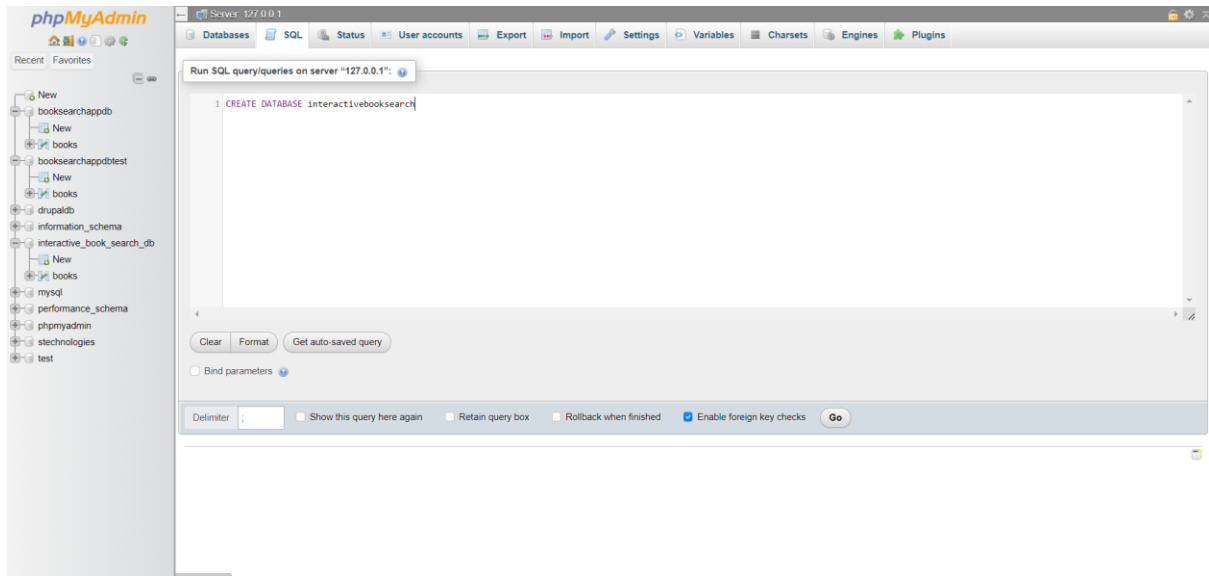


Part-1 (Database Setup)

1. Created the database using MySQL on my local database server (phpMyAdmin).

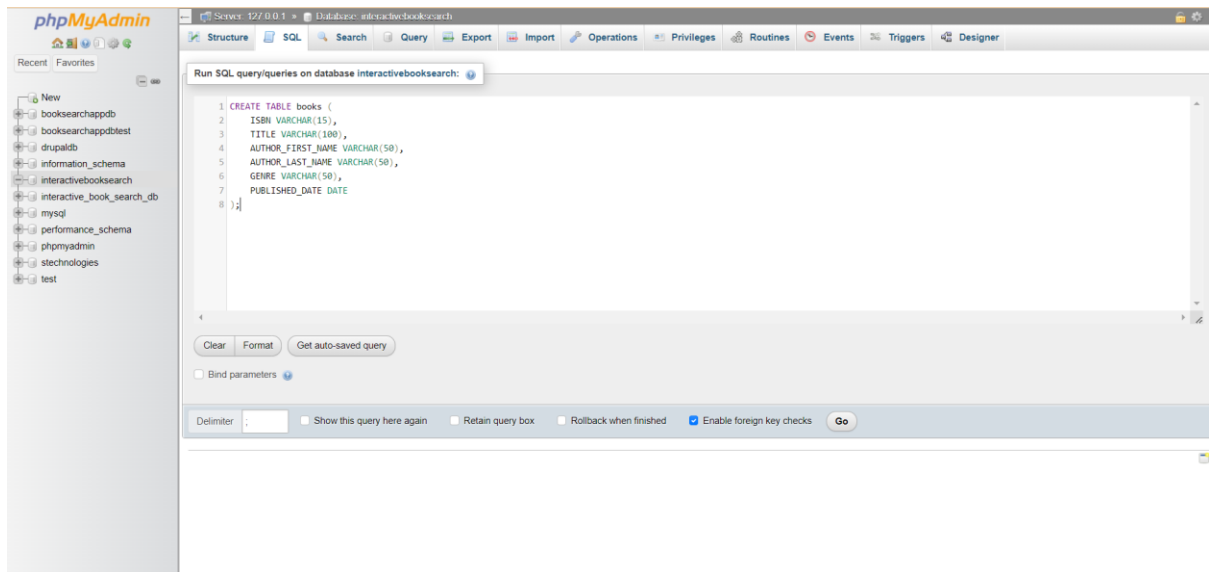
Query used to create the database:

