Table: users

Field Name	Data Type	Description	Constraints
user_id	INT	Unique identifier for each user	Primary Key, Auto Increment
name	VARCHAR(100)	User's full name	Not Null
email	VARCHAR(150)	User's unique email address	Unique, Not Null
password_hash	TEXT	Encrypted password	Not Null
created_at	DATETIME	Account creation timestamp	Default: Current Time
last_login	DATETIME	Last login time of user	Nullable

Table: profiles

Field Name	Data Type	Description	Constraints
profile_id	INT	Unique identifier for profile	Primary Key, Auto Increment
user_id	INT	References the user record	Foreign Key → users.user_id
phone	VARCHAR(20)	User's phone number	Nullable
region	VARCHAR(50)	Administrative region or division	Nullable
area	VARCHAR(50)	City or locality name	Nullable
country	VARCHAR(50)	Country name	Nullable
zip	VARCHAR(10)	Postal/ZIP code	Nullable
avatar_url	TEXT	Path or URL of user's profile picture	Nullable

Table: scans

Field Name	Data Type	Description	Constraints
scan_id	INT	Unique scan identifier	Primary Key, Auto Increment
user_id	INT	User who uploaded the image	Foreign Key → users.user_id
crop_name	VARCHAR(50)	Name of the crop (e.g. Wheat, Rice)	Not Null
image_url	TEXT	Path/URL of uploaded image	Not Null
label	VARCHAR(50)	Predicted disease label or "healthy"	Not Null
confidence	FLOAT	Confidence score of model	Nullable
severity_percent	FLOAT	Severity as a percentage	Nullable
severity_band	ENUM('low','medium','high')	Severity category	Nullable
gradcam_url	TEXT	URL of visualization image	Nullable
captured_at	DATETIME	Time of image capture	Default: Current Time
lat	FLOAT	Latitude of capture	Nullable
lon	FLOAT	Longitude of capture	Nullable
weather_id	INT	Related weather data	Foreign Key → weather_data.weather_id

Table: disease_info

Field Name	Data Type	Description	Constraints
disease_id	INT	Unique disease identifier	Primary Key, Auto Increment
name	VARCHAR(100)	Disease name	Not Null
cause	TEXT	Cause (pathogen, nutrient deficiency, etc.)	Nullable
symptoms	TEXT	Description of symptoms	Nullable
prevention	TEXT	Preventive measures	Nullable
treatment	TEXT	Recommended treatment method	Nullable

Table: weather_data

Field Name	Data Type	Description	Constraints
weather_id	INT	Unique weather record ID	Primary Key, Auto Increment
lat	FLOAT	Location latitude	Nullable
lon	FLOAT	Location longitude	Nullable
temperature	FLOAT	Temperature in °C	Nullable
humidity	FLOAT	Humidity percentage	Nullable
wind_speed	FLOAT	Wind speed in m/s	Nullable
uv_index	FLOAT	UV index value	Nullable
air_quality	INT	AQI (Air Quality Index)	Nullable
captured_at	DATETIME	Date/time when data was fetched	Default: Current Time

Table: alerts

Field Name	Data Type	Description	Constraints
alert_id	INT	Unique alert identifier	Primary Key, Auto Increment
region	VARCHAR(100)	Affected region	Not Null
alert_type	ENUM('disease','weather','risk')	Type of alert	Not Null
message	TEXT	Alert message details	Not Null
risk_level	ENUM('low','medium','high')	Alert severity	Nullable
created_at	DATETIME	Time of creation	Default: Current Time

Table: tips

Field Name	Data Type	Description	Constraints
tip_id	INT	Unique tip ID	Primary Key, Auto Increment
scan_id	INT	Related scan entry	Foreign Key → scans.scan_id

title	VARCHAR(100)	Tip title	Not Null
category	ENUM('preventive','immediate')	Tip category	Nullable
content	TEXT	Detailed description of tip	Not Null
rank	INT	Importance ranking	Nullable

Table: activity_logs (optional)

Field Name	Data Type	Description	Constraints
log_id	INT	Unique log entry	Primary Key, Auto Increment
user_id	INT	Related user	Foreign Key → users.user_id
action	VARCHAR(100)	User action performed	Not Null
timestamp	DATETIME	Date/time of action	Default: Current Time

Entity Relationships Summary

Relationship	Description		
users → profiles	One user has one profile (1:1)		
users → scans	One user can upload multiple scans (1:N)		
scans → tips	One scan can have multiple AI tips (1:N)		
scans → weather_data	One scan links to a weather record (1:1 optional)		
disease_info → scans	One disease type can appear in multiple scans (1:N)		
users → activity_logs	One user can have many activity logs (1:N)		