IBM PROJECT

Fertilizers Recommendation System For Disease Prediction

ABSTRACT

- ✓Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques.

- ✓ An automated system is introduced to identify different diseases on plants by checking the symptoms shown on the leaves of the plant. Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases.

EXISTING PROBLEM

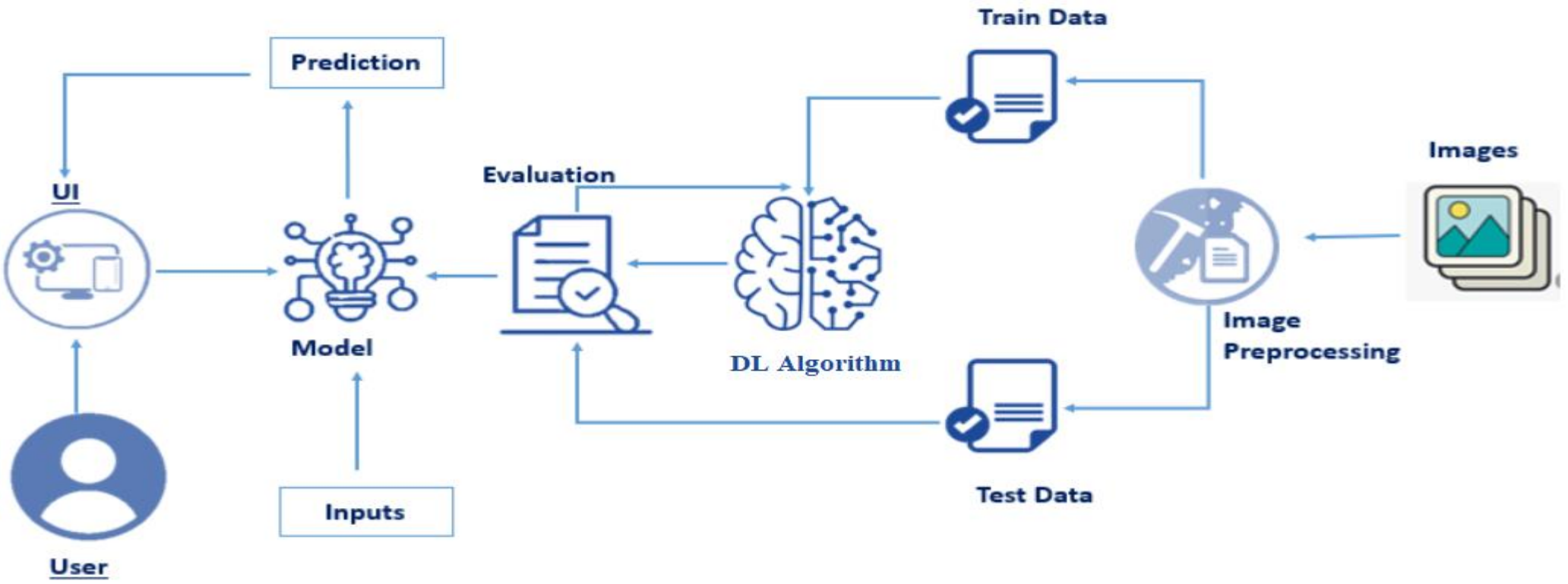
- ✓Adequate mineral nutrition is central to crop production. However, it can also exert considerable Influence on disease development. Fertilizer application can increase or decrease development of diseases caused by different pathogens, and the mechanisms responsible are complex, including effects of nutrients on plant growth, plant resistance mechanisms and direct effects on the pathogen. The effects of mineral nutrition on plant disease and the mechanisms responsible for those effects have been dealt with comprehensively elsewhere. In India, around 40% of land is kept and grown using reliable irrigation technologies, while the rest relies on the monsoon environment for water. Irrigation decreases reliance on the monsoon, increases food security, and boosts agricultural production.
- ✓Most research articles use humidity, moisture, and temperature sensors near the plant's root, with an external device handling all of the data provided by the sensors and transmitting it directly to an external display or an Android application. The application was created to measure the approximate values of temperature, humidity and moisture sensors that were programmed into a microcontroller to manage the amount of water.

