

# 15. DATA MANIPULATION THROUGH SQL

## Learning Objectives

After the completion of this chapter, the student will be able to write Python script to

- ✚ Create a table and to add new rows in the database.
- ✚ Update and Delete record in a table.
- ✚ Query the table.
- ✚ Write the Query in a CSV file.

## Key Points and Notes

- ❖ SQLite is a simple relational database system, which saves its data in regular data files or even in the internal memory of the computer.
- ❖ Cursor is used for performing all SQL commands.
- ❖ The SELECT Statement in SQL is used to retrieve or fetch data from a table in a database.
- ❖ `cursor.fetchall()` - `fetchall ()` method is to fetch all rows from the database table
- ❖ `cursor.fetchone()` - The `fetchone ()` method returns the next row of a query result set or `None` in case there is no row left.
- ❖ `cursor.fetchmany()` method that returns the next number of rows (n) of the result set.

- ❖ symbol is used to print the list of all elements in a single line with space. To print all elements in new lines or separated by space use `sep= "\n"` or `sep= ", "` respectively.
- ❖ The `SELECT` statement can be used along with `GROUP BY` clause. The `GROUP BY` clause groups records into summary rows.
- ❖ `NULL` values are ignored.
- ❖ The `MAX()` function returns the largest value of the selected column.
- ❖ The `MIN()` function returns the smallest value of the selected column.
- ❖ `Execute (sql[, parameters])` :- Executes a single SQL statement. The SQL statement may be parametrized (i. e. placeholders instead of SQL literals). The `sqlite3` module supports two kinds of placeholders: question marks? (“qmark style”) and named placeholders `:name` (“named style”).
- ❖ `cursor.description` contain the details of each column headings .It will be stored as a tuple and the first one that is 0(zero) index refers to the column name. Using this command you can display the table’s Field names.