PROJECT REPORT

DATABASE MANAGEMENT SYSTEM

LIBRARY MANAGEMENT SYSTEM

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ORGANIZATION INTRODUCTION:

This project is a **Library Management and Bookkeeping System** designed to handle all activities related to the books in a library. The system keeps track of the available books, their lending details, and the records managed by the library staff. In addition to managing day-to-day operations, it also maintains information about the status of issued books as well as their respective publishers.

FACT-FINDING PROCESS:

The need for this DBMS project came up when I realized it was important to keep track of books issued to multiple customers along with the issuance dates, in order to maintain accurate records of each customer's account with the branch. To prevent security breaches and data loss, I also designed an authentication system for the staff. For developing this project, I used MySQL as the database, and utilized MySQL-CMD and MySQL Workbench as tools.

MISSION OBJECTIVE:

The main goal of this project is to improve convenience and efficiency for both staff and customers. To meet this goal, a system was developed where customers must register at a specific branch before borrowing books, allowing tracking of both customer activity and branch-specific data. Once a book is issued, the customer can view the issuance status to monitor their borrowings. At the same time, staff members can manage and update the availability and condition of all books in the library.

MAJOR VIEWS:

- An employee view is provided, displaying details such as the employee's name, login ID, branch ID, and address.
- A staff-specific view allows access to information on issued books along with the names of the customers.
- A view for new customers is available, showing information about available books along with relevant branch details.
- A separate view is designed for managers to keep records of newly added staff members in an organized manner.

MAJOR DEPICTING CARDINALITIES:

- A single branch can serve multiple customers.
- A customer can borrow several books at a time.
- Books are categorized based on specific details like author and publisher.
- Each book issued to a customer has its own individual issue status.

SCENARIO:

When a customer visits a library branch (identified by a unique branch ID), they can view only the books available on that specific date. Book records are managed by authenticated staff members, each with their own login. Once a book is issued, the staff updates the issuance status to track the loan, which is regularly updated to reflect the book's status.

ERD:
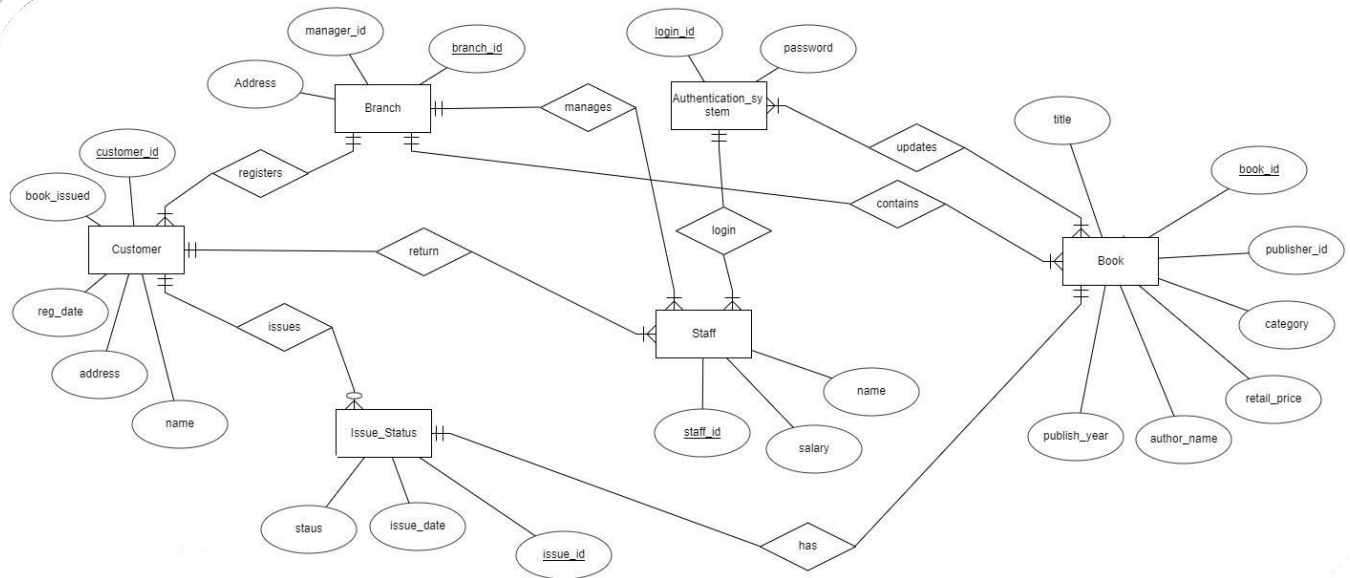
OLD RELATIONAL SCHEMA:
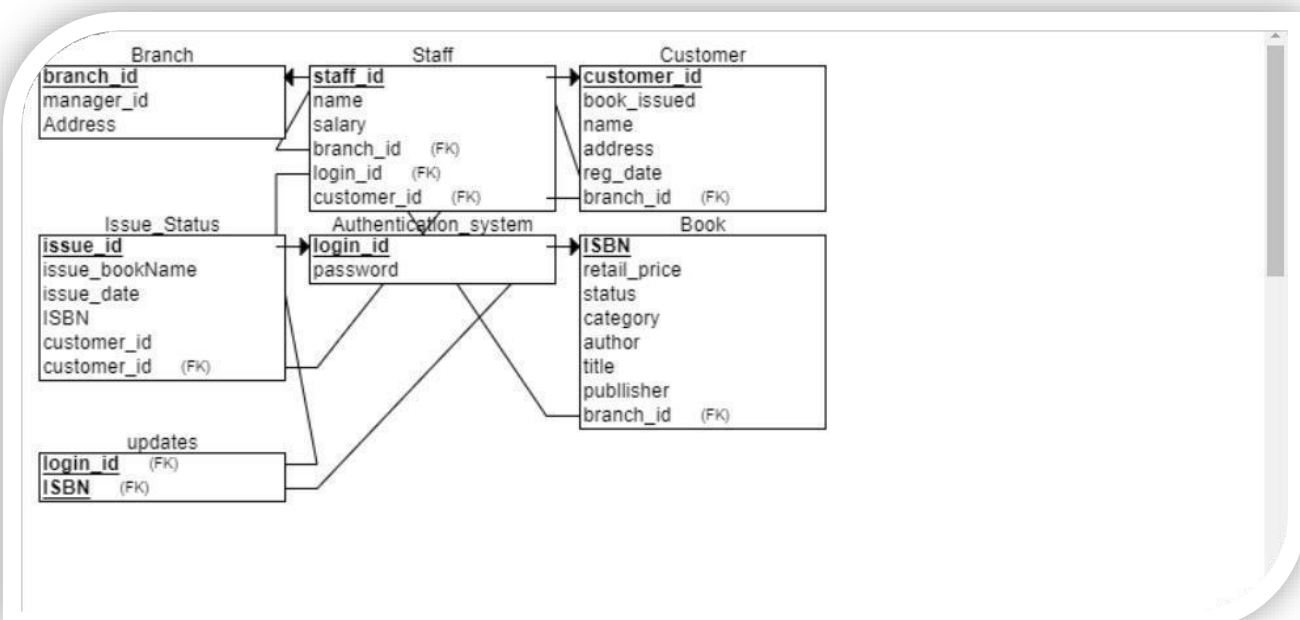
FINAL RELATIONAL SCHEMA (3rd Normal Form):
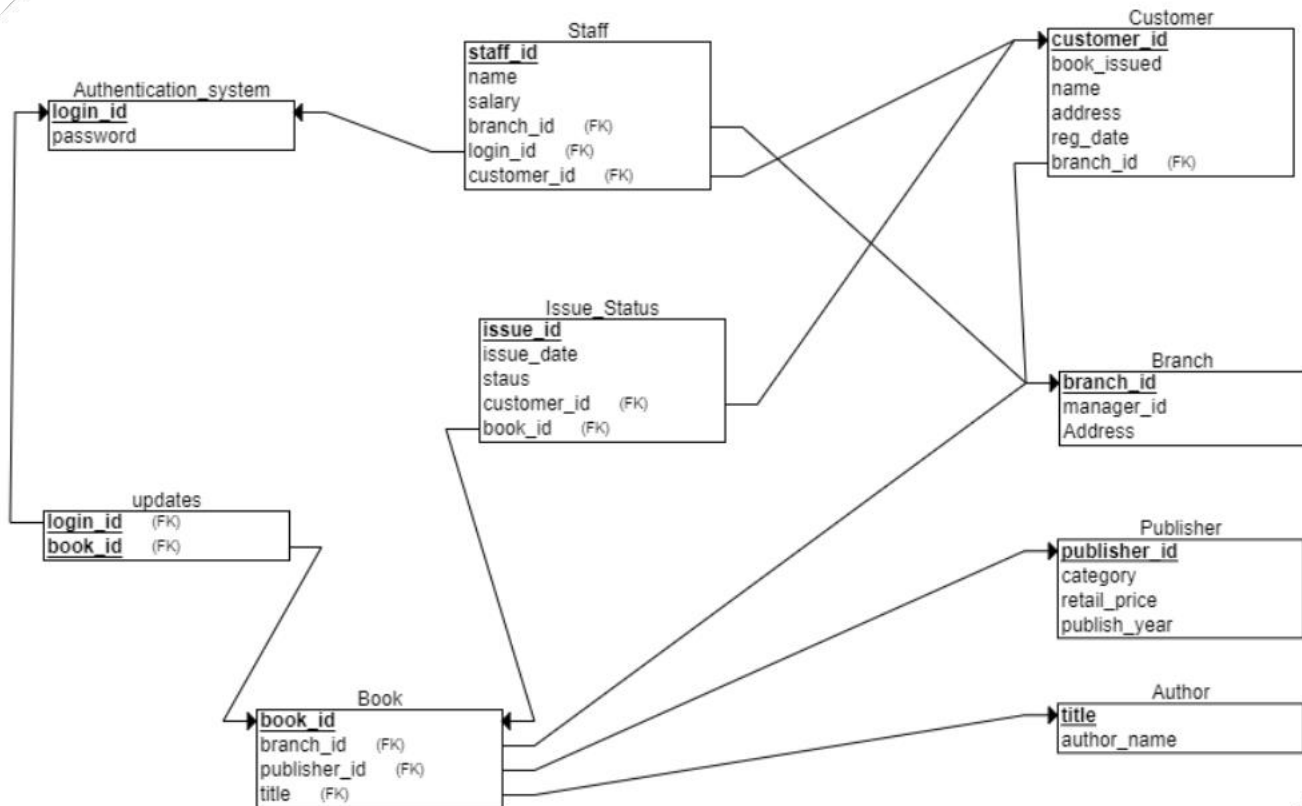
Staff
- **staff_id**
- name
- salary
- branch_id (FK)
- login_id (FK)
- customer_id (FK)

