**A PROJECT REPORT**

**ON**

**“LIBRARY MANAGEMENT SYSTEM”**

**PROJECT FOR SQL MODULE**

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS**

**BY**

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**UNDER THE GUIDENCE OF**

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**BRANCH – THANE (3 to 5)**

**COURSE CODE - T305**

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# 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:

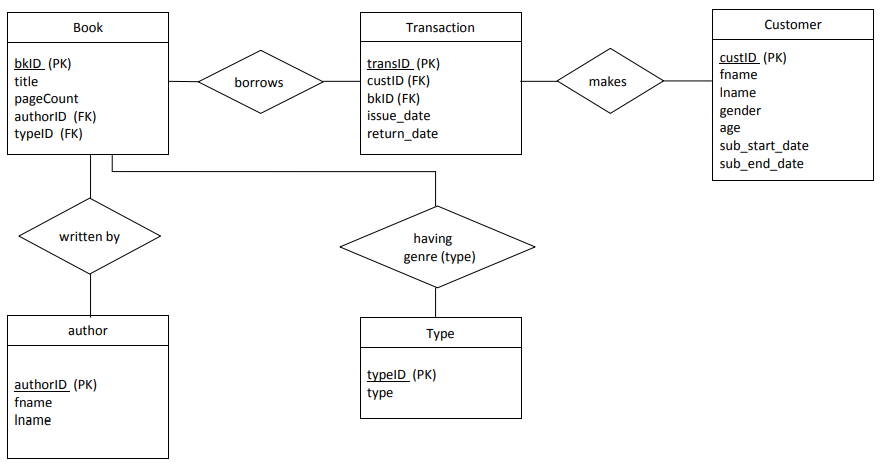
* + Updating and modifying booklist in the library is much easier and efficient
  + Maintaining customer details and their account is easy and efficient.
  + Calculations like due payments can be done automatically by DBMS, thus eliminating human error
  + RDBMS provides many ways to analyze available 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.

