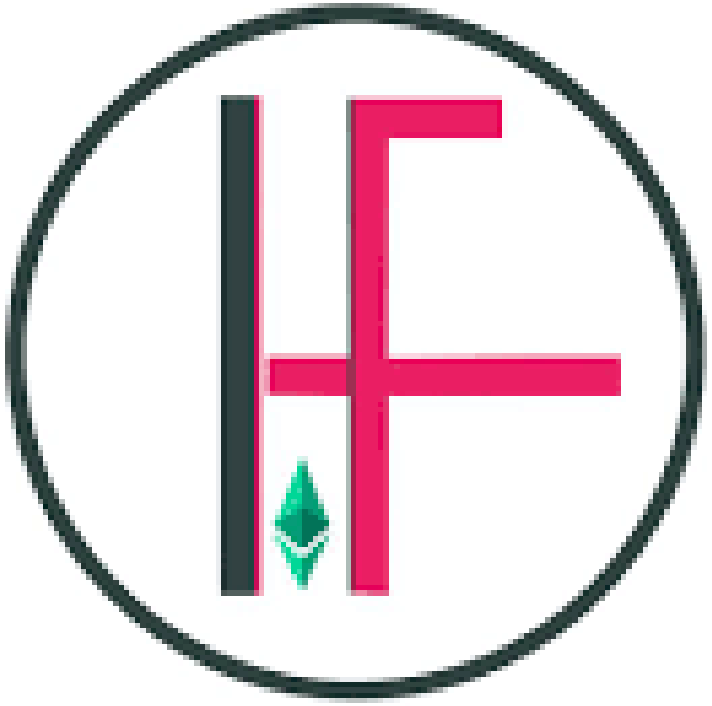
IDEA SUBMISSION

Problem Domain : Agriculture

HACKFEST'22

IIT (ISM) DHANBAD



TEAM NAME: INCOGNITO

INSTITUTE: B.P. PODDAR INSTITUTE OF MANAGEMENT AND TECHNOLOGY

PROBLEM STATEMENT

Making a physical prototype for a micro irrigation system in order to increase the water use efficiency of the irrigation sector by implementing IOT and Deep Learning.

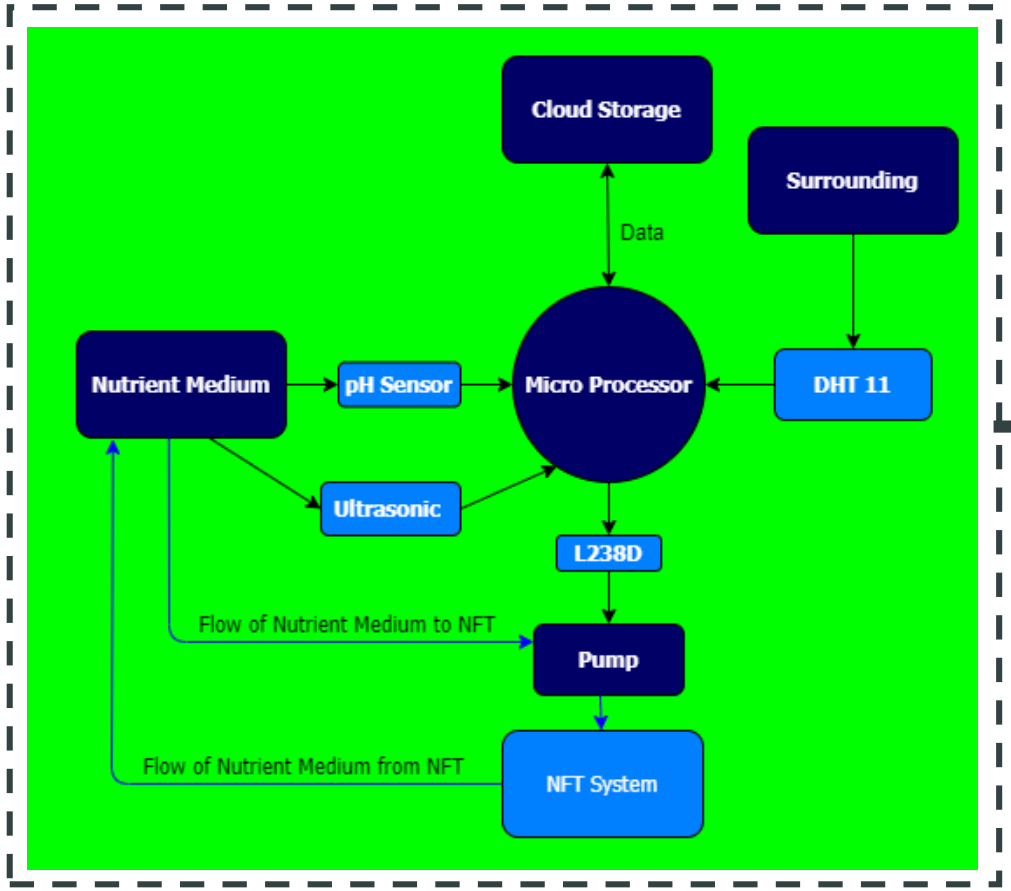
OBJECTIVE

In India, farming is the major sector. About 200 million acers is the arable area out of 25% becomes unusable for repeated cultivation as the soil loses its fertility. Many areas of land also become unusable due to excessive salinity or contamination. So, to make those lands usable and produce high yield, we planned to make a system named IOPONICS.

