |
| bkID | int(11) | NO | PRI | NULL |  |
| title | varchar(50) | YES |  | NULL |  |
| pageCount | int(11) | YES |  | NULL |  |
| authorID | int(11) | YES | MUL | NULL |  |
| typeID | int(11) | YES | MUL | NULL |  |
|  |  |  |  |  |  |

### 4.Customer:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field | Type | Null | Key | Default | Extra |
| custID | int(11) | NO | PRI | NULL |  |
| fname | varchar(30) | YES |  | NULL |  |
| lname | varchar(30) | YES |  | NULL |  |
| gender | varchar(5) | YES |  | NULL |  |
| age | int(3) | YES |  | NULL |  |
| sub\_start\_date | date | YES |  | NULL |  |
| sub\_end\_date | date | YES |  | NULL |  |
|  |  |  |  |  |  |

### 

### 5.Transaction:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field | Type | Null | Key | Default | Extra |
| transID | int(11) | NO | PRI | NULL |  |
| custID | int(11) | YES | MUL | NULL |  |
| bkID | int(11) | YES | MUL | NULL |  |
| issue\_date | datetime | YES |  | NULL |  |
| return\_date | datetime | YES |  | NULL |  |
|  |  |  |  |  |  |

# Commands:

### Create Database: lms

### Select Database: lms;

* **Create table named author:**
* **Create table named type:**

### Create table named book:

PRIMARY KEY (bkID),

CONSTRAINT fk\_bk\_author FOREIGN KEY (authorID) REFERENCES author(authorID), CONSTRAINT fk\_bk\_type FOREIGN KEY (typeID) REFERENCES type(typeID);

* **Create table named customer: Create table named transaction:** CONSTRAINT fk\_trans\_cust FOREIGN KEY (custID) REFERENCES customer(custID), CONSTRAINT fk\_trans\_bk FOREIGN KEY (bkID) REFERENCES book(bkID));
* **Populate “author” table:** INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'),

(3, 'Jack', 'London'),

(4, 'Albert', 'Blaisdell'),

(5, 'Ellis', 'Butler'),

(6, 'Arthur', 'Machen'),

(7, 'Titus', 'Lucretius'),

(8, 'Rabindranath', 'Tagore'),

(9, 'Isaac', 'Asimov'),

(10, 'Charles', 'Dickens'),

(11, 'Ralph Waldo', 'Emerson'),

(12, 'Dorothy', 'Canfield'),

(13, 'Givoanni', 'Boccaccio'),

(14, 'George', 'Orwell'),

(15, 'Publius', 'Ovid'),

(16, 'Robert Louis', 'Stevenson'), (17, 'Virginia', 'Woolf'),

(18, 'George', 'Eliot'),

(19, 'Amelia B.', 'Edwards'),

(20, 'Fyodor', 'Dostoevsky'),

(21, 'Emily', 'Dickinson'),

(22, 'Edna', 'Ferber'),

(23, 'Joseph Sheridan', 'LeFanu'), (24, 'John', 'DosPassos'),

(25, 'Ruth', 'Stuart'),

(26, 'Vladimir', 'Nabokov'),

(27, 'Johanna', 'Spyri'),

(28, 'Ernest', 'Dowson'),

(29, 'Mary Hallock', 'Foote'),

(30, 'Zane', 'Grey'),

(31, 'H. P.', 'Lovecraft'),

(32, 'Samuel', 'Pepys'),

(33, 'Kate Dickinson', 'Sweetser'), (34, 'William', 'Lampton'),

(35, 'Mother', 'Goose'),

(36, 'Eleanor Hallowell', 'Abbott');

* **Populate “type” table:** INSERT into type VALUES (1, 'Science fiction'),

(2, 'Satire'),

(3, 'Drama'),

(4, 'Action and Adventure'), (5, 'Romance'),

(6, 'Mystery'),

(7, 'Horror'),

(8, 'Health'),

(9, 'Guide'),

(10, 'Diaries'),

(11, 'Comics'),

(12, 'Diaries'),

(13, 'Journals'),

(14, 'Biographies'),

(15, 'Fantasy'),

(16, 'History'),

(17, 'Science'),

(18, 'Art');