PROPOSED SYSTEM

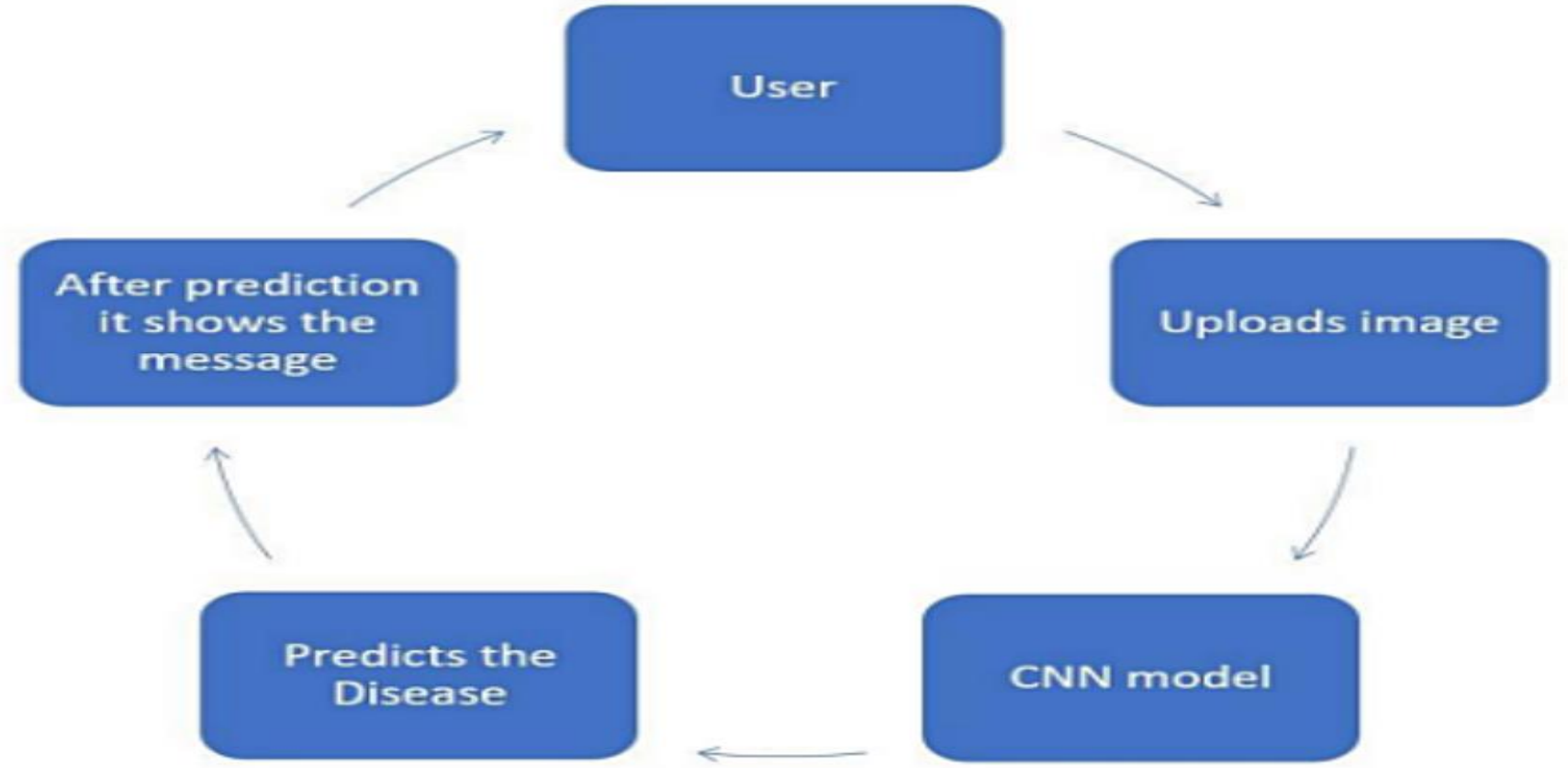
So we have built Web Application where:

- Farmers can easily interact with the application that we have built.
- This web application provides the user interface to upload images of diseased crop or leaf.
- Detection and recognition of plant diseases using machine learning are very efficient in providing symptoms of identifying diseases at its earliest.
- Our web application analysis the disease of the crop or leaf and suggests the farmer with the fertilizers are to be used.
- It recommends the fertilizer for affected leaves based on severity level.
- This web application makes the farmers to take right decision in selecting the fertilizer for crop disease such that agricultural sector will be developed by innovative idea.

TECHNICAL ARCHITECTURE



FLOW CHART


User
Uploads image
CNN model
Predicts the Disease
After prediction it shows the message

HARDWARE & SOFTWARE REQUIREMENT

✓ To complete this project, you should have the following software and packages.

