Deloitte TechnoUtsav 3.0

PLANT DOCTOR

IIT Bhilai_404 ERROR

Content

Motivation to solve the problem

- ***Plant diseases and pests are widely considered an important cause of crop losses, and sometimes a threat to the food supply.***

- ***We are losing a significant amount of yield on a global scale to pests and diseases, at a time when we must increase production to feed a growing population.***

- ***People not being able to recognize the disease in the early stages due to which the spread of the disease increases.***

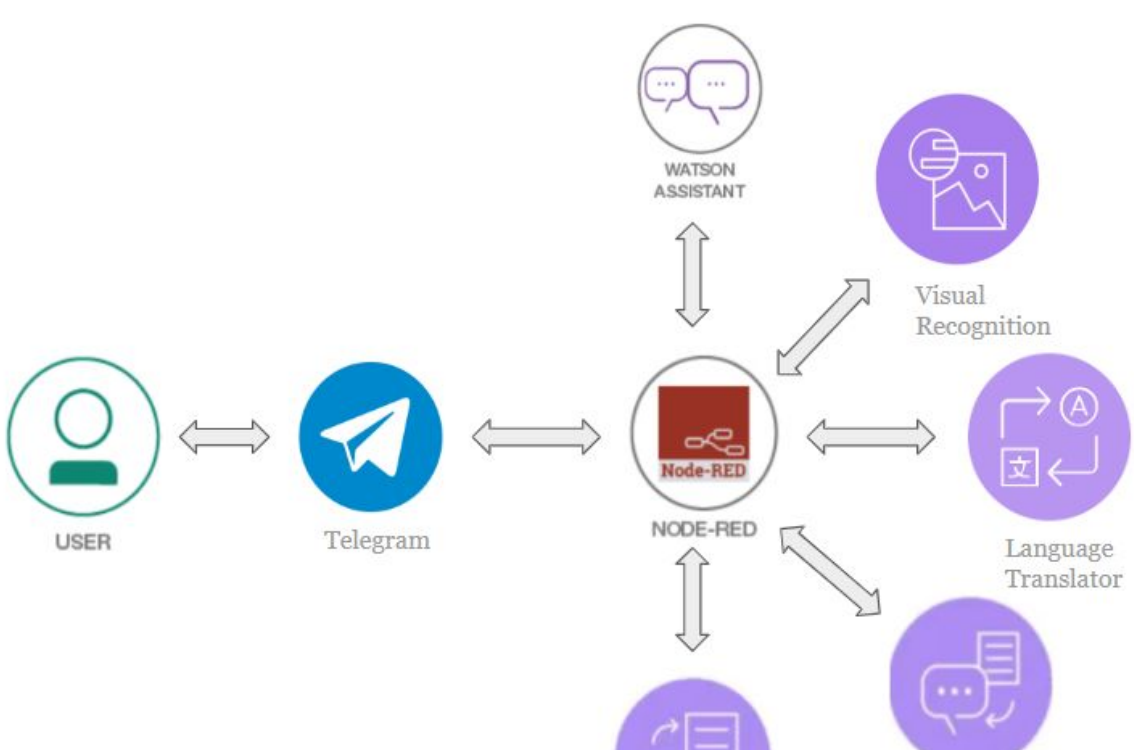
Issues and Solutions

Issues

- The naked eye observation of experts is the main approach adopted in practice for detection and identification of plant diseases. However, this may not be too helpful and requires too many experts which might be prohibitively expensive in large farms.
- Due to fear of attack of pests/diseases, agriculturalist uniformly sprays pesticides/fertilizers in whole farm which may lead to damage of soil as well as plant.
- The usage of excess fertilizer alters the soil by creating too high of a salt concentration.

Solutions

- We created a Telegram bot that takes leaf images as input and returns the output whether the given input leaf is healthy or it is infected by any disease.
- If the leaf has any disease, then prescribes the remedies according to it.
- This makes the agriculturalist to spray a limited and enough pesticide/fertilizer at a specified target area where either pest/disease is present or maybe an occurrence of attack in future.


WATSON
ASSISTANT
Visual
Recognition
USER
Telegram
Node-RED
NODE-RED
Language
Translator
Text to Speech
Speech to Text

Limitations and Future direction

- The proposed solution cannot detect multiple diseases in one image.
- The model recognizes 26 plant diseases and 12 healthy plants for now. After training on diverse datasets, our model will be capable of detecting more no.of diseases.
- Real time detection using drones on the large fields.
- Integrating climate data for crop yield prediction and recommendations.
- Ordering fertilizer from ecommerce site.
- Setting reminder for pesticides/watering etc.

Thank you!