### Populate “book” table:

INSERT INTO book VALUES

(1, 'A Daughter of the Snows', 199, 3, 9),

(2, 'The Near East: 10,000 Years of History', 298, 9, 13),

(3, 'The Cocoon: A Rest-Cure Comedy', 90, 25, 12),

(4, 'The Freakshow Murders', 321, 2, 3),

(5, 'Pharaohs, Fellahs and Explorers', 367, 19, 9),

(6, 'Hard Times', 293, 10, 1),

(7, 'A Modern Instance', 222, 1, 12),

(8, 'The Real Mother Goose', 88, 35, 1),

(9, 'A Thousand Miles Up the Nile', 110, 19, 18),

(10, 'Children of Blood and Bone', 137, 7, 13),

(11, 'A pushcart at the curb', 95, 24, 1),

(12, 'The Desert and the Sown', 126, 29, 10),

(13, 'Three Soldiers', 223, 24, 16),

(14, 'The End of Eternity', 168, 9, 1),

(15, 'Annie Kilburn', 291, 1, 12),

(16, 'A Touch of Sun and Other Stories', 141, 29, 9),

(17, 'Show Boat', 151, 22, 18),

(18, 'The Call of the Wild', 362, 3, 18),

(19, 'My Mark Twain', 339, 1, 9),

(20, 'Broken Ties', 134, 8, 5),

(21, 'Short Stories From American History', 305, 4, 8),

(22, 'Mrs Rosie and the Priest', 104, 13, 14),

(23, 'So Big', 209, 22, 3),

(24, 'Monsieur Maurice ', 92, 19, 8),

(25, 'The Master of Ballantrae', 236, 16, 13),

(26, 'The Unlived Life of Little Mary Ellen', 99, 25, 6),

(27, 'Mouse - The Last Train', 184, 2, 14),

(28, 'Edith Bonham', 122, 29, 7),

(29, 'Maybe Mother Goose', 161, 35, 14),

(30, 'The Noble Gases', 321, 9, 5),

(31, 'Rainy Week', 98, 36, 7),

(32, 'A Hazard of New Fortunes', 144, 1, 4),

(33, 'A Plot for Murder', 108, 2, 13),

(34, 'Nature', 357, 11, 8),

(35, 'Hickory Dickory Dock', 326, 35, 6),

(36, 'Big Fat Hen', 232, 35, 12),

(37, 'The Lone Star Ranger', 328, 30, 9),

(38, 'The Great Fire of London', 252, 32, 9),

(39, 'White Nights', 265, 20, 14),

(40, 'In a Glass Darkly', 173, 23, 9),

(41, 'Fanny herself', 248, 22, 10),

(42, 'Loaded', 273, 2, 4),

(43, 'A Foregone Conclusion', 121, 1, 15),

(44, 'The Hill of Dreams', 175, 6, 6),

(45, 'Adventure', 217, 3, 8),

(46, 'A Tagore Reader', 285, 8, 4),

(47, 'A Tale of Two Cities', 331, 10, 13),

(48, 'Dombey and Son', 344, 10, 14),

(49, 'Famous Women', 273, 13, 1),

(50, 'Rejection, The Ruling Spirit', 358, 5, 2);