Software's:

➢ Anaconda Navigator

➢ py charm

➢ Visual studio code

➢ Jupiter notebook

➢ IBM Watson studio

Packages:

➢ Tensor flow

➢ Keras

➢ Flask

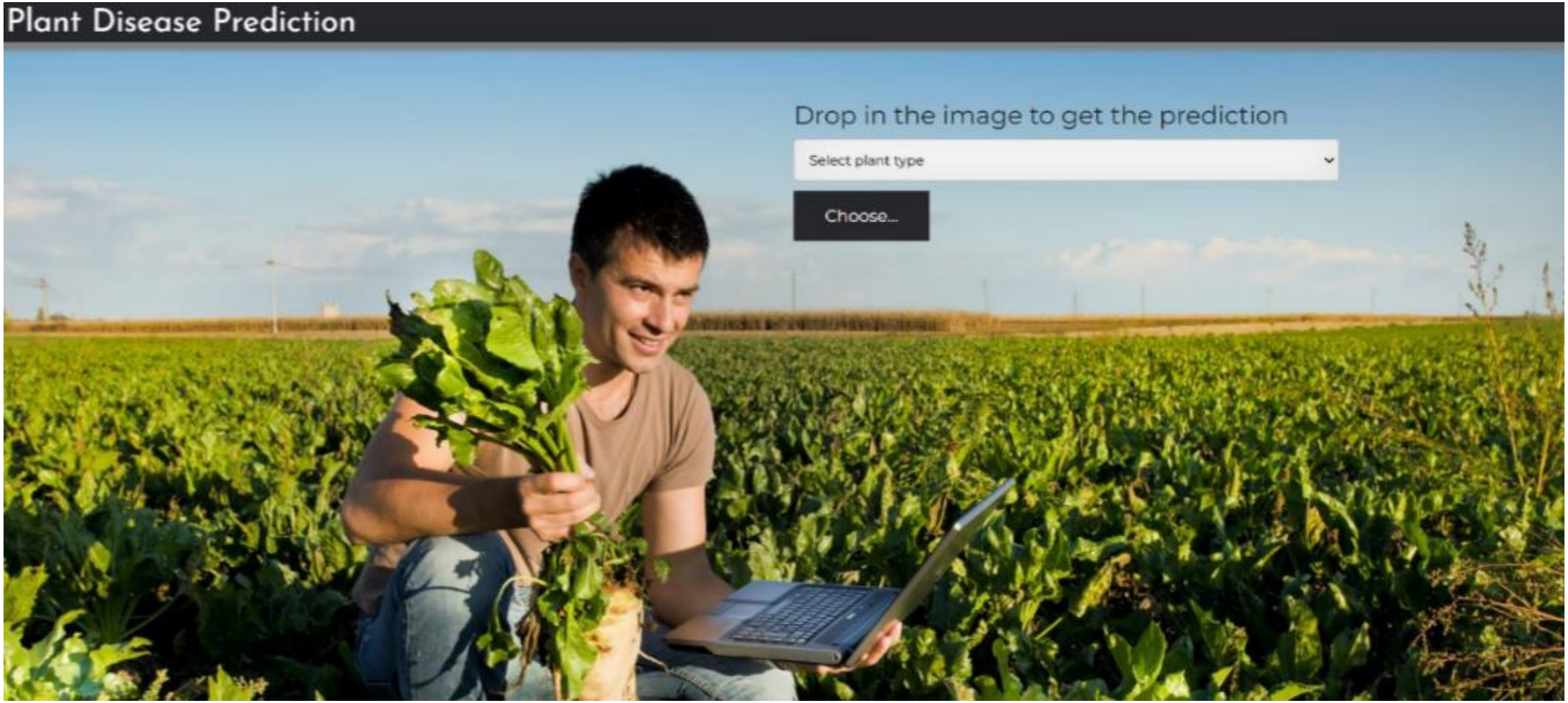
➢ numpy

➢ Pandas

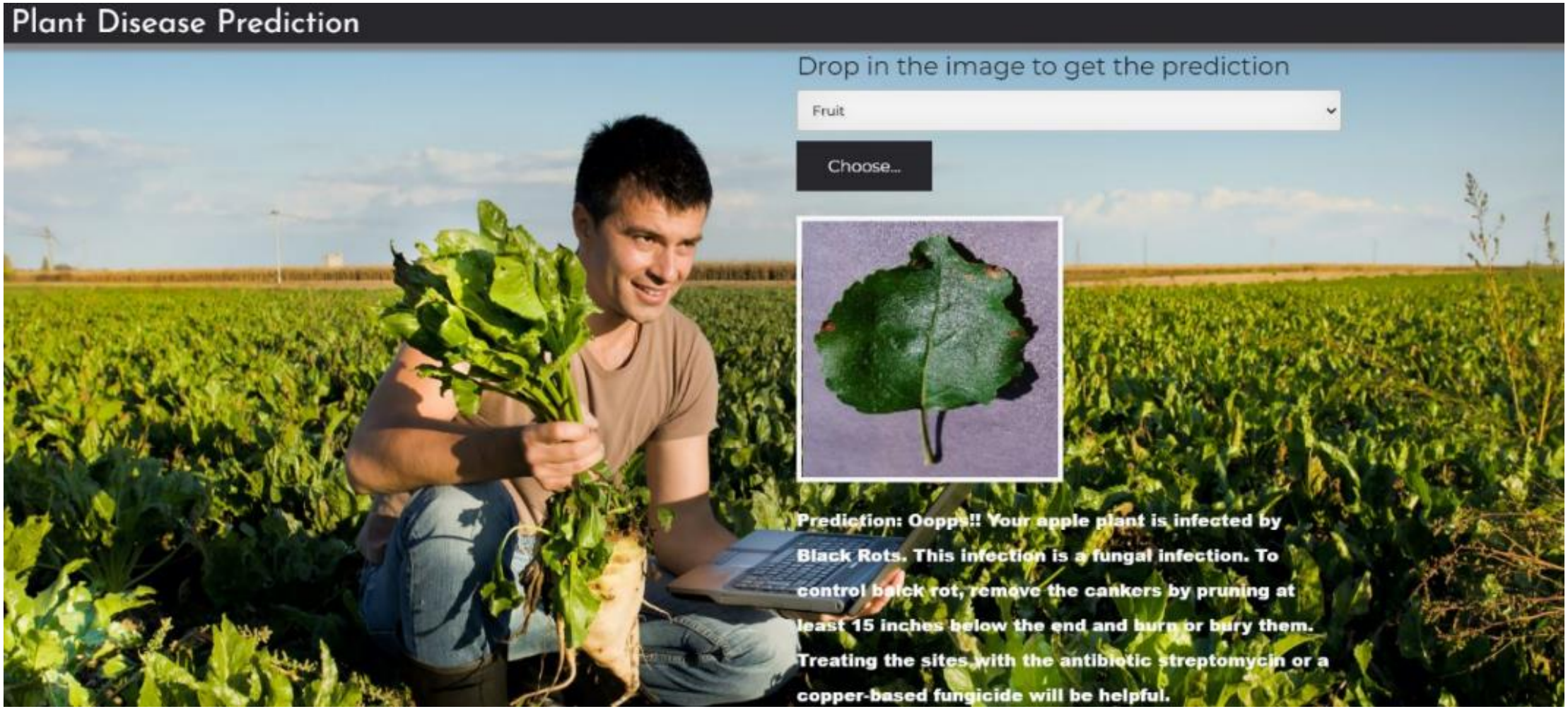
OUTPUT


Plant Disease Prediction
Home
Predict
Fertilizers Recommendation System
For Disease Prediction!!
Agriculture is one of the major sectors worls wide. Over the years it has developed and the use of new technologies and equipment replaced almost all the traditional methods of farming. The plant diseases effect the production. Identification of diseases and taking necessary precautions is all done through naked eye, which requires labour and laboratries. This application helps farmers in detecting the diseases by observing the spots on the leaves, which inturn saves effort and labour costs.

OUTPUT


Plant Disease Prediction
Drop in the image to get the prediction
Select plant type
Choose...

OUTPUT


Plant Disease Prediction
Drop in the image to get the prediction
Fruit
Choose...
Prediction: Oopps!! Your apple plant is infected by Black Rots. This infection is a fungal infection. To control balck rot, remove the cankers by pruning at least 15 inches below the end and burn or bury them. Treating the sites with the antibiotic streptomycin or a copper-based fungicide will be helpful.

APPLICATION

- This web application can be used by farmers or users to check whether their plant is infected or not and can also show the remedy so that the user can take necessary precautions.
- These kind of web applications can be used in the agricultural sector as well as for small house hold plants as well.

Thank you

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