**Group No: G16**

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**Title: Plant Disease Classification using Image processing**

**Abstract:**

India is an agricultural country. Farmers have wide range of diversity to select suitable fruit and vegetable crop.

Plant diseases affect the growth of their respective species, therefore their early identification is very important

Plant diseases are generally caused by pest, insects, pathogens and decrease the productivity to large scale if not controlled within time. Agriculturists are facing lose due to various crop diseases. It becomes tedious to the cultivators to monitor the crops regularly when the cultivated area is huge that is in acres.

Many Machine Learning (ML) models have been employed for the detection and classification of plant diseases but, after the advancements in a subset of ML, that is, Deep Learning (DL), this area of research appears to have great potential in terms of increased accuracy. Many developed/modified DL architectures are **implemented along with several visualization techniques to detect and classify the symptoms of plant diseases.**

**Our Advantages:**

1. **Detect diseased leaf, stem, fruit.**

2. Quantify affected area by disease.

3**. Find the boundaries of the affected area**.

4. **Determine the color of the affected area**.

5. **Determine size & shape of leaf.**

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**Why this Topic ?**

Disease management is a challenging task. Mostly diseases are seen on the leaves or stems of the plant. Precise quantification of these visually observed diseases, pests, traits has not studied yet because of the complexity of visual patterns. Hence there has been increasing demand for more specific and sophisticated image pattern understanding

There are many methods in automated or computer vision plant disease detection and classification process, but still, this research field is lacking. In addition, there are still no commercial solutions on the market, except those dealing with plant species recognition based on the leaves images.

**Software Requirement :**

* Python3
* Jupyter
* Tensarflow
* Matplotlib
* Numpy
* Keras

**Hardware Requirement :**

* Processor : Intel i3-3gen
* Ram: 4-8 Gb

We can useGoogle Colab also.