Model Development Phase Template

Date	21 June 2024
Team ID	739768
Project Title	Opti Crop: Smart Agricultural Production Optimization Engine
Maximum Marks	5 Marks

Feature Selection Report Template

The features for the Opticrop project are essential for monitoring, analyzing, and optimizing agricultural production through advanced data-driven techniques. These features collectively provide comprehensive insights into soil conditions, crop health, and environmental factors, enabling precise and sustainable farming practices. The selected features represent essential variables that will drive the effectiveness and efficiency of the Opticrop project. These features collectively provide comprehensive insights into soil conditions, crop health, and environmental factors, enabling precision agriculture and sustainable farming practices.

Feature	Description	Selected (Yes/No)	Reasoning
Sensor_ID	Unique identifier for each agricultural sensor	Yes	Essential for tracking and managing sensor data.

Field_Location	GPS coordinates or address of the field	Yes	Provides spatial context for sensor readings.
Soil_Moisture	Measurement of soil moisture content	Yes	Critical for monitoring irrigation needs and soil health.
Temperature	Ambient temperature at the sensor location	Yes	Influences crop growth and environmental conditions.
Humidity	Relative humidity levels	Yes	Affects plant health and disease susceptibility.
Light_Intensity	Measurement of light intensity	Yes	Indicates sunlight exposure and photosynthesis levels.
Crop_Type	Type of crop being cultivated	Yes	Determines specific agricultural practices and needs.
Pest_Presence	Detection of pests in the crop area	Yes	Alerts farmers to potential threats and management needs.
Nutrient_Levels	Levels of essential nutrients in the soil	Yes	Guides fertilization strategies for optimal crop growth.
Weather_Data	Integrated weather data (temperature, rainfall)	Yes	Supports weather-based decisionmaking in farming.