“CREATE DATABASE interactivebooksearch”

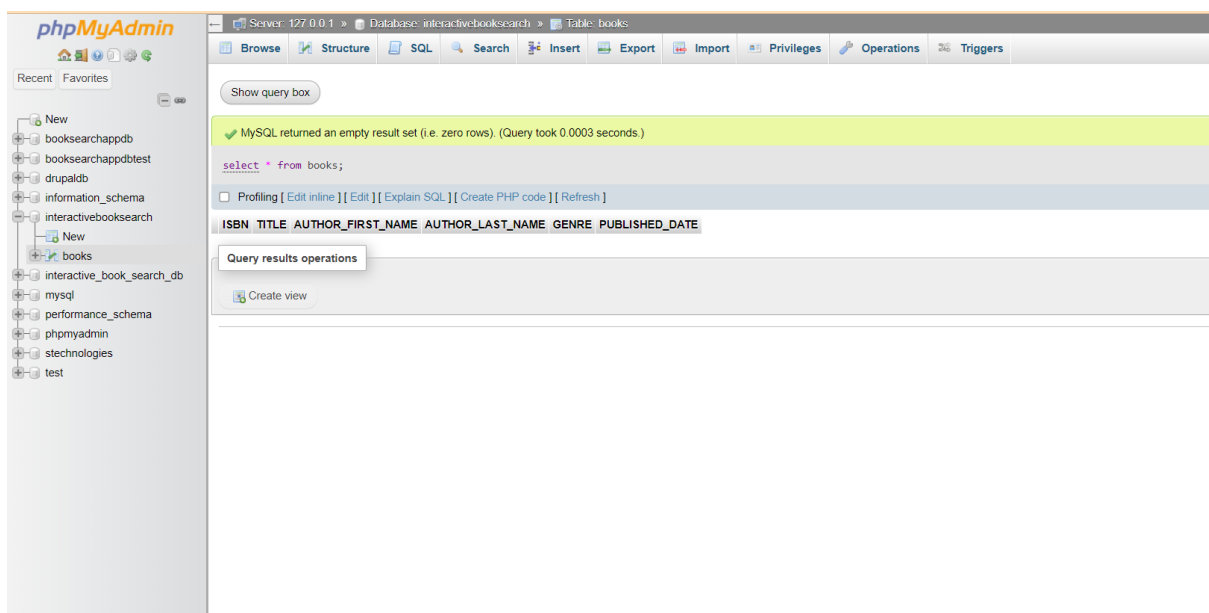


2. Created a table “books” in the same database using the below schema.

```
CREATE TABLE books (  
    ISBN VARCHAR(15),  
    TITLE VARCHAR(100),  
    AUTHOR_FIRST_NAME VARCHAR(50),  
    AUTHOR_LAST_NAME VARCHAR(50),  
    GENRE VARCHAR(50),  
    PUBLISHED_DATE DATE  
);
```



3. After creating the table “books”, I ran the query “select * from books” and currently this table has no data.



Part-2 (Data Injection and SQL Queries)

1. Wrote the below python script to import the data from the csv file to the “books” table on the local server. The name of my local script is “script_new.py” and I installed python to run this script.

Note: If you want to run the below script in python you have to change the `csv_file_path` “H:\books.csv” according to your system. Also update “user” and “password” according to your localhost.

```

import pandas as pd
import mysql.connector

# MySQL database connection settings
db_config = {
    "host": "localhost",
    "user": "root",
    "password": "",
    "database": "interactivebooksearch"
}

# CSV file path
csv_file_path = "H:\\books.csv"

# Read CSV data using pandas
csv_data = pd.read_csv(csv_file_path)

# Establish MySQL database connection
connection = mysql.connector.connect(**db_config)
cursor = connection.cursor()

# Iterate through the CSV data and insert into the 'books' table
for index, row in csv_data.iterrows():
    query = "INSERT INTO books (ISBN, TITLE, AUTHOR_FIRST_NAME, AUTHOR_LAST_NAME, GENRE, PUBLISHED_DATE) VALUES (%s, %s, %s, %s, %s, %s)"
    values = (row['ISBN'], row['TITLE'], row['AUTHOR FIRST NAME'], row['AUTHOR LAST NAME'], row['GENRE'], row['PUBLISHED DATE'])

    cursor.execute(query, values)
    connection.commit()

# Close the database connection
cursor.close()
connection.close()

print("CSV data imported into 'books' table successfully!")