### Populate “customer” table:

INSERT INTO customer VALUES

(1, 'Hazel', 'Green', 'F', 28, '2020-05-15', '2023-05-15'),

(2, 'Ashley', 'Marshall', 'F', 20, '2020-10-28', '2023-10-28'),

(3, 'Ansley', 'Green', 'F', 22, '2021-07-12', '2024-07-12'),

(4, 'Alcock', 'Chapman', 'F', 22, '2020-01-25', '2023-01-25'),

(5, 'Meadow', 'Taylor', 'F', 23, '2020-12-30', '2023-12-30'),

(6, 'Green', 'Wright', 'M', 32, '2020-03-09', '2023-03-09'),

(7, 'Paxton', 'Foster', 'M', 34, '2020-03-03', '2023-03-03'),

(8, 'Gray', 'King', 'M', 62, '2020-06-26', '2023-06-26'),

(9, 'Jones', 'Collins', 'M', 25, '2020-01-26', '2023-01-26'),

(10, 'Leslie', 'Young', 'F', 42, '2020-02-10', '2023-02-10'),

(11, 'Hailey', 'Hill', 'F', 27, '2021-01-16', '2024-01-16'),

(12, 'Washington', 'Martin', 'M', 24, '2021-05-23', '2024-05-23'),

(13, 'Ramirez', 'Green', 'M', 33, '2020-08-28', '2023-08-28'),

(14, 'Morgan', 'Smith', 'M', 29, '2021-05-15', '2024-05-15'),

(15, 'Perez', 'Baker', 'M', 53, '2020-10-27', '2023-10-27'),

(16, 'Alfie', 'Watson', 'M', 26, '2021-04-05', '2024-04-05'),

(17, 'Madison', 'Jackson', 'F', 35, '2021-02-15', '2024-02-15'),

(18, 'Beverly', 'Moore', 'F', 22, '2020-11-19', '2023-11-19'),

(19, 'Kaden', 'Anderson', 'M', 26, '2021-11-11', '2024-11-11'),

(20, 'Carter', 'Adams', 'M', 27, '2021-07-08', '2024-07-08'),

(21, 'Ackland', 'Adams', 'F', 28, '2021-05-19', '2024-05-19'),

(22, 'Hadley', 'Parker', 'F', 37, '2020-11-21', '2023-11-21'),

(23, 'Henderson', 'Cook', 'M', 38, '2021-08-06', '2024-08-06'),

(24, 'Wright', 'Young', 'M', 35, '2021-05-14', '2024-05-14'),

(25, 'Lindsey', 'Wilkinson', 'F', 28, '2021-10-08', '2024-10-08'),

(26, 'Wren', 'Chapman', 'F', 25, '2021-11-06', '2024-11-06'),

(27, 'Love', 'Chapman', 'F', 19, '2021-10-15', '2024-10-15'),

(28, 'Wes', 'Bell', 'M', 23, '2021-01-25', '2024-01-25'),

(29, 'Tyler', 'Carter', 'M', 27, '2021-08-24', '2024-08-24'),

(30, 'Edwin', 'Cook', 'M', 39, '2021-08-17', '2024-08-17'),

(31, 'Sally', 'Wood', 'F', 45, '2020-06-07', '2023-06-07'),

(32, 'Nelson', 'Smith', 'M', 27, '2020-11-15', '2023-11-15'),

(33, 'Arabelle', 'Brown', 'F', 52, '2021-03-11', '2024-03-11'),

(34, 'Carter', 'Harrison', 'M', 21, '2021-11-30', '2024-11-30'),

(35, 'Baker', 'Bell', 'M', 20, '2021-03-24', '2024-03-24'),

(36, 'Cherish', 'Cooper', 'F', 34, '2020-01-31', '2023-01-31'),

(37, 'Remington', 'Wright', 'M', 29, '2020-08-14', '2023-08-14'),

(38, 'Edwards', 'King', 'M', 24, '2020-02-01', '2023-02-01'),

(39, 'Harleigh', 'Taylor', 'F', 26, '2020-05-05', '2023-05-05'),

(40, 'Ryleigh', 'Clark', 'F', 45, '2020-10-29', '2023-10-29'),

(41, 'Albert', 'Richardson', 'F', 57, '2021-03-19', '2024-03-19'),

(42, 'Lee', 'Ward', 'M', 36, '2020-05-13', '2023-05-13'),

(43, 'Kaylin', 'Bell', 'F', 28, '2020-09-12', '2023-09-12'),

(44, 'Agard', 'Young', 'F', 23, '2021-04-03', '2024-04-03'),

(45, 'Turner', 'Hall', 'M', 24, '2021-01-07', '2024-01-07'),

(46, 'Akes', 'White', 'F', 20, '2021-03-08', '2024-03-08'),

(47, 'Lewis', 'Lee', 'M', 35, '2021-01-30', '2024-01-30'),

(48, 'Karson', 'Cook', 'M', 30, '2021-06-26', '2024-06-26'),

(49, 'Hayden', 'Young', 'M', 31, '2020-12-15', '2023-12-15'),

(50, 'Sterling', 'Shaw', 'M', 26, '2021-06-24', '2024-06-24');

