

## BCNF Relational Schema

Owner: (user\_id: PK, firstName: VARCHAR, lastName: VARCHAR, IP address: VARCHAR, email: VARCHAR, phone: VARCHAR, *farmer\_id*: FK, *manager\_id*: FK, *organization\_id*: FK)

Farmer: (farmer\_id: PK)

FarmManager: (manager\_id: PK)

AgriculturalOrganization: (organization\_id: PK)

IrrigationSolution: (solution\_id: PK, *visualization\_id*: FK, information: BLOB, *user\_id*: FK)

Insights: (insight\_id: PK, insights: BLOB, *analyst\_id*: FK, *solution\_id*: FK)

Analyst: (analyst\_id: PK, concentration: TEXT, *engineer\_id*: FK, *specialist\_id*: FK)

EnvironmentalSpecialist: (specialist\_id: PK)

Bioengineer: (engineer\_id: PK)

Accesses: (*analyst\_id*: FK, *visualization\_id*: FK)

Visualization: (visualization\_id: PK, image: \*artFile)

Algorithm: (algorithm\_id: PK)

Analyzes: (*algorithm\_id*: FK, *farm\_id*: FK)

Farm: (farm\_id: PK, *factors\_id*: FK, *region\_id*: FK, *plant\_id*: FK, location: coordinates)

product of: (*crop\_id*: FK, *farm\_id*: FK)

Crop: (crop\_id: PK, Name: VARCHAR, Requirements: BLOB, *health\_id*: FK, *yield\_id*: FK)

CropHealth: (health\_id: PK, diseases: TEXT, health: BLOB)

CropYield: (yield\_id: PK, yield: NUMBER)

EnvironmentalFactors: (factors\_id: PK, *coverage\_id*: FK, *moisture\_id*: FK, *humidity\_id*: FK, time: NUMBER)

RainCoverage: (coverage\_id: PK, inchesOfRain: NUMBER, location: coordinates)

SoilMoisture: (moisture\_id: PK, waterSaturation: NUMBER)

Humidity: (humidity\_id: PK, humidity: NUMBER)

GeologicalRegion: (region\_id: PK, *soil\_id*: FK, *climate\_id*: FK, location: coordinates)

Climate: (climate\_id: PK, data: VARCHAR)

SoilType: (soil\_id: PK, type: TEXT)