**SQL Documentation – Crop Recommendation System**

**Project Purpose**

This SQL documentation explains how **MySQL** is used in the **Crop Recommendation System** to:

* Create a database and a table
* Insert crop recommendation data
* Retrieve and display stored records
* Connect with Python to perform all operations

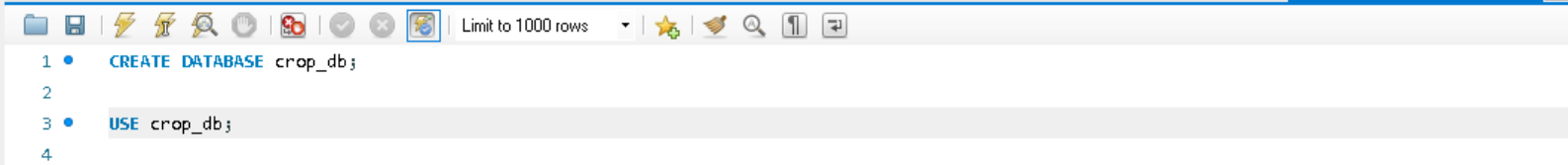
**1. Database Setup**

Before inserting any data, we first need to create the database.

**SQL Query to Create the Database**

CREATE DATABASE crop\_db;

This creates a database named crop\_db.



**2. Table Creation**

Inside the crop\_db database, we create a table named recommendations to store all user inputs and recommended crops.

**SQL Query to Create Table**

CREATE TABLE IF NOT EXISTS recommendations (

id INT AUTO\_INCREMENT PRIMARY KEY,

N FLOAT,

P FLOAT,

K FLOAT,

temperature FLOAT,

humidity FLOAT,

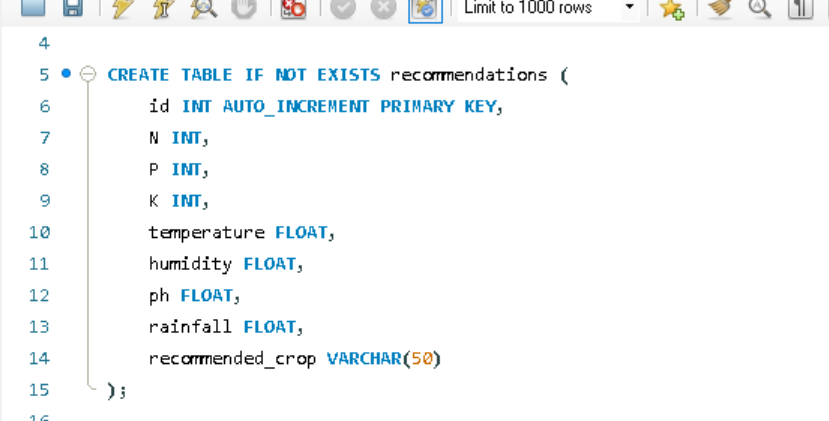
ph FLOAT,

rainfall FLOAT,

recommended\_crop VARCHAR(100)

);

This table stores each crop recommendation with a unique ID and related parameters.



**3. Data Inserted into the Table**

The Python program takes user input and inserts values into the table using a SQL INSERT statement.

**SQL Insert Format (used in Python)**

INSERT INTO recommendations

(N, P, K, temperature, humidity, ph, rainfall, recommended\_crop)

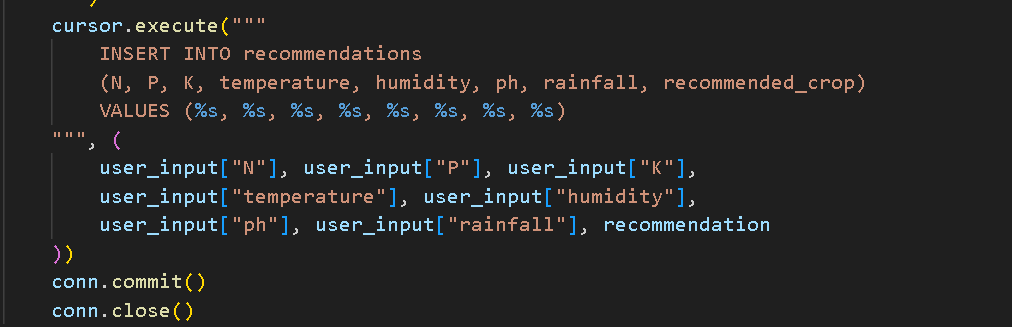
VALUES (value1, value2, ..., value8);

In the program, values are passed using Python variables.

Example:

INSERT INTO recommendations

VALUES (90.0, 42.0, 43.0, 24.5, 65.2, 6.5, 125.6, 'rice');



**4. Retrieving Records**

To view all saved recommendations:

**SQL Select Query**

SELECT \* FROM recommendations;



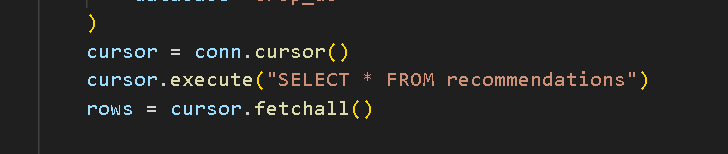
This fetches all rows from the recommendations table.

You can run this in:

* MySQL command line
* Workbench
* Or from Python using:

cursor.execute("SELECT \* FROM recommendations")

rows = cursor.fetchall()



**5. MySQL Connection in Python**

To connect Python with MySQL:

import mysql.connector

conn = mysql.connector.connect(

host="localhost",

user="root",

password="your\_password",

database="crop\_db"

)



**6. Error Handling Tips**

* Ensure MySQL server is **running**.
* Create the database manually **before running the script**.
* Make sure your **username and password** are correct.
* Table creation is safe with IF NOT EXISTS to avoid duplicate creation.

**End of Documentation**

You now have a full understanding of how MySQL is used in this project!