### Populate “transaction” table:

INSERT INTO transaction VALUES

(1, 37, 24, '2021-08-31 04:30:00', '2021-09-17 00:15:00'),

(2, 32, 17, '2021-10-01 14:28:00', '2021-10-07 11:22:00'),

(3, 40, 29, '2021-10-02 10:45:00', '2021-10-10 17:16:00'),

(4, 36, 44, '2021-10-03 15:57:00', '2021-10-09 10:43:00'),

(5, 11, 16, '2021-10-07 13:19:00', '2021-10-15 18:55:00'),

(6, 29, 34, '2021-10-09 08:32:00', '2021-10-14 08:17:00'),

(7, 23, 26, '2021-10-09 15:48:00', '2021-10-21 10:51:00'),

(8, 3, 34, '2021-10-10 19:55:00', '2021-10-15 09:20:00'),

(9, 37, 50, '2021-10-14 10:25:00', '2021-10-14 12:52:00'),

(10, 36, 39, '2021-10-16 08:53:00', '2021-10-29 18:47:00'),

(11, 47, 14, '2021-10-24 10:50:00', '2021-11-05 18:19:00'),

(12, 32, 30, '2021-10-24 13:48:00', '2021-10-28 19:33:00'),

(13, 7, 33, '2021-10-27 08:10:00', '2021-11-10 14:34:00'),

(14, 32, 12, '2021-10-27 09:27:00', '2021-11-13 18:23:00'),

(15, 44, 19, '2021-10-29 14:39:00', '2021-11-07 18:34:00'),

(16, 11, 1, '2021-11-03 15:11:00', '2021-11-04 19:42:00'),

(17, 15, 3, '2021-11-06 11:51:00', '2021-11-12 11:49:00'),

(18, 4, 36, '2021-11-06 16:24:00', '2021-11-11 14:00:00'),

(19, 8, 44, '2021-11-12 14:02:00', '2021-11-13 15:21:00'),

(20, 33, 21, '2021-11-14 20:35:00', '2021-11-30 07:56:00'),

(21, 23, 18, '2021-11-16 07:40:00', '2021-11-24 11:57:00'),

(22, 13, 29, '2021-11-17 18:29:00', '2021-11-18 11:27:00'),

(23, 42, 31, '2021-11-19 18:54:00', '2021-12-05 14:59:00'),

(24, 11, 48, '2021-11-20 17:26:00', '2021-11-26 08:16:00'),

(25, 29, 42, '2021-11-23 12:20:00', '2021-11-24 10:13:00'),

(26, 37, 48, '2021-11-24 12:45:00', '2021-11-27 10:13:00'),

(27, 7, 20, '2021-11-26 19:55:00', '2021-12-03 15:55:00'),

(28, 39, 31, '2021-12-02 12:51:00', '2021-12-17 08:13:00'),

(29, 49, 17, '2021-12-14 10:11:00', '2021-12-21 09:41:00'),

(30, 37, 3, '2021-12-14 12:11:00', '2021-12-14 12:13:00'),

(31, 1, 49, '2021-12-15 15:21:00', '2021-12-17 09:45:00'),

(32, 49, 10, '2021-12-16 11:16:00', '2022-01-02 13:42:00'),

(33, 34, 26, '2021-12-19 17:38:00', '2021-12-30 09:59:00'),

(34, 21, 28, '2021-12-21 11:05:00', '2022-01-06 17:13:00'),

(35, 31, 14, '2021-12-22 09:48:00', '2022-01-06 16:37:00'),

(36, 10, 20, '2021-12-22 14:12:00', '2021-12-22 16:44:00'),

(37, 25, 50, '2021-12-22 15:27:00', '2021-12-29 08:56:00'),

(38, 25, 32, '2021-12-22 19:01:00', '2022-01-04 11:16:00'),

(39, 11, 24, '2021-12-26 19:09:00', '2022-01-11 19:14:00'),

(40, 45, 31, '2021-12-28 19:35:00', '2022-01-07 09:41:00'),

(41, 36, 17, '2022-01-05 12:30:00', '2022-01-08 17:51:00'),

(42, 21, 16, '2022-01-07 12:04:00', '2022-01-12 16:31:00'),

(43, 27, 47, '2022-01-11 16:47:00', '2022-01-11 17:20:00'),

(44, 1, 23, '2022-01-12 08:13:00', '2022-01-22 13:34:00'),

(45, 11, 1, '2022-01-14 10:22:00', '2022-01-26 13:43:00'),

(46, 5, 20, '2022-01-14 13:19:00', '2022-01-22 10:37:00'),

(47, 22, 14, '2022-01-16 18:40:00', '2022-02-02 12:10:00'),

(48, 14, 14, '2022-01-19 13:28:00', '2022-01-23 19:36:00'),

(49, 45, 9, '2022-01-27 12:06:00', '2022-02-02 15:06:00'),

(50, 20, 13, '2022-01-27 13:47:00', '2022-02-10 11:31:00'),

(51, 24, 18, '2022-01-29 15:54:00', '2022-02-02 08:59:00'),

(52, 6, 4, '2022-01-30 15:25:00', '2022-02-04 09:19:00'),

(53, 39, 2, '2022-01-30 17:01:00', '2022-02-13 11:13:00'),

(54, 47, 26, '2022-02-02 11:02:00', '2022-02-12 11:36:00'),

(55, 39, 47, '2022-02-11 08:55:00', '2022-02-24 12:40:00'),

(56, 23, 35, '2022-02-12 17:59:00', '2022-02-24 08:56:00'),

(57, 35, 1, '2022-02-13 19:07:00', '2022-02-17 11:01:00'),

(58, 35, 1, '2022-02-16 07:08:00', '2022-02-17 11:14:00'),

(59, 50, 3, '2022-02-26 17:54:00', '2022-03-16 11:53:00'),

(60, 15, 12, '2022-02-27 15:38:00', '2022-03-11 14:44:00');

