Assignment 3: Write SQL statements to CREATE a new database and tables that reflect the library schema you designed earlier. Use ALTER statements to modify the table structures and DROP statements to remove a redundant table.

Creation of a new database:

```
mysql> CREATE DATABASE assignment;
Query OK, 1 row affected (0.01 sec)
```

Creation of tables that reflect the library schema:

```
mysql> CREATE TABLE admin_table (admin_id INT NOT NULL AUTO_INCREMENT,
    ->     password VARCHAR(255) NOT NULL,
    ->     PRIMARY KEY (admin_id));
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> CREATE TABLE staff_records (staff_id INT NOT NULL AUTO_INCREMENT,
    ->     password VARCHAR(255) NOT NULL,
    ->     staff_name VARCHAR(100) NOT NULL,
    ->     staff_mail VARCHAR(255) NOT NULL UNIQUE,
    ->     staff_mobile_no VARCHAR(15) NOT NULL UNIQUE,
    ->     PRIMARY KEY (staff_id),
    ->     CHECK (LENGTH(password) >= 8));
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> CREATE TABLE staff_gender (id INT NOT NULL AUTO_INCREMENT,
    ->     staff_id INT NOT NULL,
    ->     gender VARCHAR(10) DEFAULT 'Unknown' NULL,
    ->     PRIMARY KEY (id),
    ->     FOREIGN KEY (staff_id) REFERENCES staff_records(staff_id));
Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE book_details (book_detail_id INT NOT NULL AUTO_INCREMENT,
    ->     publication_date DATE NOT NULL,
    ->     PRIMARY KEY (book_detail_id));
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> CREATE TABLE authors (author_id INT NOT NULL AUTO_INCREMENT,
    ->     name VARCHAR(255) NOT NULL,
    ->     PRIMARY KEY (author_id));
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE books (
    ->     book_id INT NOT NULL AUTO_INCREMENT,
    ->     author_id INT NOT NULL,
    ->     title VARCHAR(255) NOT NULL,
    ->     PRIMARY KEY (book_id),
    ->     FOREIGN KEY (author_id) REFERENCES authors(author_id)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> CREATE TABLE readers (user_id INT NOT NULL AUTO_INCREMENT,
    ->     password VARCHAR(255) NOT NULL,
    ->     first_name VARCHAR(100) NOT NULL,
    ->     last_name VARCHAR(100) NOT NULL,
    ->     email VARCHAR(255) NOT NULL UNIQUE,
    ->     phone_no VARCHAR(15) NOT NULL,
    ->     address TEXT NULL,
    ->     PRIMARY KEY (user_id),
    ->     CHECK (CHAR_LENGTH(password) >= 8));
Query OK, 0 rows affected (0.05 sec)
```

ALTER statements to modify the table structures:

```
mysql> CREATE TABLE reader_report (reader_report_id INT NOT NULL AUTO_INCREMENT,
    ->     user_id INT NOT NULL,
    ->     book_id INT NOT NULL,
    ->     issue TEXT NOT NULL,
    ->     PRIMARY KEY (reader_report_id),
    ->     FOREIGN KEY (user_id) REFERENCES readers(user_id),
    ->     FOREIGN KEY (book_id) REFERENCES books(book_id)
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE transactions (transaction_id INT NOT NULL AUTO_INCREMENT,
    ->     user_id INT NOT NULL,
    ->     due_date DATE NOT NULL,
    ->     PRIMARY KEY (transaction_id),
    ->     FOREIGN KEY (user_id) REFERENCES readers(user_id));
Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE reader_activity (reader_activity_id INT NOT NULL AUTO_INCREMENT,
    ->     user_id INT NOT NULL,
    ->     reserve_date DATE NOT NULL,
    ->     return_date DATE NULL,
    ->     due_date DATE NOT NULL,
    ->     borrowed BOOLEAN NOT NULL,
    ->     fine DECIMAL(10, 2) DEFAULT 0.00,
    ->     PRIMARY KEY (reader_activity_id),
    ->     FOREIGN KEY (user_id) REFERENCES readers(user_id));
Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE borrowed_transactions (id INT NOT NULL AUTO_INCREMENT,
    ->     book_id INT NOT NULL,
    ->     transaction_id INT NOT NULL,
    ->     PRIMARY KEY (id),
    ->     FOREIGN KEY (book_id) REFERENCES books(book_id),
    ->     FOREIGN KEY (transaction_id) REFERENCES transactions(transaction_id));
Query OK, 0 rows affected (0.05 sec)
```

DROP statements to remove a redundant table:

```
mysql> ALTER TABLE staff_records
    -> ADD COLUMN date_of_birth DATE NULL;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql>
mysql> ALTER TABLE readers
    -> ADD COLUMN registration_date DATE NULL;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> DROP TABLE IF EXISTS trans;
Query OK, 0 rows affected (0.02 sec)
```