```

```

C:\Windows\System32\cmd.e x + v

File "H:\pythonscripttoinsertdata.py", line 5, in <module>
    db_connection = mysql.connector.connect(
    ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^

File "C:\Users\tajin\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.11_qbz5n2kfra8p0\LocalCache\local-packag
es\Python311\site-packages\mysql\connector\__init__.py", line 179, in connect
    return MySQLConnection(*args, **kwargs)
    ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^

File "C:\Users\tajin\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.11_qbz5n2kfra8p0\LocalCache\local-packag
es\Python311\site-packages\mysql\connector\connection.py", line 95, in __init__
    self.connect(**kwargs)
  File "C:\Users\tajin\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.11_qbz5n2kfra8p0\LocalCache\local-packag
es\Python311\site-packages\mysql\connector\abstracts.py", line 713, in connect
    self.config(**kwargs)
  File "C:\Users\tajin\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.11_qbz5n2kfra8p0\LocalCache\local-packag
es\Python311\site-packages\mysql\connector\abstracts.py", line 303, in config
    raise AttributeError("Unsupported argument '{0}'".format(key))
AttributeError: Unsupported argument 'ssl_mode'

H:\>mysqlimport --local --fields-terminated-by=',' --lines-terminated-by='\n' --ignore-lines=1 -u 6gw6r5chmdil69ouir5n -
p booksearchappdb H:\books.csv
'mysqlimport' is not recognized as an internal or external command,
operable program or batch file.

H:\>python script_new.py
CSV data imported into 'books' table successfully!

H:\>python script_new.py
CSV data imported into 'books' table successfully!

H:\>|

```

2. After running the python script data from the local file is now being inserted into the “books” table. See the output below.

ISBN	TITLE	AUTHOR_FIRST_NAME	AUTHOR_LAST_NAME	GENRE	PUBLISHED_DATE
9780061120084	TO KILL A MOCKINGBIRD	HARPER	LEE	CLASSIC	1960-07-11
9780452284234	BRAVE NEW WORLD	ALDOUS	HUXLEY	DYSTOPIA	1932-03-01
9780141185071	1984	GEORGE	ORWELL	DYSTOPIA	1949-06-08
9780544003415	THE LORD OF THE RINGS	J.R.R.	TOLKIEN	FANTASY	1937-09-21
9780316015844	TWILIGHT	STEPHENIE	MEYER	FANTASY	2005-10-05
9780062315007	FAHRENHEIT 451	RAY	BRADBURY	SCIENCE FICTION	1953-10-19
9780385472579	ONE HUNDRED YEARS OF SOLITUDE	GABRIEL	GARCÍA MÁRQUEZ	MAGICAL REALISM	1985-06-05
9780743273565	SLAUGHTERHOUSE-FIVE	KURT	VONNEGUT	SCIENCE FICTION	1969-03-01
9780307269751	KAFKA ON THE SHORE	HARUKI	MURAKAMI	FICTION	2005-01-03
9780062316097	A GAME OF THRONES	GEORGE	R.R. MARTIN	FANTASY	1996-08-06
9781451673319	THE BOOK THIEF	MARKUS	ZUSAK	HISTORICAL FICTION	2005-03-14
9780345810014	PRIDE AND PREJUDICE	JANE	AUSTEN	CLASSIC	1813-01-28
9780061122415	GO SET A WATCHMAN	HARPER	LEE	CLASSIC	2015-07-14
9780547928227	HARRY POTTER AND THE SORCERER'S STONE	J.K.	ROWLING	FANTASY	1997-06-26
9780062454942	GONE GIRL	GILLIAN	FLYNN	THRILLER	2012-06-05
9781400079988	THE KITE RUNNER	KHALED	HOSSEINI	HISTORICAL FICTION	2003-05-29
9780307477477	WAR AND PEACE	LEO	TOLSTOY	HISTORICAL FICTION	1869-01-20
9780345803474	THE OLD MAN AND THE SEA	ERNEST	HEMINGWAY	NOVEL	1926-10-20
9780061120084	TO KILL A MOCKINGBIRD	HARPER	LEE	CLASSIC	1960-07-11
9780141185071	1984	GEORGE	ORWELL	DYSTOPIA	1949-06-08
9780547928227	HARRY POTTER AND THE SORCERER'S STONE	J.K.	ROWLING	FANTASY	1997-06-26
9780062454942	GONE GIRL	GILLIAN	FLYNN	THRILLER	2012-06-05
9780385472579	ONE HUNDRED YEARS OF SOLITUDE	GABRIEL	GARCÍA MÁRQUEZ	MAGICAL REALISM	1985-06-05
9780452284234	BRAVE NEW WORLD	ALDOUS	HUXLEY	DYSTOPIA	1932-03-01
9780061122415	GO SET A WATCHMAN	HARPER	LEE	CLASSIC	2015-07-14
9780307477477	WAR AND PEACE	LEO	TOLSTOY	HISTORICAL FICTION	1869-01-20
9780544003415	THE LORD OF THE RINGS	J.R.R.	TOLKIEN	FANTASY	1937-09-21
9781400079988	THE KITE RUNNER	KHALED	HOSSEINI	HISTORICAL FICTION	2003-05-29
9780307477477	WAR AND PEACE	LEO	TOLSTOY	HISTORICAL FICTION	1869-01-20
9780345803474	THE OLD MAN AND THE SEA	ERNEST	HEMINGWAY	NOVEL	1926-10-20

