

# **VRIKSH – THE AI BASED TALKING PLANT**

## **Participants:**

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## **Problem:**

Plants supply food to nearly all organisms, including humans. We eat either plants or other organisms that eat plants. Plants maintain the balance in atmosphere. They produce oxygen and absorb carbon dioxide during photosynthesis. With the dependency on plants, the effective communication of the plantae kingdom and human civilisation will lead us to better future. For this, there is a need of a proper communication system where both human and plants can express their needs in a mutually understandable way.

## **Solution:**

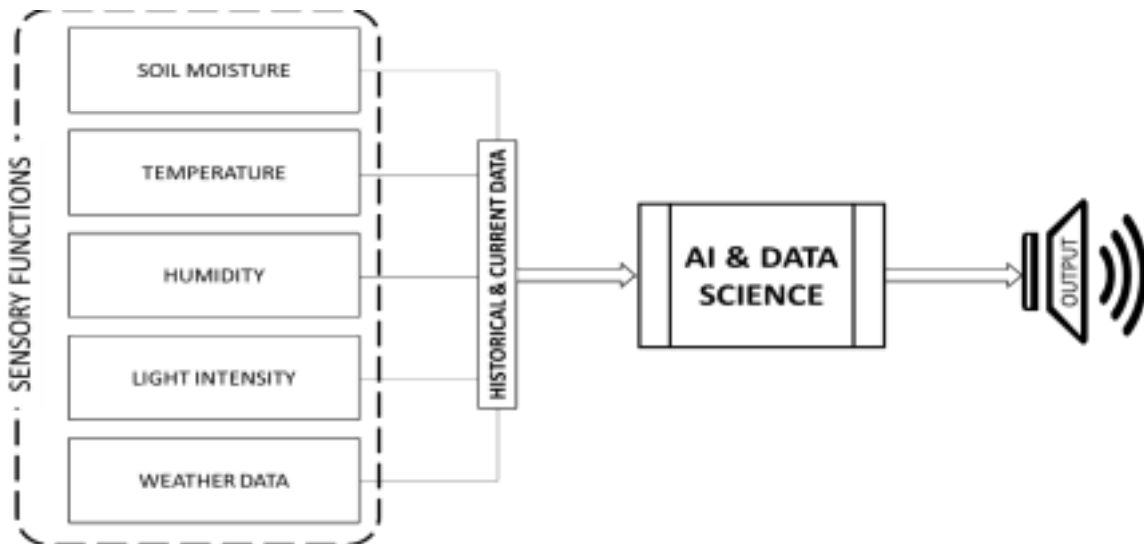
In the normal human society, the most common way of communication is verbal communication. How it would be, if a system can be established through which plants can express their requirements through verbal means. This can be made feasible using advanced computer technologies, like **Artificial Intelligence (AI) and Data Sciences**. This will in turn enhance the communication between plants and humans and increase the productivity.

## **Technology:**

Our brain receives the stimuli from various sensory organs and responds accordingly. In the same way, plants can also be provided with **artificial sensors for their major sensory functions like – Soil Moisture, Temperature, Humidity, Light intensity & Weather**. This will provide necessary data, which can then be converted into human understandable language. The **plant can speak out the same through artificial computed voice**.

Using advanced AI techniques, the smart plant can also be trained to become **proactive/predictive** and demand for necessities before time for efficient recovery. **The provided AI will have the power to analyse the data from the sensors and give the required output by passing it through various algorithms.**

## **Diagram:**



As it has also been found that having a gossip with plants improves its health; so by using **AI Based technologies like NLP (Natural Language Processing), artificial computed voice and trained chat-bot models**, a two-way verbal chat system can also be made.

**This system successfully implements – Tech for nature, Powered by nature.**

The system uses **solar panel** to power up the system.

Other minor extensions such as **mobile notification of requirements, self-care mode, remote plant tracking** etc. can also be added.

AVAILABLE IN THREE VERSIONS : V-MEGA for agricultural fields, V-MINI for small plants.

### **V-MEGA**

1. CUSTOM NUMBER OF SEGMENTS FOR AREA
2. INVOLVEMENT OF NPK SENSOR FOR NUTRIENTS REQUIREMENT.
3. MOBILE APP TO SHOW DATA ACCORDING VIA COORDINATE POINTS N FIELD.
4. BACKUP ENERGY FROM SOLAR PANEL + WIND MILL
5. HIGHLY RESISTANT TOWARDS TEMPERATURE, PRESSURE AND WATER.

### **V-MINI**

1. WORKS EFFICIENTLY WITHOUT INTERNET.
2. COSTS UNDER Rs. 1000/-
3. NO COMPLICATED SETUP ONLY PLUG AND PLAY
4. SHORT RANGE NOTIFICATIONS
5. COMPACT SIZED WATERPROOF PRODUCT.
6. BUZZER INDICATION ABOUT SOIL AND LIGHT.
7. FAST CHARGING SYSTEM

COST ANALYSIS:

PROTOTYPE COST		PRODUCT COST			
MATERIALS	COST	MATERIALS	COST	INCR/DECR	REASON
BUILD MATERIAL	400	BUILD MATERIAL	200	D	
ARDUINO + SUPP.	1500	NODE MCU	350	D	
HARDWARE	100	HARDWARE	50	D	
SOFTWARE(BUILD)	0	SOFTWARE(BUILD)	>0	I	*
SOLAR PANEL	100	SOLAR PANEL	≈100	Approx. Eq	
ORNAMENTAL	350	ORNAMENTAL	200	D	
SHIELDING	250	SHIELDING	>250	I	**
TOTAL	2700	*(PROFESSIONAL APIs + DEPLOYMENT CHARGE + BUILDING COST)			
		**(FOR MAKING IT MORE RESISTANT TO ADVERSE CONDITIONS)			

1. In addition to its MANUFACTURING COST and LABOUR COST will be added to the overall product build.
2. Cost reduction would be done because of bulk product and material

### CONCLUSION:

The improvement in communication between plants and humans will lead us to understand nature in a better way. This system demonstrates how plants can be provided with artificial intelligence to communicate to humans. Now, it is high time that we understand the requirements of the plants and take necessary actions for their sustainability.