1. **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 | | | | |

+ + + + + + +

### 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 | | | | |

+ + + + + + +

### 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 | | | | |

+ + + + + + +

# 3.Commands:

# Create database:

# (SQL QUERIES)

# create database library\_info;

# use librabry\_info;

# create table named author :

# CREATE TABLE author (

# authorID INT,

# fname VARCHAR(50),

# lname VARCHAR(50),

# PRIMARY KEY(authorID)

# );

# desc author;

# 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');

# select \* from author;

# CREATE TABLE NAMED TYPE:

# CREATE TABLE type (

# typeID INT,

# type VARCHAR(50),

# PRIMARY KEY (typeID)

# );

# desc type;

# 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');

# Create table named customer:

# CREATE TABLE customer (

# custID INT,

# fname VARCHAR(30),

# lname VARCHAR(30),

# gender varchar(30),

# age int,

# sub\_start\_date DATE,

# sub\_end\_date DATE,

# PRIMARY KEY (custID)

# );

# desc customer;

# 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');

# Create table named book

# CREATE TABLE book (

# bkID INT,

# title VARCHAR(50),

# pageCount INT,

# authorID INT,

# typeID INT,

# PRIMARY KEY (bkID),

# CONSTRAINT fk\_bk\_author FOREIGN KEY (authorID) REFERENCES author(authorID),

# CONSTRAINT fk\_bk\_type FOREIGN KEY (typeID) REFERENCES type(typeID)

# );

# desc book;

# 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);

# select \* from book;

# Create table named transaction

# CREATE TABLE transaction (

# transID INT,

# custID INT,

# bkID INT,

# issue\_date DATETIME,

# return\_date DATETIME,

# PRIMARY KEY (transID),

# CONSTRAINT fk\_trans\_cust FOREIGN KEY (custID) REFERENCES customer(custID),

# CONSTRAINT fk\_trans\_bk FOREIGN KEY (bkID) REFERENCES book(bkID)

# );

# desc transaction;

# 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');

# select \* from transaction;

# Sub-queries:

# Q 1. Select customers who have not borrowed any book from libraryquery

# select \* from customer;

# SELECT customer.custID,customer.fname

# FROM Customer

# LEFT JOIN transaction ON Customer.custID = transaction.custID

# where transaction.transID is null;

# RESULT:

|  |  |
| --- | --- |
| custID | fname |
| 2 | Ashley |
| 9 | Jones |
| 12 | Washington |
| 16 | Alfie |
| 17 | Madison |
| 18 | Beverly |
| 19 | Kaden |
| 26 | Wren |
| 28 | Wes |
| 30 | Edwin |
| 38 | Edwards |
| 41 | Albert |
| 43 | Kaylin |
| 46 | Akes |
| 48 | Karson |

# 

# Q 2. Select book with highest page count

# SELECT \* FROM book WHERE pageCount = (SELECT MAX(pageCount) FROM book);

# RESULT:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| bkID | title | pageCount | authorID | typeID |
| 5 | Pharaohs, Fellahs and Explorers | 367 | 19 | 9 |

# 

# Q 3.Select customer who has borrowed some book for longest period

# SELECT customer.custID, customer.fname, MAX(DATEDIFF(transaction.return\_date, transaction.issue\_date)) AS max\_borrow\_duration

# FROM customer

# JOIN transaction ON customer.custID = transaction.custID

# WHERE transaction.return\_date IS NOT NULL

# GROUP BY customer.custID, customer.fname

# ORDER BY max\_borrow\_duration DESC

# LIMIT 1;

# RESULT:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| custID | fname | max\_borrow\_duration | | |
| 50 | Sterling | 18 |  |  |

# 

# Q 4. Display list of all books along with their author

# select book.bkID , title,author.fname from book left join author on author.authorID = book.authorID ;

# RESULT:

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

# 

# Q 5.Display list of top 20 most borrowed book

# 

# SELECT book.bkID, title, COUNT(transaction.bkID) AS borrow\_count

# FROM Book

# JOIN transaction ON book.bkID = transaction.bkID

# GROUP BY book.bkID, title

# ORDER BY borrow\_count desc

# LIMIT 20;

# RESULT:

|  |  |  |
| --- | --- | --- |
| bkID | title | borrow\_count |
| 1 | A Daughter of the Snows | 4 |
| 14 | The End of Eternity | 4 |
| 20 | Broken Ties | 3 |
| 26 | The Unlived Life of Little Mary Ellen | 3 |
| 17 | Show Boat | 3 |
| 3 | The Cocoon:A Rest-Cure Comedy | 3 |
| 31 | Rainy Week | 3 |
| 29 | Maybe Mother Goose | 2 |
| 12 | The Desert and the Sown | 2 |
| 48 | Dombey and Son | 2 |
| 34 | Nature | 2 |
| 18 | The Call of the Wild | 2 |
| 47 | A Tale of Two Cities | 2 |
| 44 | The Hill of Dreams | 2 |
| 24 | Monsieur Maurice | 2 |
| 16 | A Touch of Sun and Other Stories | 2 |
| 50 | Rejection, The Ruling Spirit | 2 |
| 13 | Three Soldiers | 1 |
| 36 | Big Fat Hen | 1 |
| 49 | Famous Women | 1 |

# 

# Q 6. Display list of top 10 customers who have borrowed most book

# SELECT customer.custID, customer.fname, COUNT(transaction.bkID)

# AS

# books\_borrowed

# FROM customer

# JOIN transaction ON customer.custID = transaction.custID

# GROUP BY customer.custID, customer.fname

# ORDER BY books\_borrowed DESC

# LIMIT 10;

# RESULT:

|  |  |  |
| --- | --- | --- |
| custID | fname | books\_borrowed |
| 11 | Hailey | 5 |
| 37 | Remington | 4 |
| 39 | Harleigh | 3 |
| 23 | Henderson | 3 |
| 32 | Nelson | 3 |
| 36 | Cherish | 3 |
| 1 | Hazel | 2 |
| 21 | Ackland | 2 |
| 47 | Lewis | 2 |
| 45 | Turner | 2 |

# 