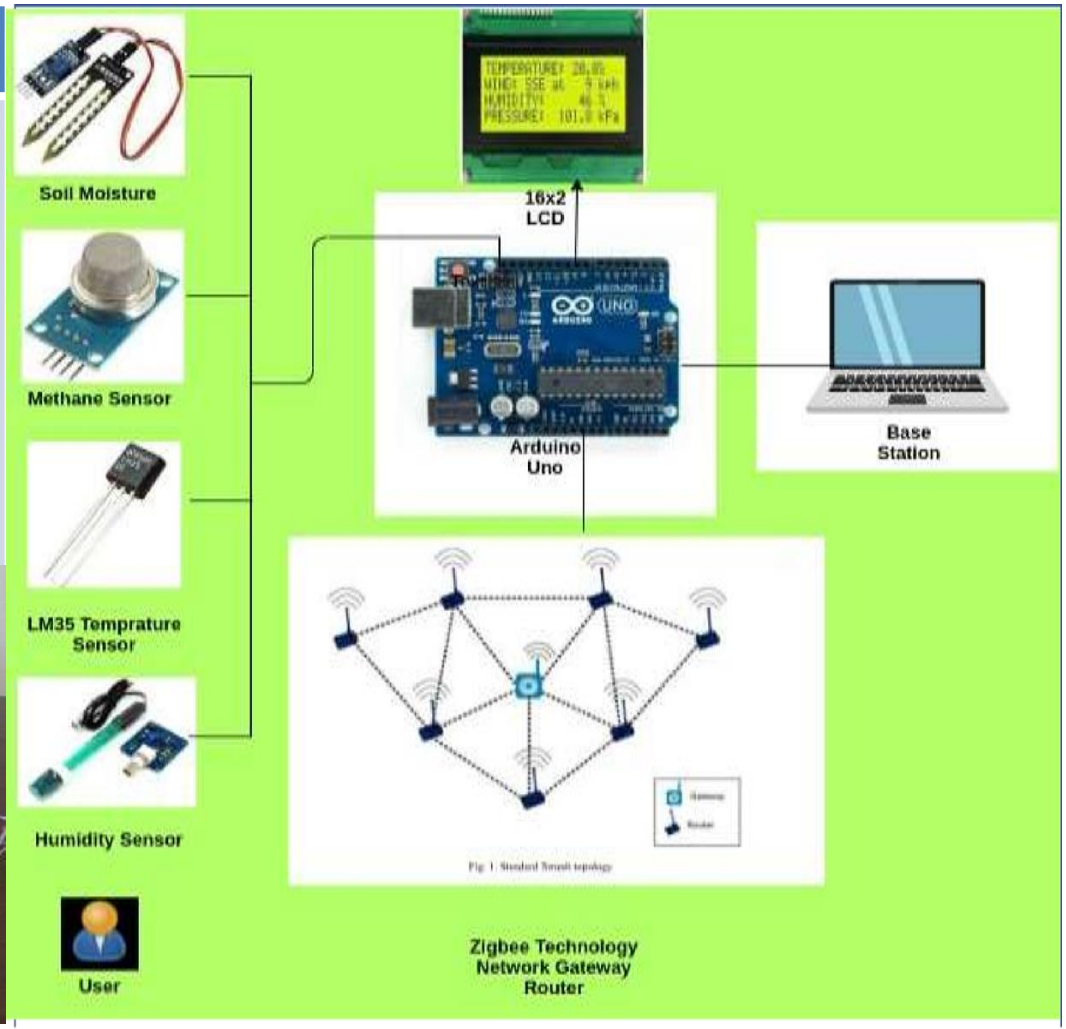
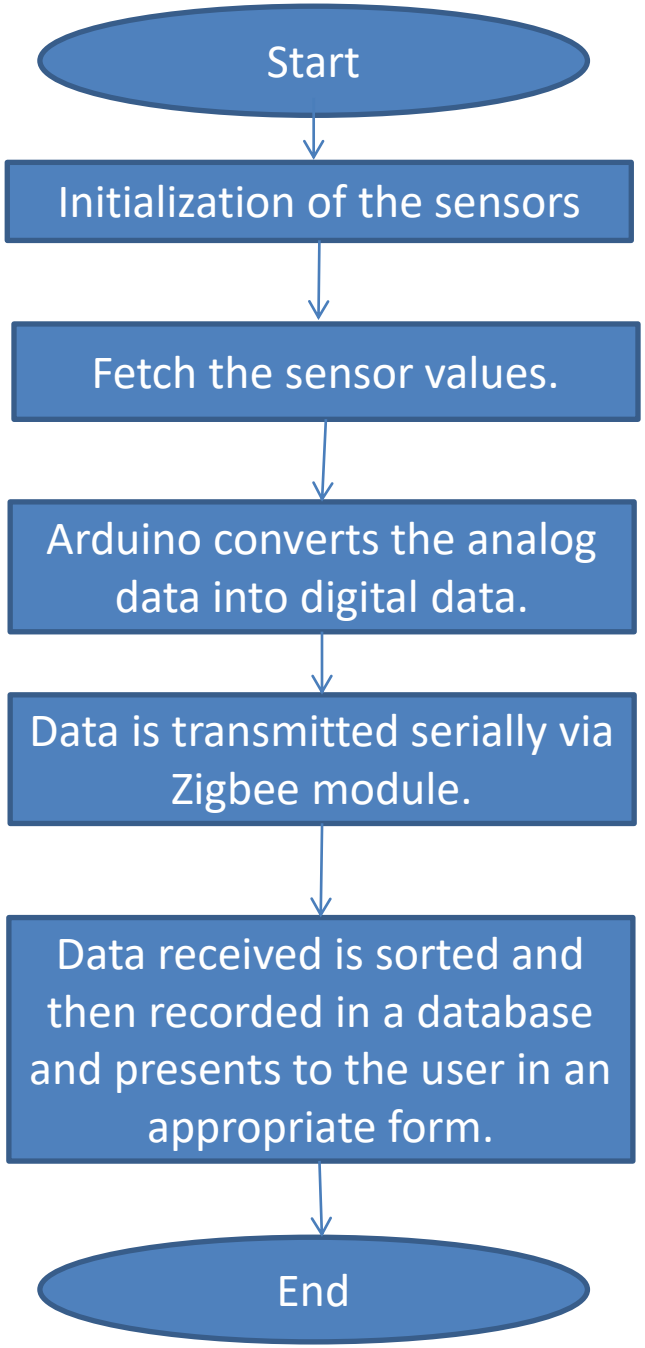
Problem Statement: Wireless Sensor Network(WSN) for monitoring soil quality parameters	Team Name: SPARK
Category: Hardware	Theme Code: ARD(Agriculture & Rural Development)
Technology Bucket: Wireless Sensor Network	Team Leader: Avni Sharma