Customer
- **customer_id**
- book_issued
- name
- address
- reg_date
- branch_id (FK)

Authentication_system
- **login_id**
- password

Issue_Status
- **issue_id**
- issue_date
- staus
- customer_id (FK)
- book_id (FK)

Branch
- **branch_id**
- manager_id
- Address

updates
- **login_id** (FK)
- **book_id** (FK)

Publisher
- **publisher_id**
- category
- retail_price
- publish_year

Book
- **book_id**
- branch_id (FK)
- publisher_id (FK)
- title (FK)

Author
- **title**
- author_name

SQL CODE:

```sql
CREATE TABLE Branch
(
  manager_id INT NOT NULL,
  branch_id INT NOT NULL,
  Address VARCHAR(255) NOT NULL,
  PRIMARY KEY (branch_id)
);

CREATE TABLE Customer
(
  customer_id INT NOT NULL,
  book_issued VARCHAR(255) NOT NULL,
  name VARCHAR(255) NOT NULL,
  address VARCHAR(255) NOT NULL,
  reg_date VARCHAR(255) NOT NULL,
  branch_id INT NOT NULL,
  PRIMARY KEY (customer_id),
  FOREIGN KEY (branch_id) REFERENCES Branch(branch_id)
);

CREATE TABLE Authentication_system
(
  login_id INT NOT NULL,
  password VARCHAR(255) NOT NULL,
  PRIMARY KEY (login_id)
);

CREATE TABLE Publisher
(
  publisher_id INT NOT NULL,
  category VARCHAR(255) NOT NULL,
  retail_price INT NOT NULL,
  publish_year INT NOT NULL,
  PRIMARY KEY (publisher_id)
);
```

```sql
CREATE TABLE Author
(
 title VARCHAR(255) NOT NULL,
 author_name VARCHAR(255) NOT NULL,
 PRIMARY KEY (title)
);

CREATE TABLE Staff
(
 staff_id INT NOT NULL,
 name VARCHAR(255) NOT NULL,
 salary INT NOT NULL,
 branch_id INT NOT NULL,
 login_id INT NOT NULL,
 customer_id INT NOT NULL,
 PRIMARY KEY (staff_id),
 FOREIGN KEY (branch_id) REFERENCES Branch(branch_id),
 FOREIGN KEY (login_id) REFERENCES Authentication_system(login_id),
 FOREIGN KEY (customer_id) REFERENCES Customer(customer_id)
);

CREATE TABLE Book
(
 book_id INT NOT NULL,
 branch_id INT NOT NULL,
 publisher_id INT NOT NULL,
 title VARCHAR(255) NOT NULL,
 PRIMARY KEY (book_id),
 FOREIGN KEY (branch_id) REFERENCES Branch(branch_id),
 FOREIGN KEY (publisher_id) REFERENCES Publisher(publisher_id),
 FOREIGN KEY (title) REFERENCES Author(title)
);

CREATE TABLE updates
(
 login_id INT NOT NULL,
 book_id INT NOT NULL,
```

```sql
  PRIMARY KEY (login_id, book_id),
  FOREIGN KEY (login_id) REFERENCES Authentication_system(login_id),
  FOREIGN KEY (book_id) REFERENCES Book(book_id)
);

CREATE TABLE Issue_Status
(
 issue_id INT NOT NULL,
 issue_date VARCHAR(255) NOT NULL,
 staus VARCHAR(255) NOT NULL,
 customer_id INT NOT NULL,
 book_id INT NOT NULL,
 PRIMARY KEY (issue_id),
 FOREIGN KEY (customer_id) REFERENCES Customer(customer_id),
 FOREIGN KEY (book_id) REFERENCES Book(book_id)
);
```

```
mysql> CREATE TABLE Branch
    -> (
    ->   manager_id INT NOT NULL,
    ->   branch_id INT NOT NULL,
    ->   Address VARCHAR(255) NOT NULL,
    ->   PRIMARY KEY (branch_id)
    -> );
Query OK, 0 rows affected (0.08 sec)

mysql> CREATE TABLE Customer
    -> (
    ->   customer_id INT NOT NULL,
    ->   book_issued VARCHAR(255) NOT NULL,
    ->   name VARCHAR(255) NOT NULL,
    ->   address VARCHAR(255) NOT NULL,
    ->   reg_date VARCHAR(255) NOT NULL,
    ->   branch_id INT NOT NULL,
    ->   PRIMARY KEY (customer_id),
    ->   FOREIGN KEY (branch_id) REFERENCES Branch(branch_id)
    -> );
Query OK, 0 rows affected (0.07 sec)

mysql>
mysql> CREATE TABLE Authentication_system
    -> (
    ->   login_id INT NOT NULL,
    ->   password VARCHAR(255) NOT NULL,
    ->   PRIMARY KEY (login_id)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE Publisher
    -> (
    ->   publisher_id INT NOT NULL,
    ->   category VARCHAR(255) NOT NULL,
    ->   retail_price INT NOT NULL,
    ->   publish_year INT NOT NULL,
    ->   PRIMARY KEY (publisher_id)
    -> );
Query OK, 0 rows affected (0.05 sec)
```

```
mysql>
mysql> CREATE TABLE Author
    -> (
    ->   title VARCHAR(255) NOT NULL,
    ->   author_name VARCHAR(255) NOT NULL,
    ->   PRIMARY KEY (title)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql>
mysql> CREATE TABLE Staff
    -> (
    ->   staff_id INT NOT NULL,
    ->   name VARCHAR(255) NOT NULL,
    ->   salary INT NOT NULL,
    ->   branch_id INT NOT NULL,
    ->   login_id INT NOT NULL,
    ->   customer_id INT NOT NULL,
    ->   PRIMARY KEY (staff_id),
    ->   FOREIGN KEY (branch_id) REFERENCES Branch(branch_id),
    ->   FOREIGN KEY (login_id) REFERENCES Authentication_system(login_id),
    ->   FOREIGN KEY (customer_id) REFERENCES Customer(customer_id)
    -> );
Query OK, 0 rows affected (0.09 sec)

mysql>
mysql> CREATE TABLE Book
    -> (
    ->   book_id INT NOT NULL,
    ->   branch_id INT NOT NULL,
    ->   publisher_id INT NOT NULL,
    ->   title VARCHAR(255) NOT NULL,
    ->   PRIMARY KEY (book_id),
    ->   FOREIGN KEY (branch_id) REFERENCES Branch(branch_id),
    ->   FOREIGN KEY (publisher_id) REFERENCES Publisher(publisher_id),
    ->   FOREIGN KEY (title) REFERENCES Author(title)
    -> );
Query OK, 0 rows affected (0.08 sec)
```

```
mysql>
mysql> CREATE TABLE updates
    -> (
    ->    login_id INT NOT NULL,
    ->    book_id INT NOT NULL,
    ->    PRIMARY KEY (login_id, book_id),
    ->    FOREIGN KEY (login_id) REFERENCES Authentication_system(login_id),
    ->    FOREIGN KEY (book_id) REFERENCES Book(book_id)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql>
mysql> CREATE TABLE Issue_Status
    -> (
    ->    issue_id INT NOT NULL,
    ->    issue_date VARCHAR(255) NOT NULL,
    ->    staus VARCHAR(255) NOT NULL,
    ->    customer_id INT NOT NULL,
    ->    book_id INT NOT NULL,
    ->    PRIMARY KEY (issue_id),
    ->    FOREIGN KEY (customer_id) REFERENCES Customer(customer_id),
    ->    FOREIGN KEY (book_id) REFERENCES Book(book_id) );
Query OK, 0 rows affected (0.07 sec)
```