3. Query 1 (Find the oldest book for each author) – see output in the screenshot below.

```

SELECT AUTHOR_FIRST_NAME, AUTHOR_LAST_NAME, MIN(PUBLISHED_DATE) AS oldest_book_date
FROM books GROUP BY AUTHOR_FIRST_NAME, AUTHOR_LAST_NAME;

```

Showing rows 0 - 16 (17 total. Query took 0.0005 seconds)

```
SELECT AUTHOR_FIRST_NAME, AUTHOR_LAST_NAME, MIN(PUBLISHED_DATE) AS oldest_book_date FROM books GROUP BY AUTHOR_FIRST_NAME, AUTHOR_LAST_NAME;
```

AUTHOR_FIRST_NAME	AUTHOR_LAST_NAME	oldest_book_date
ALDOUS	HUXLEY	1932-03-01
ERNEST	HEMINGWAY	1926-10-20
GABRIEL	GARCIA MÁRQUEZ	1985-06-05
GEORGE	ORWELL	1949-06-08
GEORGE	R.R. MARTIN	1996-08-06
GILLIAN	FLYNN	2012-06-05
HARPER	LEE	1960-07-11
HARUKI	MURAKAMI	2005-01-03
J.K.	ROWLING	1997-06-26
J.R.R.	TOLKIEN	1937-09-21
JANE	AUSTEN	1813-01-28
KHALED	HOSSEINI	2003-05-29
KURT	VONNEGUT	1969-03-01
LEO	TOLSTOY	1869-01-20
MARKUS	ZUSAK	2005-03-14
RAY	BRADBURY	1953-10-19
STEPHENIE	MEYER	2005-10-05

4. Query 2 (Find the authors who have written the most books in each genre.) – see output in the screenshot below.

```
SELECT genre_stats.GENRE, genre_stats.AUTHOR_FIRST_NAME,
genre_stats.AUTHOR_LAST_NAME, genre_stats.book_count
FROM (
    SELECT b.GENRE, b.AUTHOR_FIRST_NAME, b.AUTHOR_LAST_NAME, COUNT(distinct ISBN)
    AS book_count,
        RANK() OVER (PARTITION BY b.GENRE ORDER BY COUNT(*) DESC) AS rank
    FROM books b
    GROUP BY b.GENRE, b.AUTHOR_FIRST_NAME, b.AUTHOR_LAST_NAME
) genre_stats WHERE genre_stats.rank = 1;
```