Features

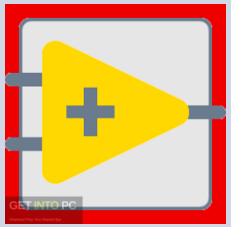
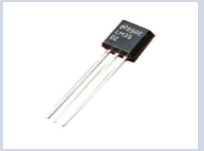
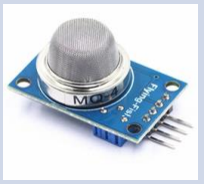
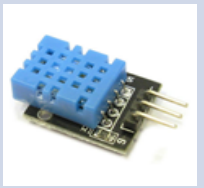
- Precision Farming, new technology.
- Requires minimal energy consumption of the network
- Remotely decision-making
- Monitors the status and parameters of the soil.
- Possible to monitor for long period of time.



FLOW CHART



TECHNOLOGY STACK

HARDWARE STACK		SOFTWARE STACK	
	Arduino Uno		IDE
	Zigbee Module		Python
	FC28 sensor		LabView
	Analog Ph Sensor kit		
	LM35 Sensor		
	MQ-4 Sensor		
	DHT11 Sensor		

Scope/ Future Applications

1) Sensor-Cloud Technology:

- Crop health monitoring and yield prediction using mobile sensor-cloud services.
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2) Big-Data Analytics:

- Building crop growth and disease management models based on farm data.
- Optimal policy determination based on data analytics for government and industries.

3) Internet Of Things:

- Leak detection and remote water flow control in large-scale agricultural field water supply.
- Cost-effective agricultural supply chain management using RFID tags.

Advantages

1) Accurate amount of irrigation & fertilizer use only in necessary areas and control over the quantity of fertilizer used.
2) Directly & precisely monitor the status and parameters of the cultivated lands.
3) Gives opportunity to intervene in emergency situations.
4) High degree of reliability due to Zigbee technology.
5) A portable, easy to handle system.
6) No, late results instant assessment of the data.
7) ECO- FRIENDLY

Dependencies

Our approach depends on the power supply for the initialization of the task.