TABLES:

ALL TABLES

```
mysql> use librarysystem;
Database changed
mysql> SHOW TABLES;
+-----------------------+
| Tables_in_librarysystem |
+-----------------------+
| authentication_system |
| author                |
| book                  |
| branch                |
| customer              |
| issue_status          |
| publisher             |
| staff                 |
| updates               |
+-----------------------+
9 rows in set (0.01 sec)
```

SELECT CLAUSE:

USE librarysytem;

SELECT *
FROM authentication_system;

```
mysql> SELECT * FROM authentication_system;
+----------+----------+
| login_id | password |
+----------+----------+
|        1 | 100      |
|        2 | 200      |
|        3 | 300      |
|        4 | 400      |
|        5 | 500      |
|        6 | 600      |
|        7 | 700      |
|        8 | 800      |
|        9 | 900      |
|       10 | 1100     |
|       11 | 1200     |
|       12 | 1300     |
|       13 | 1400     |
|       14 | 1500     |
|       15 | 1600     |
+----------+----------+
15 rows in set (0.00 sec)
```

DESC author;

SELECT title, author_name AS Author
FROM author;

SELECT * FROM book;

```
mysql> SELECT * FROM book;
+---------+-----------+--------------+-------------------------------+
| book_id | branch_id | publisher_id | title                         |
+---------+-----------+--------------+-------------------------------+
|     101 |       264 |          665 | Fallen                        |
|     102 |       267 |         2003 | Echo Foxtrot                  |
|     103 |       268 |          505 | Nitrate                       |
|     104 |       267 |          500 | Shawshank Redemption          |
|     106 |       266 |          800 | The lost gem                  |
|     107 |       266 |          909 | Radio-bots                    |
|     108 |       265 |          836 | VIP                           |
|     109 |       266 |          999 | The Teacher                   |
|     110 |       268 |        10003 | Duckly Inheritance            |
|     111 |       265 |          603 | Nazi and Hitler               |
|     112 |       266 |         6660 | Quantam Mechanics             |
|     113 |       269 |          999 | Family                        |
|     114 |       270 |           40 | Harry Potter and Golden Globe |
|     115 |       271 |          210 | Nazi Hitler                   |
|     116 |       271 |          700 | Road to Independent State     |
+---------+-----------+--------------+-------------------------------+
15 rows in set (0.00 sec)
```

SELECT * FROM author;

```
mysql> SELECT * FROM author;
+-------------------------------+------------------+
| title                         | author_name      |
+-------------------------------+------------------+
| Deathly Hollows               | Pat Cummins      |
| Duckly Inheritance            | Ahmed Mustaqeem  |
| Echo Foxtrot                  | Thiery Henry     |
| Fallen                        | Hasan Ashfaq     |
| Family                        | Dwayne Van Diesel|
| Harry Potter and Golden Globe | Robert Snjider   |
| Nazi and Hitler               | Robin Scpahnzk   |
| Nazi Hitler                   | Robin Scpahnzky  |
| Nitrate                       | Kevin Phillips   |
| Quantam Mechanics             | Jack Wandepilasch|
| Radio-bots                    | Madem Curie      |
| Road to Independent State     | Bushra Khan      |
| Shawshank Redemption          | Camy Kin         |
| The lost gem                  | Van Buyten       |
| The Teacher                   | Elon Musk        |
| VIP                           | Jeff Bezoz       |
+-------------------------------+------------------+
16 rows in set (0.00 sec)
```

SELECT * FROM branch;

```
mysql> SELECT * FROM branch;
+------------+-----------+------------------+
| manager_id | branch_id | Address          |
+------------+-----------+------------------+
|          1 |       264 | BLOCK-15,A-SITE  |
|          2 |       265 | BLOCK-16,B-SITE  |
|          3 |       266 | BLOCK-17,C-SITE  |
|          4 |       267 | BLOCK-18,D-SITE  |
|          5 |       268 | BLOCK-19,E-SITE  |
|          6 |       269 | BLOCK-20,F-SITE  |
|          7 |       270 | BLOCK-20,G-SITE  |
|          8 |       271 | BLOCK-22,G-SITE  |
|          9 |       272 | BLOCK-21,I-SITE  |
|         10 |       273 | BLOCK-23,J-SITE  |
+------------+-----------+------------------+
10 rows in set (0.00 sec)
```

SELECT * FROM customer;

```
mysql> SELECT * FROM customer;
+-------------+------------------------------+---------+----------------------+----------+-----------+
| customer_id | book_issued                  | name    | address              | reg_date | branch_id |
+-------------+------------------------------+---------+----------------------+----------+-----------+
|           1 | Fallen                       | Ali     | BLOCK-1,A-SITE       | 190121   |       264 |
|           2 | VIP                          | Ammar   | BLOCK-2,A-SITE       | 200121   |       265 |
|           3 | The Teacher                  | Azan    | BLOCK-3,A-SITE       | 210121   |       266 |
|           4 | Echo Foxtrot                 | Aleeza  | BLOCK-4,A-SITE       | 220121   |       267 |
|           5 | Nitrate                      | Armaan  | BLOCK-5,A-SITE       | 230121   |       268 |
|           6 | Shawshank Redemption         | Zunaira | P.E.C.H.S BLOCK 2    | 70621    |       267 |
|           7 | Nazi and Hitler              | Haseeb  | P.E.C.H.S BLOCK6     | 200721   |       265 |
|           8 | Quantam Mechanics            | Maham   | Newtown Subway       | 201021   |       266 |
|           9 | Duckly Inheritance           | Rafay   | Maskan Street 94-A   | 201021   |       268 |
|          10 | EMF And world                | Sami    | Nazimabad Block 1    | 201021   |       268 |
|          11 | Radio-bots                   | Safeer  | BLOCK-9,A-SITE       | 50721    |       266 |
|          12 | The lost gem                 | Navira  | BLOCK-9,A-SITE       | 50721    |       266 |
|          13 | Family                       | Mushraf | K2 BLOCK 3 8-D       | 6020     |       269 |
|          14 | Harry Potter and Golden Globe| Shiza   | DHA Phase V-AB Town  | 200601   |       270 |
|          15 | Nazi Hitler                  | Hashir  | K2 BLOCK 3 4-D       | 300199   |       271 |
+-------------+------------------------------+---------+----------------------+----------+-----------+
15 rows in set (0.00 sec)
```

SELECT * FROM issue_status;

```
mysql> SELECT * FROM issue_status;
+----------+------------+-----------------+-------------+---------+
| issue_id | issue_date | staus           | customer_id | book_id |
+----------+------------+-----------------+-------------+---------+
|       11 | 201121     | returned        |           1 |     101 |
|       12 | 200721     | loaned          |           4 |     102 |
|       13 | 100121     | returned        |           5 |     103 |
|       14 | 101021     | extended tenure |           6 |     104 |
|       15 | 91221      | returned        |          12 |     106 |
|       16 | 90521      | not returned    |          11 |     107 |
|       17 | 110821     | returned        |           2 |     108 |
|       18 | 100921     | returned        |           3 |     109 |
|       19 | 200701     | returned        |           7 |     111 |
|       20 | 200701     | returned        |           6 |     112 |
+----------+------------+-----------------+-------------+---------+
10 rows in set (0.00 sec)
```

SELECT * FROM publisher;

```
mysql> SELECT * FROM publisher;
+--------------+---------------------+--------------+--------------+
| publisher_id | category            | retail_price | publish_year |
+--------------+---------------------+--------------+--------------+
|           40 | horror              |          700 |         2000 |
|          210 | fiction             |         7000 |         2002 |
|          500 | mystery             |         8000 |         2016 |
|          505 | sci-fi              |         3500 |         2006 |
|          603 | history             |          200 |         1999 |
|          665 | melo-drama          |          780 |         2010 |
|          700 | drama               |          990 |         2007 |
|          800 | sci-fi              |         2400 |         2008 |
|          836 | biography           |         9000 |         2014 |
|          909 | fiction             |         9000 |         2012 |
|          999 | stage-play act      |          900 |         2018 |
|         2003 | geographical plotted |        30000 |         2009 |
|         6660 | Science             |         5000 |         1996 |
|        10003 | strategy            |        20000 |         2019 |
+--------------+---------------------+--------------+--------------+
14 rows in set (0.00 sec)
```