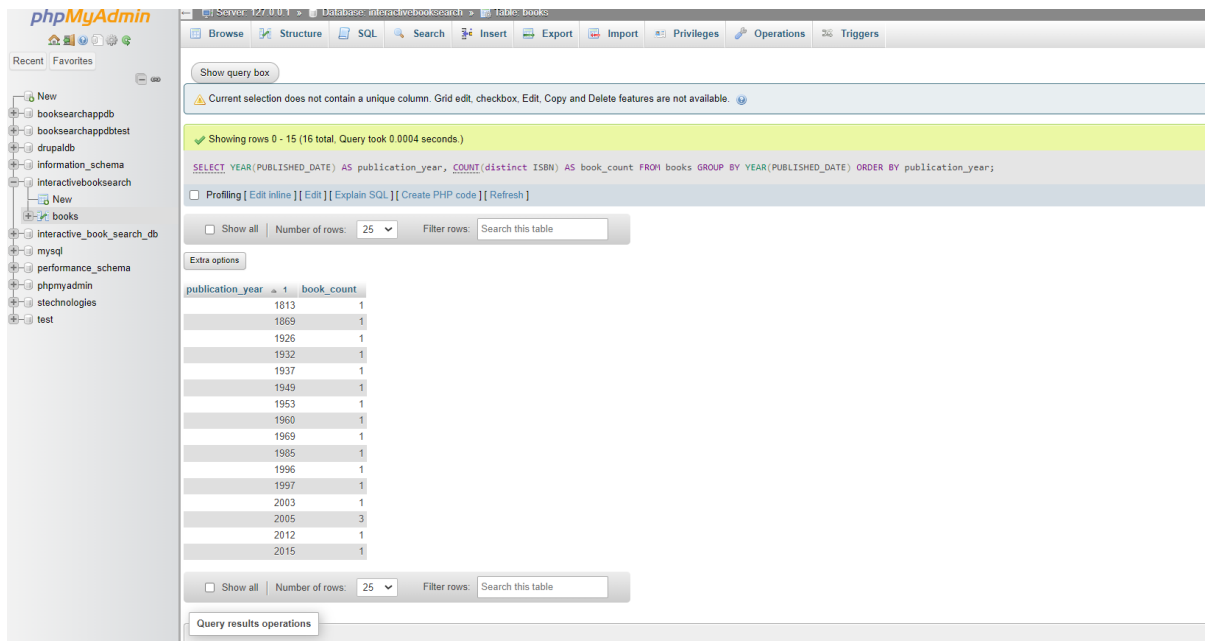
Showing rows 0 - 11 (12 total. Query took 0.0005 seconds)

```
SELECT genre_stats.GENRE, genre_stats.AUTHOR_FIRST_NAME, genre_stats.AUTHOR_LAST_NAME, genre_stats.book_count FROM ( SELECT b.GENRE, b.AUTHOR_FIRST_NAME, b.AUTHOR_LAST_NAME, COUNT(distinct ISBN) AS book_count, RANK() OVER (PARTITION BY b.GENRE ORDER BY COUNT(*) DESC) AS rank FROM books b GROUP BY b.GENRE, b.AUTHOR_FIRST_NAME, b.AUTHOR_LAST_NAME ) genre_stats WHERE genre_stats.rank = 1;
```

GENRE	AUTHOR_FIRST_NAME	AUTHOR_LAST_NAME	book_count
CLASSIC	HARPER	LEE	2
DYSTOPIA	GEORGE	ORWELL	1
DYSTOPIA	ALDOUS	HUXLEY	1
FANTASY	J.K.	ROWLING	1
FANTASY	J.R.R.	TOLKIEN	1
FICTION	HARUKI	MURAKAMI	1
HISTORICAL FICTION	LEO	TOLSTOY	1
MAGICAL REALISM	GABRIEL	GARCIA MARQUEZ	1
NOVEL	ERNEST	HEMINGWAY	1
SCIENCE FICTION	KURT	VONNEGUT	1
SCIENCE FICTION	RAY	BRADBURY	1
THRILLER	GILLIAN	FLYNN	1

5. Query 3 (Calculate the total number of books published each year and display the results by year) – see output in the screenshot below.

```
SELECT YEAR(PUBLISHED_DATE) AS publication_year, COUNT(distinct ISBN) AS book_count
FROM books
GROUP BY YEAR(PUBLISHED_DATE)
ORDER BY publication_year;
```



The screenshot shows the phpMyAdmin interface with the 'books' table selected. The SQL query is displayed in the query box, and the results are shown in a table below. The query is: `SELECT YEAR(PUBLISHED_DATE) AS publication_year, COUNT(distinct ISBN) AS book_count FROM books GROUP BY YEAR(PUBLISHED_DATE) ORDER BY publication_year;`

The results table shows the following data:

publication_year	book_count
1813	1
1869	1
1926	1
1932	1
1937	1
1949	1
1953	1
1960	1
1969	1
1985	1
1996	1
1997	1
2003	1
2005	3
2012	1
2015	1