# Sub-queries:

## Select customers who have not borrowed any book from library

## Query:

# select customer.custID, concat(customer.fname,' ',customer.lname) as name from customer left join Transaction on customer.custID=Transaction.custID where transID is null;

**RESULT:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **custID** | **name** |  | | 2 | Ashley Marshall | | | 9 | Jones Collins | | | 12 | Washington Martin | | | 16 | Alfie Watson | | | 17 | Madison Jackson | | | 18 | Beverly Moore | | | 19 | Kaden Anderson | | | 26 | Wren Chapman | | | 28 | Wes Bell |  | | 30 | Edwin Cook | | | 38 | Edwards King | | | 41 | Albert Richardson | | | 43 | Kaylin Bell | | | 46 | Akes White | | | 48 | Karson Cook | | |  |  |  | |

## Select book with highest page count

## Query:

# select bkID, title from book where pagecount in

# (select max(pageCount) from book);

**RESULT:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| bkID | title |  |  |  |
| 5 | Pharaohs, Fellahs and Explorers | | |  |
|  |  |  |  |  |

## Select customer who has borrowed some book for longest period

## Query:

# Select customer.custID, concat(customer.fname,' ',customer.lname) as name from customer join transaction

# on customer.custID=transaction.custID where datediff(transaction.return\_date,transaction.issue\_date)

# in

# (select max(datediff(transaction.return\_date,transaction.issue\_date)) from transaction);

**RESULT:**

|  |  |  |
| --- | --- | --- |
| **custID** | **name** |  |
| 50 | Sterling Shaw | |
|  |  |  |

# JOINS:

## Display list of all books along with their authors

## Query:

# select book.bkID,book.title,concat(author.fname,' ',author.lname) as author from book join author on author.authorid=book.authorid;

## RESULT:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | |  |  | | |
| **bkID** | **title** | | | | **author** | |  |  |
| 1 | A Daughter of the Snows | | | | Jack London | | |  |
| 2 | The Near East: 10,000 Years of History | | | | Isaac Asimov | | |  |
| 3 | The Cocoon: A Rest-Cure Comedy | | | | Ruth Stuart | | |  |
| 4 | The Freakshow Murders | | | | Frederic Brown | | |  |
| 5 | Pharaohs, Fellahs and Explorers | | | | Amelia B. Edwards | | |  |
| 6 | Hard Times | | | | Charles Dickens | | |  |
| 7 | A Modern Instance | | | | William Dean Howells | | | |
| 8 | The Real Mother Goose | | | | Mother Goose | | |  |
| 9 | A Thousand Miles Up the Nile | | | | Amelia B. Edwards | | |  |
| 10 | Children of Blood and Bone | | | | Titus Lucretius | | |  |
| 11 | A pushcart at the curb | | | | John DosPassos | | |  |
| 12 | The Desert and the Sown | | | | Mary Hallock Foote | | |  |
| 13 | Three Soldiers | | | | John DosPassos | | |  |
| 14 | The End of Eternity | | | | Isaac Asimov | | |  |
| 15 | Annie Kilburn | | | | William Dean Howells | | | |
| 16 | A Touch of Sun and Other Stories | | | | Mary Hallock Foote | | |  |
| 17 | Show Boat | | | | Edna Ferber | | |  |
| 18 | The Call of the Wild | | | | Jack London | | |  |
| 19 | My Mark Twain | | | | William Dean Howells | | | |
| 20 | Broken Ties | | | | Rabindranath Tagore | | |  |
| 21 | Short Stories From American History | | | | Albert Blaisdell | | |  |
| 22 | Mrs Rosie and the Priest | | | | Givoanni Boccaccio | | |  |
| 23 | So Big | | | | Edna Ferber | | |  |
| 24 | Monsieur Maurice | | | | Amelia B. Edwards | | |  |
| 25 | The Master of Ballantrae | | | | Robert Louis Stevenson | | | |
| 26 | The Unlived Life of Little Mary Ellen | | | | Ruth Stuart | | |  |
| 27 | Mouse - The Last Train | | | | Frederic Brown | | |  |
| 28 | Edith Bonham | | | | Mary Hallock Foote | | |  |
| 29 | Maybe Mother Goose | | | | Mother Goose | | |  |
| 30 | The Noble Gases | | | | Isaac Asimov | | |  |
| 31 | Rainy Week | | | | Eleanor Hallowell Abbott | | | |
| 32 | A Hazard of New Fortunes | | | | William Dean Howells | | | |
| 33 | A Plot for Murder | | | | Frederic Brown | | |  |
| 34 | Nature | | | | Ralph Waldo Emerson | | | |
| 35 | Hickory Dickory Dock | | | | Mother Goose | | |  |
| 36 | Big Fat Hen | | | | Mother Goose | | |  |
| 37 | The Lone Star Ranger | | | | Zane Grey | | |  |
| 38 | The Great Fire of London | | | | Samuel Pepys | | |  |
| 39 | White Nights | | | | Fyodor Dostoevsky | | |  |
| 40 | In a Glass Darkly | | | | Joseph Sheridan LeFanu | | | |
| 41 | Fanny herself | | | | Edna Ferber | | |  |
| 42 | Loaded | | | | Frederic Brown | | |  |
| 43 | A Foregone Conclusion | | | | William Dean Howells | | | |
| 44 | The Hill of Dreams | | | | Arthur Machen | | |  |
| 45 | Adventure | | | | Jack London | | |  |
| 46 | A Tagore Reader | | | | Rabindranath Tagore | | |  |
| 47 | A Tale of Two Cities | | | | Charles Dickens | | |  |
| 48 | Dombey and Son | | | | Charles Dickens | | |  |
| 49 | Famous Women | | | | Givoanni Boccaccio | | |  |
| 50 | Rejection, The Ruling Spirit | | | | Ellis Butler | | |  |
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## Display list of top 20 most borrowed books