SELECT * FROM staff;

```
mysql> SELECT * FROM staff;
+----------+----------+--------+-----------+----------+-------------+
| staff_id | name     | salary | branch_id | login_id | customer_id |
+----------+----------+--------+-----------+----------+-------------+
|        1 | Burki    |   2000 |       264 |        1 |           1 |
|        2 | Boose    |   3000 |       265 |        2 |           2 |
|        3 | Burhan   |   4000 |       266 |        3 |           3 |
|        4 | Tassaduq |   5000 |       267 |        4 |           4 |
|        5 | Burkan   |   6000 |       268 |        5 |           5 |
|        6 | Rohail   |   9000 |       267 |        6 |           6 |
|        7 | Zargham  |   9000 |       265 |        7 |           7 |
|        8 | Fareha   |   2500 |       266 |        8 |           8 |
|        9 | Kashif   |   1500 |       268 |        9 |           9 |
|       10 | Larosh   |   2000 |       268 |       10 |          10 |
|       11 | Saleha   |   2800 |       269 |       11 |          11 |
|       12 | Jonas    |   3000 |       270 |       12 |          12 |
|       13 | Malik    |   2600 |       271 |       13 |          13 |
+----------+----------+--------+-----------+----------+-------------+
13 rows in set (0.00 sec)
```

SELECT book_id AS "BOOK ID",publisher_id AS "PUBLISHER ID",title ||'has Book ID='|| book_id AS "DESCRIPTION"
FROM book;

```
mysql> SELECT book_id AS "BOOK ID",publisher_id AS "PUBLISHER ID",title || "has Book ID=" || book_id AS "DESCRIPTION" FROM book;
+---------+--------------+-------------+
| BOOK ID | PUBLISHER ID | DESCRIPTION |
+---------+--------------+-------------+
|     101 |          665 |           1 |
|     102 |         2003 |           1 |
|     103 |          505 |           1 |
|     104 |          500 |           1 |
|     106 |          800 |           1 |
|     107 |          909 |           1 |
|     108 |          836 |           1 |
|     109 |          999 |           1 |
|     110 |        10003 |           1 |
|     111 |          603 |           1 |
|     112 |         6660 |           1 |
|     113 |          999 |           1 |
|     114 |           40 |           1 |
|     115 |          210 |           1 |
|     116 |          700 |           1 |
+---------+--------------+-------------+
```

SELECT customer_id, book_issued AS "BOOK",name AS "CUSTOMER", address
FROM customer;

```
mysql> SELECT customer_id,book_issued AS "BOOK",name AS "CUSTOMER", address FROM customer;
+-------------+---------------------------+----------+---------------------+
| customer_id | BOOK                      | CUSTOMER | address             |
+-------------+---------------------------+----------+---------------------+
|           1 | Fallen                    | Ali      | BLOCK-1,A-SITE      |
|           2 | VIP                       | Ammar    | BLOCK-2,A-SITE      |
|           3 | The Teacher               | Azan     | BLOCK-3,A-SITE      |
|           4 | Echo Foxtrot              | Aleeza   | BLOCK-4,A-SITE      |
|           5 | Nitrate                   | Armaan   | BLOCK-5,A-SITE      |
|           6 | Shawshank Redemption      | Zunaira  | P.E.C.H.S BLOCK 2   |
|           7 | Nazi and Hitler           | Haseeb   | P.E.C.H.S BLOCK6    |
|           8 | Quantam Mechanics         | Maham    | Newtown Subway      |
|           9 | Duckly Inheritance        | Rafay    | Maskan Street 94-A  |
|          10 | EMF And world             | Sami     | Nazimabad Block 1   |
|          11 | Radio-bots                | Safeer   | BLOCK-9,A-SITE      |
|          12 | The lost gem              | Navira   | BLOCK-9,A-SITE      |
|          13 | Family                    | Mushraf  | K2 BLOCK 3 8-D      |
|          14 | Harry Potter and Golden Globe | Shiza | DHA Phase V-AB Town |
|          15 | Nazi Hitler               | Hashir   | K2 BLOCK 3 4-D      |
+-------------+---------------------------+----------+---------------------+
```

INSERT CLAUSE:

INSERT
INTO book
VALUE(110,268,10003,"Duckly Inheritance");

```
mysql> use librarysystem;
Database changed
mysql> INSERT INTO book VALUE(110,268,10003,"Duckly Inheritance");
Query OK, 1 row affected (0.02 sec)
```

INSERT
INTO branch
VALUE(6,269,"BLOCK-20,F-SITE");

 INSERT
 INTO branch
 VALUE(7,270,"BLOCK-20,G-SITE");

 INSERT
 INTO branch
 VALUE(9,272,"BLOCK-21,I-SITE");

 INSERT
 INTO branch
 VALUE(10,273,"BLOCK-23,J-SITE");

```
mysql> INSERT INTO branch VALUE(6,269, BLOCK-20,F-SITE );
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO branch VALUE(7,270,"BLOCK-20,G-SITE");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO branch VALUE(8,271,"BLOCK-22,G-SITE");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO branch VALUE(9,272,"BLOCK-21,I-SITE");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO branch VALUE(10,273,"BLOCK-23,J-SITE");
Query OK, 1 row affected (0.01 sec)
```

 INSERT

INTO publisher
VALUE(6660,"Science",5000,1996);

INSERT
INTO author
VALUE("Nazi Hitler", "Robin Scpahnzky");

```
mysql> INSERT INTO author VALUE("Nazi Hitler", "Robin Scpahnzky");
Query OK, 1 row affected (0.01 sec)
```

INSERT
INTO issue_status
VALUE(19,200701,"returned",7,111);

```
mysql> INSERT INTO publisher VALUE(6660,"Science",5000,1996);
Query OK, 1 row affected (0.01 sec)
```

CONDITIONAL CLAUSE:

SELECT book_issued AS "Book", name AS "Customer", address
FROM customer
WHERE (branch_id=265 OR branch_id=266) AND address LIKE "%BL%";

```
mysql> SELECT book_issued AS "Book", name AS "Customer", address FROM customer WHERE (branch_id=265 OR branch_id=266) AND address LIKE "%BL%";
+-----------------+------------+-----------------+
| Book            | Customer   | address         |
+-----------------+------------+-----------------+
| VIP             | Ammar      | BLOCK-2,A-SITE  |
| Nazi and Hitler | Haseeb     | P.E.C.H.S BLOCK6|
| The Teacher     | Azan       | BLOCK-3,A-SITE  |
| Radio-bots      | Safeer     | BLOCK-9,A-SITE  |
| The lost gem    | Navira     | BLOCK-9,A-SITE  |
+-----------------+------------+-----------------+
5 rows in set (0.00 sec)
```

SELECT category,publisher_id AS "ID",publish_year AS "YEAR"
FROM publisher
WHERE retail_price > 800;

```
mysql> SELECT category,publisher_id AS "ID",publish_year AS "YEAR" FROM publisher WHERE retail_price > 800;
+---------------------+-------+------+
| category            | ID    | YEAR |
+---------------------+-------+------+
| fiction             |   210 | 2002 |
| mystery             |   500 | 2016 |
| sci-fi              |   505 | 2006 |
| drama               |   700 | 2007 |
| sci-fi              |   800 | 2008 |
| biography           |   836 | 2014 |
| fiction             |   909 | 2012 |
| stage-play act      |   999 | 2018 |
| geographical plotted|  2003 | 2009 |
| strategy            | 10003 | 2019 |
+---------------------+-------+------+
10 rows in set (0.00 sec)
```

SELECT book_id,issue_id,staus
FROM issue_status
WHERE staus
LIKE "_e%";

```
mysql> SELECT book_id,issue_id,staus FROM issue_status WHERE staus LIKE "_e%";
+---------+----------+----------+
| book_id | issue_id | staus    |
+---------+----------+----------+
|     101 |       11 | returned |
|     103 |       13 | returned |
|     106 |       15 | returned |
|     108 |       17 | returned |
|     109 |       18 | returned |
+---------+----------+----------+
5 rows in set (0.00 sec)
```

SELECT name AS EMPLOYEES,branch_id AS BRANCH
FROM staff
WHERE salary BETWEEN 2500 AND 5500;

```
mysql> SELECT name AS EMPLOYEES,branch_id AS BRANCH FROM staff WHERE salary BETWEEN 2500 AND 5500;
+-----------+--------+
| EMPLOYEES | BRANCH |
+-----------+--------+
| Boose     |    265 |
| Burhan    |    266 |
| Tassaduq  |    267 |
+-----------+--------+
3 rows in set (0.00 sec)
```

