PROJECT TITLE: PLANT DISEASE DETECTION USING CNN

PROBLEM STATEMENT: This project aims to detect whether a plant is affected by any disease by analysing images of its leaves. A convolutional neural network (cnn) model is trained using labelled datasets of diseased and healthy plant leaves. Once trained, the model can classify unseen leaf images and predict the presence or absence of disease accurately.

PIPELINE:

1.DATA COLLECTION: First we have to collect dataset of leaves of different plants from Kaggle or any other sources.

2.DATA UPLOADING: We have zip file containing train folder , test folder and validate folder and we have upload this in the google collab , then there we unzip the folder and train the model there.

3.CNN MODEL: It is type of artificial neural model that is used for the image processing (computer vision). Convolutional Neural Network (CNN), a deep learning architecture specialized for image analysis, is used to extract features and classify images. The model is trained on the training set and validated with the validation set.

4.IMAGE PROCESSING & AUGMENTATION: Images are resized (e.g., to 129×129 pixels) for consistency. Augmentation techniques such as rotation, flipping, and scaling are applied to enhance model robustness.

5. MODEL EVALUATION: The model's accuracy, precision, recall, and loss are measured on the test dataset to assess performance. The trained model is then ready for deployment or further improvement.