**Query:**

# select transaction.bkid ,book.title ,count(transaction.bkid) as times\_borrowed from transaction join book on book.bkid=transaction.bkid group by bkid order by count(transaction.bkid) desc limit 20;

## RESULT:

|  |  |  |  |
| --- | --- | --- | --- |
| **bkid** | **title** | **times\_borrowed** |  |
| 1 | A Daughter of the Snows | 4 |  |
| 14 | The End of Eternity | 4 |  |
| 26 | The Unlived Life of Little Mary Ellen | 3 |  |
| 20 | Broken Ties | 3 |  |
| 31 | Rainy Week | 3 |  |
| 3 | The Cocoon: A Rest-Cure Comedy | 3 |  |
| 17 | Show Boat | 3 |  |
| 16 | A Touch of Sun and Other Stories | 2 |  |
| 50 | Rejection, The Ruling Spirit | 2 |  |
| 24 | Monsieur Maurice | 2 |  |
| 34 | Nature | 2 |  |
| 48 | Dombey and Son | 2 |  |
| 12 | The Desert and the Sown | 2 |  |
| 47 | A Tale of Two Cities | 2 |  |
| 44 | The Hill of Dreams | 2 |  |
| 18 | The Call of the Wild | 2 |  |
| 29 | Maybe Mother Goose | 2 |  |
| 2 | The Near East: 10,000 Years of History | 1 |  |
| 35 | Hickory Dickory Dock | 1 |  |
| 49 | Famous Women | 1 |  |
|  |  |  |  |

## Display list of top 10 customers who have borrowed most books

## Query:

# select transaction.custid,concat(customer.fname,' ',customer.lname) as customername, count(transaction.custid) as books\_borrowed from transaction join customer on customer.custid=transaction.custid group by custid order by count(transaction.custid) desc limit 10;

## RESULT:

|  |  |  |  |
| --- | --- | --- | --- |
| **custid** | **Customername** | **books\_borrowed** |  |
| 11 | Hailey Hill | 5 |  |
| 37 | Remington Wright | 4 |  |
| 23 | Henderson Cook | 3 |  |
| 32 | Nelson Smith | 3 |  |
| 36 | Cherish Cooper | 3 |  |
| 39 | Harleigh Taylor | 3 |  |
| 21 | Ackland Adams | 2 |  |
| 45 | Turner Hall | 2 |  |
| 1 | Hazel Green | 2 |  |
| 47 | Lewis Lee | 2 |  |
|  |  |  |  |