SELECT title,author_name AS AUTHOR
FROM author
WHERE title
LIKE "%s%";

```
mysql> SELECT title,author_name AS AUTHOR FROM author WHERE title LIKE "%s%";
+---------------------------+-------------+
| title                     | AUTHOR      |
+---------------------------+-------------+
| Deathly Hollows           | Pat Cummins |
| Radio-bots                | Madem Curie |
| Road to Independent State | Bushra Khan |
| Shawshank Redemption      | Camy Kin    |
| The lost gem              | Van Buyten  |
+---------------------------+-------------+
5 rows in set (0.00 sec)
```

JOINS CLAUSE:

SELECT staff.name,staff.login_id,authentication_system.password
FROM staff
INNER JOIN authentication_system
ON staff.login_id = authentication_system.login_id;

```
mysql> SELECT staff.name,staff.login_id,authentication_system.password FROM staff INNER JOIN authentication_system ON staff.login_id = authentication_system.login_id;
+----------+----------+----------+
| name     | login_id | password |
+----------+----------+----------+
| Burki    |        1 | 100      |
| Boose    |        2 | 200      |
| Burhan   |        3 | 300      |
| Tassaduq |        4 | 400      |
| Burkan   |        5 | 500      |
+----------+----------+----------+
5 rows in set (0.01 sec)
```

SELECT staff.name,authentication_system.password
FROM staff
LEFT JOIN authentication_system
ON staff.login_id = authentication_system.login_id;

```
mysql> SELECT staff.name,authentication_system.password FROM staff LEFT JOIN authentication_system ON staff.login_id = authentication_system.login_id;
+----------+----------+
| name     | password |
+----------+----------+
| Burki    | 100      |
| Boose    | 200      |
| Burhan   | 300      |
| Tassaduq | 400      |
| Burkan   | 500      |
+----------+----------+
5 rows in set (0.00 sec)
```

SELECT book.title,book.publisher_id,issue_status.staus
FROM book
RIGHT JOIN issue_status
ON book.book_id = issue_status.book_id;

```
mysql> SELECT book.title,book.publisher_id,issue_status.staus FROM book RIGHT JOIN issue_status ON book.book_id = issue_status.book_id;
+---------------------+--------------+----------------+
| title               | publisher_id | staus          |
+---------------------+--------------+----------------+
| Fallen              |          665 | returned       |
| Echo Foxtrot        |         2003 | loaned         |
| Nitrate             |          505 | returned       |
| Shawshank Redemption |         500 | extended tenure |
| The lost gem        |          800 | returned       |
| Radio-bots          |          909 | not returned   |
| VIP                 |          836 | returned       |
| The Teacher         |          999 | returned       |
+---------------------+--------------+----------------+
8 rows in set (0.01 sec)
```

SELECT *
FROM branch
CROSS JOIN staff;

```
mysql> SELECT * FROM branch CROSS JOIN staff;
+------------+-----------+----------------+----------+----------+--------+-----------+----------+-------------+
| manager_id | branch_id | Address        | staff_id | name     | salary | branch_id | login_id | customer_id |
+------------+-----------+----------------+----------+----------+--------+-----------+----------+-------------+
|          1 |       264 | BLOCK-15,A-SITE |        1 | Burki    |   2000 |       264 |        1 |           1 |
|          2 |       265 | BLOCK-16,B-SITE |        1 | Burki    |   2000 |       264 |        1 |           1 |
|          3 |       266 | BLOCK-17,C-SITE |        1 | Burki    |   2000 |       264 |        1 |           1 |
|          4 |       267 | BLOCK-18,D-SITE |        1 | Burki    |   2000 |       264 |        1 |           1 |
|          5 |       268 | BLOCK-19,E-SITE |        1 | Burki    |   2000 |       264 |        1 |           1 |
|          1 |       264 | BLOCK-15,A-SITE |        2 | Boose    |   3000 |       265 |        2 |           2 |
|          2 |       265 | BLOCK-16,B-SITE |        2 | Boose    |   3000 |       265 |        2 |           2 |
|          3 |       266 | BLOCK-17,C-SITE |        2 | Boose    |   3000 |       265 |        2 |           2 |
|          4 |       267 | BLOCK-18,D-SITE |        2 | Boose    |   3000 |       265 |        2 |           2 |
|          5 |       268 | BLOCK-19,E-SITE |        2 | Boose    |   3000 |       265 |        2 |           2 |
|          1 |       264 | BLOCK-15,A-SITE |        3 | Burhan   |   4000 |       266 |        3 |           3 |
|          2 |       265 | BLOCK-16,B-SITE |        3 | Burhan   |   4000 |       266 |        3 |           3 |
|          3 |       266 | BLOCK-17,C-SITE |        3 | Burhan   |   4000 |       266 |        3 |           3 |
|          4 |       267 | BLOCK-18,D-SITE |        3 | Burhan   |   4000 |       266 |        3 |           3 |
|          5 |       268 | BLOCK-19,E-SITE |        3 | Burhan   |   4000 |       266 |        3 |           3 |
|          1 |       264 | BLOCK-15,A-SITE |        4 | Tassaduq |   5000 |       267 |        4 |           4 |
|          2 |       265 | BLOCK-16,B-SITE |        4 | Tassaduq |   5000 |       267 |        4 |           4 |
|          3 |       266 | BLOCK-17,C-SITE |        4 | Tassaduq |   5000 |       267 |        4 |           4 |
|          4 |       267 | BLOCK-18,D-SITE |        4 | Tassaduq |   5000 |       267 |        4 |           4 |
|          5 |       268 | BLOCK-19,E-SITE |        4 | Tassaduq |   5000 |       267 |        4 |           4 |
|          1 |       264 | BLOCK-15,A-SITE |        5 | Burkan   |   6000 |       268 |        5 |           5 |
|          2 |       265 | BLOCK-16,B-SITE |        5 | Burkan   |   6000 |       268 |        5 |           5 |
|          3 |       266 | BLOCK-17,C-SITE |        5 | Burkan   |   6000 |       268 |        5 |           5 |
|          4 |       267 | BLOCK-18,D-SITE |        5 | Burkan   |   6000 |       268 |        5 |           5 |
|          5 |       268 | BLOCK-19,E-SITE |        5 | Burkan   |   6000 |       268 |        5 |           5 |
+------------+-----------+----------------+----------+----------+--------+-----------+----------+-------------+
25 rows in set (0.01 sec)
```

SINGLE-ROW FUNCTIONS CLAUSE:

SELECT title,author_name AS AUTHOR
FROM author
WHERE LOWER(author_name)
LIKE "%k%";

```
mysql> SELECT title,author_name AS AUTHOR FROM author WHERE LOWER(author_name) LIKE "%k%";
+---------------------------+-----------------+
| title                     | AUTHOR          |
+---------------------------+-----------------+
| Nitrate                   | Kevin Phillips  |
| Road to Independent State | Bushra Khan     |
| Shawshank Redemption      | Camy Kin        |
| The Teacher               | Elon Musk       |
+---------------------------+-----------------+
4 rows in set (0.00 sec)
```

SELECT customer_id,CONCAT(book_issued,name)
FROM customer
WHERE branch_id
BETWEEN 264 AND 266;

```
mysql> SELECT customer_id,CONCAT(book_issued,name) FROM customer WHERE branch_id BETWEEN 264 AND 266;
+-------------+--------------------------+
| customer_id | CONCAT(book_issued,name) |
+-------------+--------------------------+
|           1 | FallenAli                |
|           2 | VIPAmmar                 |
|           7 | Nazi and HitlerHaseeb    |
|           3 | The TeacherAzan          |
|           8 | Quantam MechanicsMaham   |
|          11 | Radio-botsSafeer         |
|          12 | The lost gemNavira       |
+-------------+--------------------------+
7 rows in set (0.00 sec)
```

SELECT SUBSTR(title,1,5)
FROM book
WHERE branch_id > 264;

```
mysql> SELECT SUBSTR(title,1,5) FROM book WHERE branch_id > 264;
+-------------------+
| SUBSTR(title,1,5) |
+-------------------+
| VIP               |
| The l             |
| Radio             |
| The T             |
| Echo              |
| Shaws             |
| Nitra             |
+-------------------+
7 rows in set (0.00 sec)
```

