SQL (Structure Query Language) is used to create and manage databases. It is a standard language for relational database systems such as MySQL, Postgres, SQLite, and Oracle. In data science, SQL is used for data retrieval, analytics & transformation.

Sample Data

<table>
<thead>
<tr>
<th>Albumid</th>
<th>Title</th>
<th>Artistid</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For Those About To Rock We Salute You</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Balls to the Wall</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Restless and Wild</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Artistid</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC/DC</td>
</tr>
<tr>
<td>2</td>
<td>Accept</td>
</tr>
<tr>
<td>3</td>
<td>Aerosmith</td>
</tr>
</tbody>
</table>

Simple Query

Fetch all columns from albums table:

```
SELECT * FROM albums;
```

Fetch single column from artists table:

```
SELECT Name FROM artists;
```

Fetch the 5 rows of Title column from albums table sorted by Artistid:

```
SELECT Title FROM albums ORDER BY Artistid ASC LIMIT 5;
```

Alias

Change the “Title” column’s name to “Album_Title”:

```
SELECT Title as Album_Title FROM albums;
```

Join two or more tables using:

- Inner Join
- Left Join
- Right Join
- Full Join
- Cross Join
- Natural Join

Filtering

Display Title with Artistid greater than 12 from albums table:

```
SELECT Title FROM albums WHERE Artistid > 12;
```

Display all Name except “Accept” and “AC/DC” from artists table:

```
SELECT Name FROM artists WHERE Name != "Accept" AND Name != "AC/DC";
```

Modifying Tables

Insert the new row into artists table using column names and values:

```
INSERT INTO artists (Artistid, Name) VALUES (500, "Abid");
```

Modify the Name columns where Artistid is 500 from artists table:

```
UPDATE artists SET Name="ALI" WHERE Artistid=500;
```

Delete the row from artists table where Artistid is 500:

```
DELETE FROM artists WHERE Artistid=500;
```

Add a new column Bio to artists table:

```
ALTER TABLE artists ADD Bio VARCHAR;
```

Drop the Bio column from artists table:

```
DROP COLUMN Bio;
```