Database Tables & Their Features

S.No	Table Name	Purpose / Key Features
1	**Users**	Stores user information including name, email, password hash, role (Farmer, Expert).
2	**Farms**	Represents farms owned by users, includes location, size, coordinates, etc.
3	**Crops**	Master data for crops with ideal conditions (pH, temperature, water, growth duration).
4	**Fields**	Sub-divisions of farms (e.g., plots) with soil/irrigation type and size.
5	**Sensors**	Linked to fields; tracks hardware devices measuring temperature, moisture, pH, etc.
6	**SensorReadings**	Stores continuous sensor data (value, unit, quality score, timestamp).
7	**FieldWiseCrops**	Tracks which crop is grown in which field, including status, planted area, and notes.
8	**SmartInsights**	Centralized table for alerts, tips, reminders, and AI recommendations to users.
9	**Schedules**	Stores planned tasks like irrigation, fertilization, pest control, with dates and cost.
10	**WeatherData**	Stores historical and forecasted weather data (location, humidity, wind, etc.)

Highlights:

- **Relational Integrity**: Most tables are connected with `FOREIGN KEY` constraints (e.g., `FieldId`, `UserId`, `FarmId`).
- **SmartInsights Table**: Replaces multiple notification/recommendation tables into a single, flexible model.
- **AI-Ready**: You can plug models into `SmartInsights` or generate Schedules/Recommendations based on `SensorReadings` and `WeatherData`.
- **Scalable Design**: Each sensor and reading is traceable down to the field and user level.