SELECT RPAD(Address,4,'_')||LPAD (branch_id,1,'_')
FROM branch
WHERE manager_id > 1;

```
mysql> SELECT RPAD(Address,4,'_')||LPAD (branch_id,1,'_') FROM branch WHERE manager_id > 1;
+---------------------------------------------+
| RPAD(Address,4,'_')||LPAD (branch_id,1,'_') |
+---------------------------------------------+
|                                           1 |
|                                           1 |
|                                           1 |
|                                           1 |
+---------------------------------------------+
4 rows in set, 1 warning (0.00 sec)
```

SUB-QUERY CLAUSE:

SELECT *
FROM publisher
WHERE publish_year
IN (
SELECT publish_year
FROM publisher
WHERE retail_price > 500
);

```
mysql> SELECT * FROM publisher WHERE publish_year IN (SELECT publish_year FROM publisher WHERE retail_price > 500);
+--------------+----------------------+--------------+--------------+
| publisher_id | category             | retail_price | publish_year |
+--------------+----------------------+--------------+--------------+
|           40 | horror               |          700 |         2000 |
|          210 | fiction              |         7000 |         2002 |
|          500 | mystery              |         8000 |         2016 |
|          505 | sci-fi               |         3500 |         2006 |
|          665 | melo-drama           |          780 |         2010 |
|          700 | drama                |          990 |         2007 |
|          800 | sci-fi               |         2400 |         2008 |
|          836 | biography            |         9000 |         2014 |
|          909 | fiction              |         9000 |         2012 |
|          999 | stage-play act       |          900 |         2018 |
|         2003 | geographical plotted |        30000 |         2009 |
|        10003 | strategy             |        20000 |         2019 |
+--------------+----------------------+--------------+--------------+
12 rows in set (0.01 sec)
```

SELECT book_issued,name,reg_date
FROM customer
GROUP BY customer_id
HAVING customer_id >= (
SELECT MIN(customer_id)
FROM customer
WHERE customer_id> 4
);

```
mysql> SELECT book_issued,name,reg_date FROM customer GROUP BY customer_id HAVING customer_id >= (SELECT MIN(customer_id) FROM customer WHERE customer_id> 4);
+---------------------+---------+----------+
| book_issued         | name    | reg_date |
+---------------------+---------+----------+
| Nitrate             | Armaan  | 230121   |
| Shawshank Redemption| Zunaira | 70621    |
| Nazi and Hitler     | Haseeb  | 200721   |
| Quantam Mechanics   | Maham   | 201021   |
| Duckly Inheritance  | Rafay   | 201021   |
| EMF And world       | Sami    | 201021   |
| Radio-bots          | Safeer  | 50721    |
| The lost gem        | Navira  | 50721    |
+---------------------+---------+----------+
8 rows in set (0.00 sec)
```

```sql
SELECT *
FROM publisher
WHERE publish_year IN (
SELECT publish_year
FROM publisher
WHERE publish_year BETWEEN 1990 AND 2010
);
```

```
mysql> SELECT * FROM publisher WHERE publish_year IN (SELECT publish_year FROM publisher WHERE publish_year BETWEEN 1990 AND 2010);
+--------------+--------------------+--------------+--------------+
| publisher_id | category           | retail_price | publish_year |
+--------------+--------------------+--------------+--------------+
|           40 | horror             |          700 |         2000 |
|          210 | fiction            |         7000 |         2002 |
|          505 | sci-fi             |         3500 |         2006 |
|          603 | history            |          200 |         1999 |
|          665 | melo-drama         |          780 |         2010 |
|          700 | drama              |          990 |         2007 |
|          800 | sci-fi             |         2400 |         2008 |
|         2003 | geographical plotted |       30000 |         2009 |
+--------------+--------------------+--------------+--------------+
8 rows in set (0.00 sec)
```

```sql
SELECT *
FROM publisher
WHERE publish_year
IN (
SELECT publish_year
FROM publisher
WHERE publish_year > 2000
);
```

```
mysql> SELECT * FROM publisher WHERE publish_year IN (SELECT publish_year FROM publisher WHERE publish_year > 2000);
+--------------+--------------------+--------------+--------------+
| publisher_id | category           | retail_price | publish_year |
+--------------+--------------------+--------------+--------------+
|          210 | fiction            |         7000 |         2002 |
|          500 | mystery            |         8000 |         2016 |
|          505 | sci-fi             |         3500 |         2006 |
|          665 | melo-drama         |          780 |         2010 |
|          700 | drama              |          990 |         2007 |
|          800 | sci-fi             |         2400 |         2008 |
|          836 | biography          |         9000 |         2014 |
|          909 | fiction            |         9000 |         2012 |
|          999 | stage-play act     |          900 |         2018 |
|         2003 | geographical plotted |       30000 |         2009 |
|        10003 | strategy           |        20000 |         2019 |
+--------------+--------------------+--------------+--------------+
11 rows in set (0.00 sec)
```

SELECT *
FROM updates
WHERE login_id
IN (
SELECT login_id
FROM updates
WHERE login_id > 2
);

```
mysql> SELECT * FROM updates WHERE login_id IN (SELECT login_id FROM updates WHERE login_id > 2);
+----------+---------+
| login_id | book_id |
+----------+---------+
|        3 |     109 |
|        4 |     102 |
|        5 |     103 |
+----------+---------+
rows in set (0.00 sec)
```

SELECT *
FROM branch
WHERE branch_id
IN (
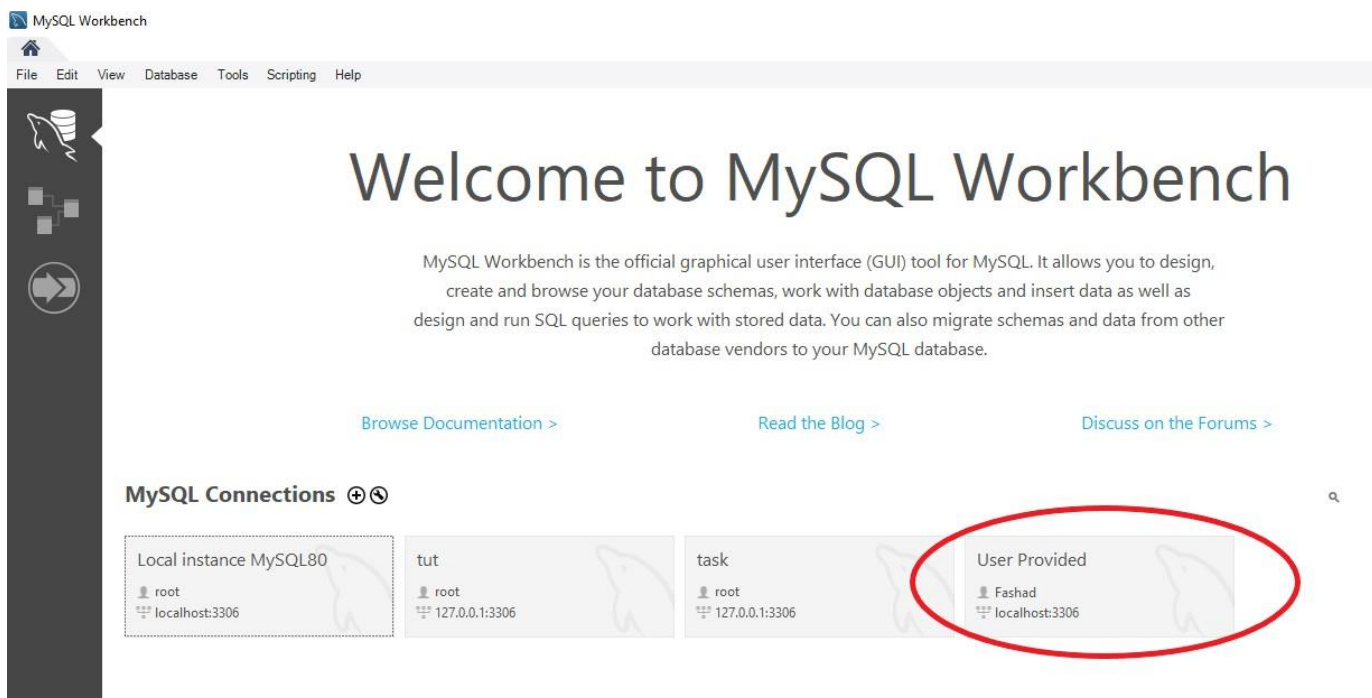SELECT branch_id
FROM branch
WHERE branch_id=265
);

```
mysql> SELECT * FROM branch WHERE branch_id IN (SELECT branch_id FROM branch WHERE branch_id=265);
+------------+-----------+----------------+
| manager_id | branch_id | Address        |
+------------+-----------+----------------+
|          2 |       265 | BLOCK-16,B-SITE |
+------------+-----------+----------------+
1 row in set (0.00 sec)
```

USER-PRIVELAGES CLAUSE:

CREATE
USER 'Fashad'@'localhost'
IDENTIFIED BY 'AminoAcid';

```
mysql> use librarysystem;
Database changed
mysql> CREATE USER 'Fashad'@'localhost' IDENTIFIED BY 'AminoAcid';
Query OK, 0 rows affected (0.04 sec)
```


MySQL Workbench

File   Edit   View   Database   Tools   Scripting   Help

Welcome to MySQL Workbench

MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design,
create and browse your database schemas, work with database objects and insert data as well as
design and run SQL queries to work with stored data. You can also migrate schemas and data from other
database vendors to your MySQL database.