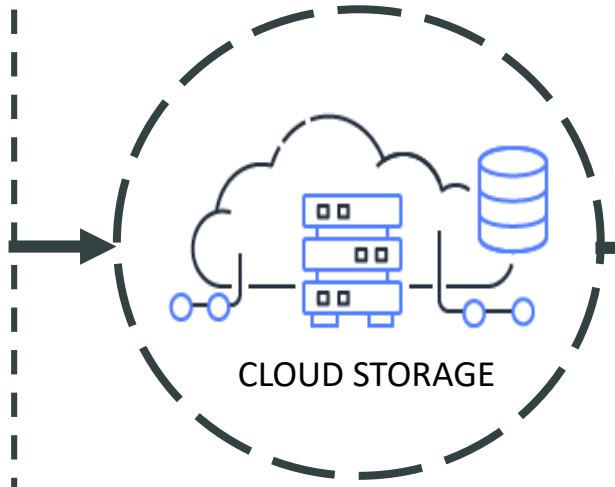
IOPONICS

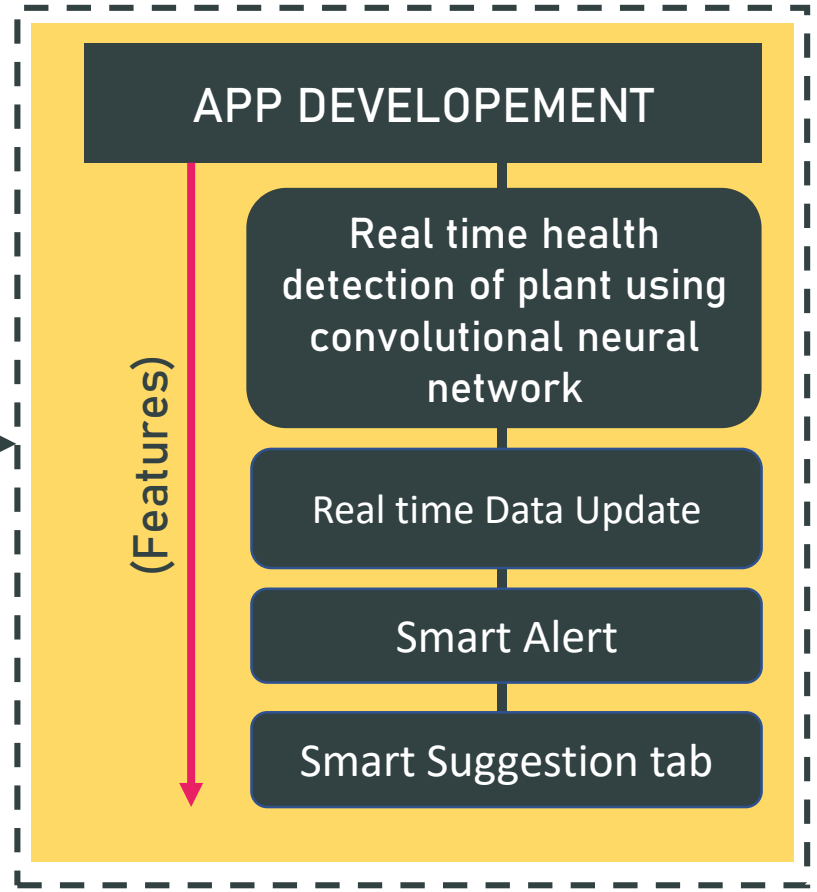
WHEN THE REALMS OF HYDROPONICS, IOT, AND ARTIFICIAL INTELLIGENCE CONVERGE

APPROACH



(HARDWARE)





(SOFTWARE)

TECHNOLOGY STACK

- Micro processor : Control the entire system and fetch the data from the sensors and send to firebase.
- Ph sensor : Sense pH of water solution.
- Ultra sonic : Sense the water level.
- DHT 11 sensor : Sense temperature and humidity around the system.
- L238D: To control the water flow by motor speed.

(HARDWARE)

- Tensorflow
- Keras
- Numpy
- Pandas
- Matplotlib
- React Native

(SOFTWARE)

USE CASE

- Precise water management and water conservation
- Utilisation of baran land
- Cultivation in urban areas
- Easy implementation with solar module
- Cost-effective and allows easy implementation
- Entirely monitored by a hand-held device (smartphone)

TEAM

Team Leader Name: Aisik Das

Branch : B.Tech | Stream : EE | Year : III

Team Member 1 Name: Randrita Sarkar

Branch : B.Tech | Stream : IT | Year: III

Team Member 2 Name: Mookul Paul

Branch : B.Tech | Stream : EE | Year: II

Team Member 3 Name: Sreshtha Paul

Branch : B.Tech | Stream : EE | Year: III