

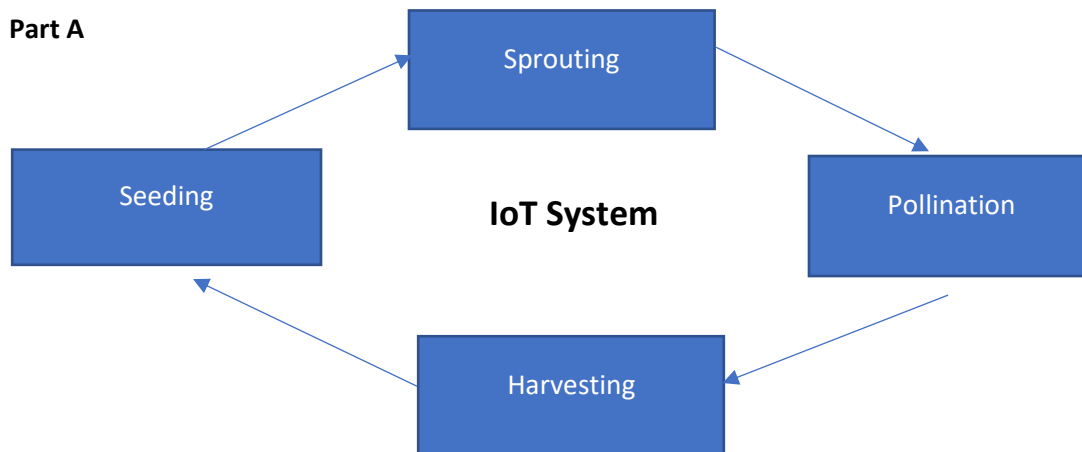
Agriculture using IoT

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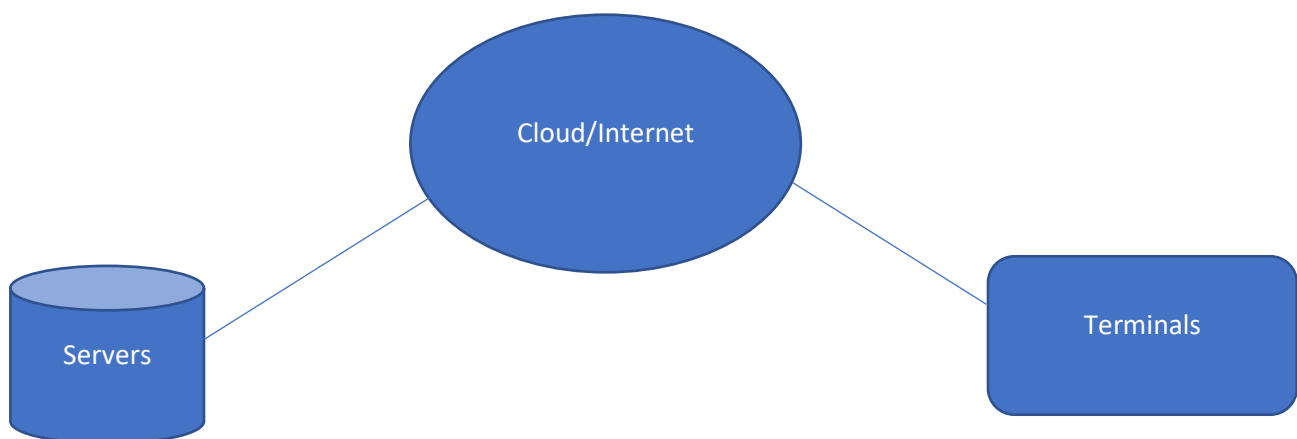
Concept

The fight that world is fighting against covid, the basic precautionary measures one should take is minimal human contact leading to less manpower. But there are certain sectors where manpower plays a significant role, so human interaction cannot be avoided. One such sector is farming. Fulfilling the never-ending and exponentially increasing demand for food along with restrictions is grinding. Regular monitoring over the humidity, temperature, moisture of the soil is mandatory, pesticides to maximize the production. There is an option for maximizing the production remotely that is smart farming. But the major disadvantage is the technology is difficult to adapt to because of the complexity and the cost of the installation. IoT system-based farming requires cloud for the storage of the data that can be accessed remotely through mobile or computer. They also require sensors to maintain favorable conditions to maximize production.

Part A



Part B



The above diagram projects the techniques and operations that are achieved in the farming process. These techniques will require sensors. The technique which uses sensors and the cloud for storage is called smart farming. Optimizing the current algorithm to gain output with minimal error and developing a pocket-friendly system is the objective. Sensors that are being utilized:

1. Temperature
2. Photosensitive
3. Pressure
4. CO₂
5. Soil

Sensors will be connected to a control system that analyses all the values of the sensors and operations accordingly. These sensors can help in building a controlled environment for farming. IoT devices and communication devices are utilized to capture the factor like Temperature, Humidity, Pressure. The actuator has a key role in maintaining the environmental conditions favorable for the crop based on the data accumulated from observing the sensors. The operation that is attainable by including technology in farming are:

1. Crop growth monitoring
2. Detection of sour crop
3. Precise irrigation

Outline:

1. Abstract:
 - 1.1 Information about research and measures that can be performed to enhance and digitize AG-TECH
2. Smart Farms
 - 2.1 Autonomous infrastructure
 - 2.2 Controlled farming with the help of sensors
 - 2.3 Predictive analysis of the crop
 - 2.4 Normal farm vs Smart Farm

3. Architecture

3.1 Sensor Involved

3.2 Connection with control system

3.3 Coneectivity to Internet / Cloud

3.4 Data Storage

3.5 User Interaction with framework.

4. Conclusion

5. References