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MySQL Connections ⊕ ⊘

Local instance MySQL80	tut	task	User Provided
👤 root	👤 root	👤 root	👤 Fashad
🖥 localhost:3306	🖥 127.0.0.1:3306	🖥 127.0.0.1:3306	🖥 localhost:3306

select Host,user
from mysql.user;

```
mysql> select Host,user from mysql.user;
+-----------+------------------+
| Host      | user             |
+-----------+------------------+
| localhost | Fashad           |
| localhost | mysql.infoschema |
| localhost | mysql.session    |
| localhost | mysql.sys        |
| localhost | root             |
+-----------+------------------+
5 rows in set (0.00 sec)
```
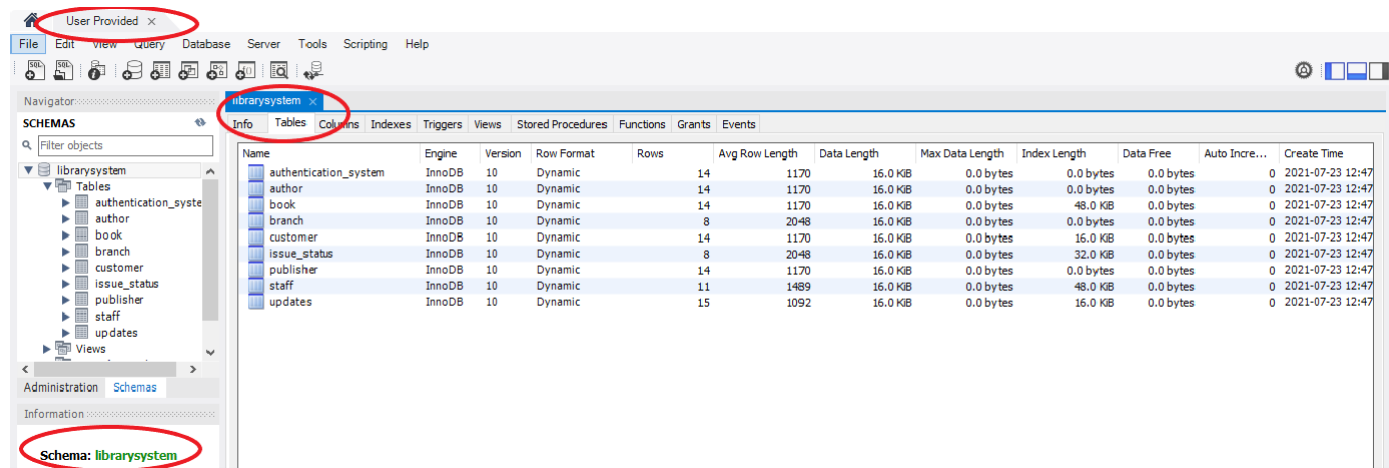
GRANT All ON librarysystem.*
TO
'RiddhiSahana'@'localhost'
WITH GRANT OPTION;

```
mysql> GRANT All ON librarysystem.* TO 'Fashad'@'localhost' WITH GRANT OPTION;
Query OK, 0 rows affected (0.01 sec)
```
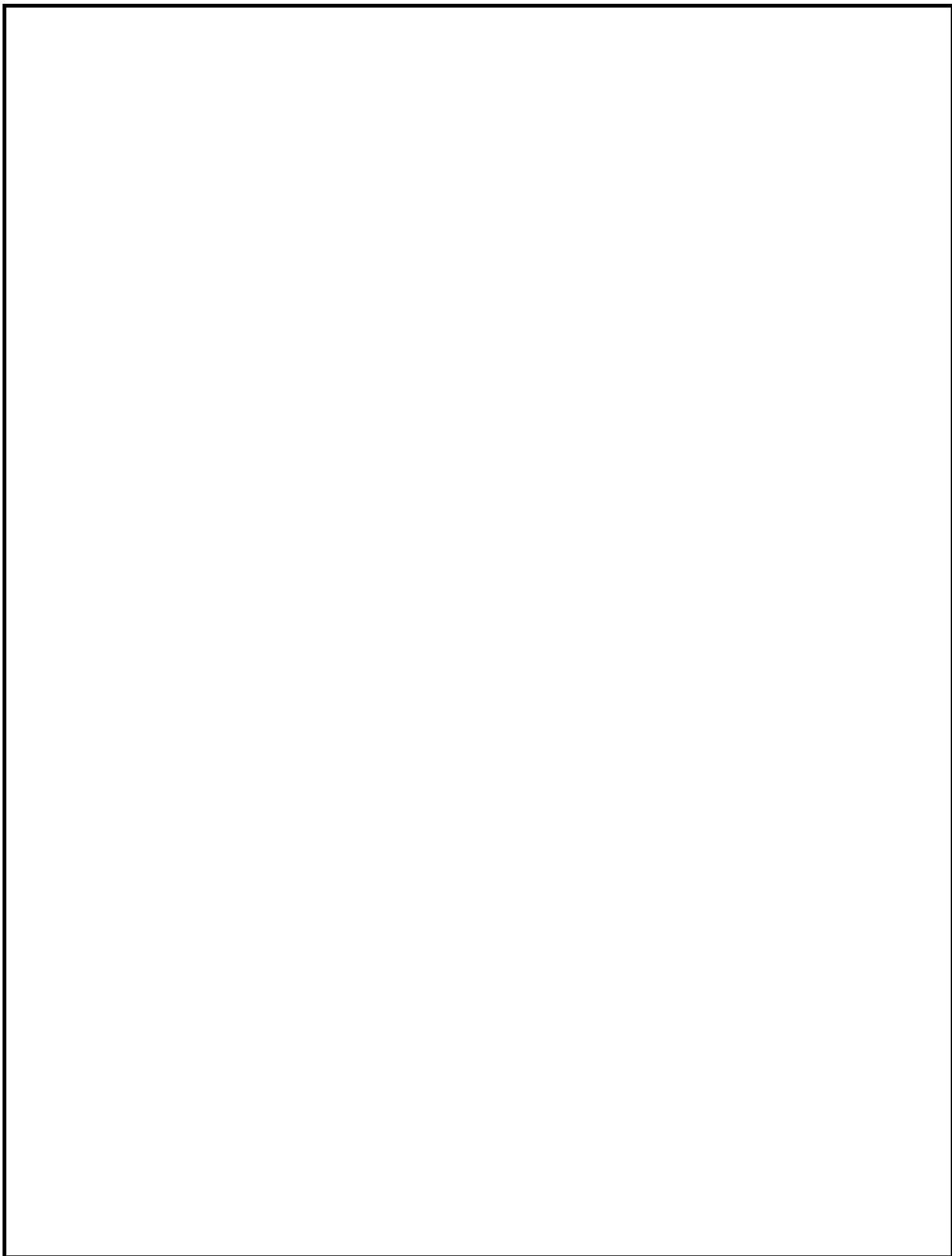

SELECT book.title,book.publisher_id,issue_status.staus
FROM librarysystem.book
RIGHT JOIN librarysystem.issue_status
ON book.book_id = issue_status.book_id;

```
SELECT book.title,book.publisher_id,issue_status.staus
FROM librarysystem.book
RIGHT JOIN librarysystem.issue_status
ON book.book_id = issue_status.book_id;
```

title	publisher_id	staus
Fallen	665	returned
Echo Foxtrot	2003	loaned
Nitrate	505	returned
Shawshank Redemption	500	extended tenure
The lost gem	800	returned
Radio-bots	909	not returned
VIP	836	returned
The Teacher	999	returned
Nazi and Hitler	603	returned
Quantam Mechanics	6660	returned

CREATE ROLE Owner;

```
mysql> CREATE ROLE Owner;
Query OK, 0 rows affected (0.01 sec)
```

GRANT ALL ON librarysystem.*

TO Owner;

```
mysql> GRANT ALL ON librarysystem.* TO Owner;
Query OK, 0 rows affected (0.01 sec)
```

GRANT Owner to 'Fashad'@'localhost';

```
mysql> GRANT Owner to 'Fashad'@'localhost';
Query OK, 0 rows affected (0.01 sec)
```

GROUP CLAUSE:

SELECT AVG(retail_price),MAX(retail_price),MIN(retail_price),MAX(retail_price)
FROM publisher;

```
mysql> SELECT AVG(retail_price),MAX(retail_price),MIN(retail_price),MAX(retail_price) FROM publisher;
+-------------------+-------------------+-------------------+-------------------+
| AVG(retail_price) | MAX(retail_price) | MIN(retail_price) | MAX(retail_price) |
+-------------------+-------------------+-------------------+-------------------+
|         7113.0769 |             30000 |               200 |             30000 |
+-------------------+-------------------+-------------------+-------------------+
1 row in set (0.00 sec)
```

SELECT COUNT(DISTINCT branch_id)
FROM book;

```
mysql> SELECT COUNT(DISTINCT branch_id) FROM book;
+---------------------------+
| COUNT(DISTINCT branch_id) |
+---------------------------+
|                         5 |
+---------------------------+
1 row in set (0.01 sec)
```

SELECT login_id,AVG(Password/2)
FROM authentication_system
GROUP BY login_id;

```
mysql> SELECT login_id,AVG(Password/2) FROM authentication_system GROUP BY login_id;
+----------+-----------------+
| login_id | AVG(Password/2) |
+----------+-----------------+
|        1 |              50 |
|        2 |             100 |
|        3 |             150 |
|        4 |             200 |
|        5 |             250 |
|        6 |             300 |
|        7 |             350 |
|        8 |             400 |
|        9 |             450 |
|       10 |             550 |
|       11 |             600 |
|       12 |             650 |
|       13 |             700 |
|       14 |             750 |
|       15 |             800 |
+----------+-----------------+
15 rows in set (0.00 sec)
```

```
SELECT book_issued,name,reg_date
FROM customer
GROUP BY customer_id,branch_id;
```

```
mysql> SELECT book_issued,name,reg_date FROM customer GROUP BY customer_id,branch_id;
+---------------------+---------+----------+
| book_issued         | name    | reg_date |
+---------------------+---------+----------+
| Fallen              | Ali     | 190121   |
| VIP                 | Ammar   | 200121   |
| The Teacher         | Azan    | 210121   |
| Echo Foxtrot        | Aleeza  | 220121   |
| Nitrate             | Armaan  | 230121   |
| Shawshank Redemption| Zunaira | 70621    |
| Nazi and Hitler     | Haseeb  | 200721   |
| Quantam Mechanics   | Maham   | 201021   |
| Duckly Inheritance  | Rafay   | 201021   |
| EMF And world       | Sami    | 201021   |
| Radio-bots          | Safeer  | 50721    |
| The lost gem        | Navira  | 50721    |
+---------------------+---------+----------+
```

```
SELECT book_issued,name,reg_date
FROM customer
GROUP BY customer_id,branch_id
HAVING MAX(customer_id)>5;
```

```
mysql> SELECT book_issued,name,reg_date FROM customer GROUP BY customer_id,branch_id HAVING MAX(customer_id)>5;
+---------------------+---------+----------+
| book_issued         | name    | reg_date |
+---------------------+---------+----------+
| Shawshank Redemption| Zunaira | 70621    |
| Nazi and Hitler     | Haseeb  | 200721   |
| Quantam Mechanics   | Maham   | 201021   |
| Duckly Inheritance  | Rafay   | 201021   |
| EMF And world       | Sami    | 201021   |
| Radio-bots          | Safeer  | 50721    |
| The lost gem        | Navira  | 50721    |
+---------------------+---------+----------+
7 rows in set (0.00 sec)
```

VIEWS CLAUSE:

```
CREATE VIEW new_Staff_264
AS
SELECT book_issued,name,address,reg_date
FROM customer
```

WHERE branch_id=264;

```
mysql> CREATE VIEW new_Staff_264 AS SELECT book_issued,name,address,reg_date FROM customer WHERE branch_id=264;
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM new_Staff_264;
+-------------+------+--------------+----------+
| book_issued | name | address      | reg_date |
+-------------+------+--------------+----------+
| Fallen      | Ali  | BLOCK-1,A-SITE | 190121 |
+-------------+------+--------------+----------+
1 row in set (0.01 sec)
```

CREATE VIEW Staff_view
AS
SELECT name,book_issued,address
FROM customer;

```
mysql> CREATE VIEW Staff_view AS SELECT name,book_issued,address FROM customer;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM Staff_view;
+---------+---------------------+-------------------+
| name    | book_issued         | address           |
+---------+---------------------+-------------------+
| Ali     | Fallen              | BLOCK-1,A-SITE    |
| Ammar   | VIP                 | BLOCK-2,A-SITE    |
| Azan    | The Teacher         | BLOCK-3,A-SITE    |
| Aleeza  | Echo Foxtrot        | BLOCK-4,A-SITE    |
| Armaan  | Nitrate             | BLOCK-5,A-SITE    |
| Zunaira | Shawshank Redemption | P.E.C.H.S BLOCK 2 |
| Haseeb  | Nazi and Hitler     | P.E.C.H.S BLOCK6  |
| Maham   | Quantam Mechanics   | Newtown Subway    |
| Rafay   | Duckly Inheritance  | Maskan Street 94-A |
| Sami    | EMF And world       | Nazimabad Block 1 |
| Safeer  | Radio-bots          | BLOCK-9,A-SITE    |
| Navira  | The lost gem        | BLOCK-9,A-SITE    |
+---------+---------------------+-------------------+
12 rows in set (0.01 sec)
```

CREATE VIEW Books_information_Customers

AS

SELECT a.author_name,a.title,b.branch_id,b.publisher_id

FROM author a,book b

WHERE a.title = b.title;

```
mysql> CREATE VIEW Books_information_Customers AS SELECT a.author_name,a.title,b.branch_id,b.publisher_id FROM author a,book b WHERE a.title = b.title;
Query OK, 0 rows affected (0.04 sec)

mysql> SELECT * FROM Books_information_Customers;
+------------------+-----------------------------+-----------+--------------+
| author_name      | title                       | branch_id | publisher_id |
+------------------+-----------------------------+-----------+--------------+
| Hasan Ashfaq     | Fallen                      |       264 |          665 |
| Thiery Henry     | Echo Foxtrot                |       267 |         2003 |
| Kevin Phillips   | Nitrate                     |       268 |          505 |
| Camy Kin         | Shawshank Redemption        |       267 |          500 |
| Van Buyten       | The lost gem                |       266 |          800 |
| Madem Curie      | Radio-bots                  |       266 |          909 |
| Jeff Bezoz       | VIP                         |       265 |          836 |
| Elon Musk        | The Teacher                 |       266 |          999 |
| Ahmed Mustaqeem  | Duckly Inheritance          |       268 |        10003 |
| Robin Scpahnzk   | Nazi and Hitler             |       265 |          603 |
| Jack Wandepilasch| Quantam Mechanics           |       266 |         6660 |
| Dwayne Van Diesel| Family                      |       269 |          999 |
| Robert Snjider   | Harry Potter and Golden Globe|      270 |           40 |
| Robin Scpahnzky  | Nazi Hitler                 |       271 |          210 |
| Bushra Khan      | Road to Independent State   |       271 |          700 |
+------------------+-----------------------------+-----------+--------------+
15 rows in set (0.01 sec)
```

CREATE VIEW branch_employees_overview

AS

SELECT s.name,s.login_id,s.branch_id,b.Address

FROM branch b,staff s

WHERE b.branch_id = s.branch_id;

```
mysql> CREATE VIEW branch_employees_overview AS SELECT s.name,s.login_id,s.branch_id,b.Address FROM branch b,staff s WHERE b.branch_id = s.branch_id;
Query OK, 0 rows affected (0.02 sec)

mysql> SELECT * FROM branch_employees_overview;
+----------+----------+-----------+----------------+
| name     | login_id | branch_id | Address        |
+----------+----------+-----------+----------------+
| Burki    |        1 |       264 | BLOCK-15,A-SITE|
| Boose    |        2 |       265 | BLOCK-16,B-SITE|
| Burhan   |        3 |       266 | BLOCK-17,C-SITE|
| Tassaduq |        4 |       267 | BLOCK-18,D-SITE|
| Burkan   |        5 |       268 | BLOCK-19,E-SITE|
| Rohail   |        6 |       267 | BLOCK-18,D-SITE|
| Zargham  |        7 |       265 | BLOCK-16,B-SITE|
| Fareha   |        8 |       266 | BLOCK-17,C-SITE|
| Kashif   |        9 |       268 | BLOCK-19,E-SITE|
| Larosh   |       10 |       268 | BLOCK-19,E-SITE|
| Saleha   |       11 |       269 | BLOCK-20,F-SITE|
| Jonas    |       12 |       270 | BLOCK-20,G-SITE|
| Malik    |       13 |       271 | BLOCK-22,G-SITE|
+----------+----------+-----------+----------------+
13 rows in set (0.00 sec)
```