

**V.S.B. ENGINEERING COLLEGE, KARUR**  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**  
**IBM NALAIYA THIRAN PROJECT**  
**STRUCTURE**

Date	14 November 2022
Team ID	PNT2022TMID33289
Project Name	Fertilizers Recommendation System for Disease Prediction

- **Project Structure:**

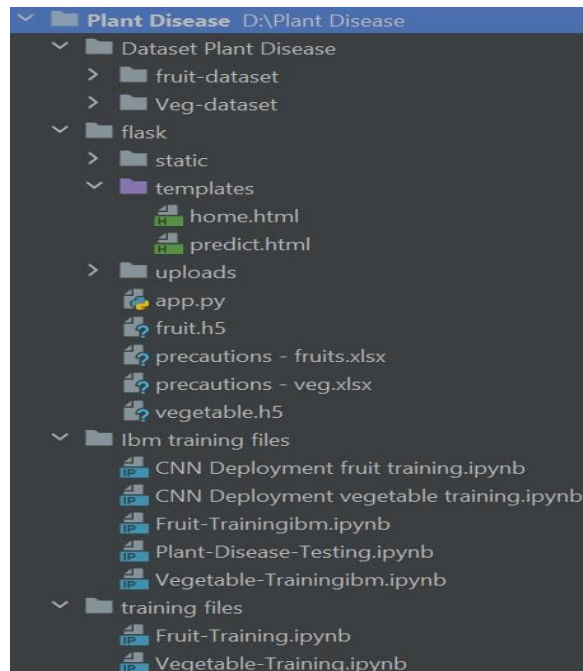
The dataset folder contains two folders for the fruit and vegetable dataset which again contains a test and train folder, each of them have images of different diseases.

The Flask folder has all the files necessary to build the flask application.

- the static folder has the images, style sheets, and scripts that are needed in building the web page.
- templates folder has the HTML pages.
- uploads folder has the uploads made by the user.
- app.py is the python script for server-side computing.
- .h5 files are the model files that are to be saved after model building.
- precautions excel files contain the precautions for all kinds of diseases.

Fruit-Training.ipynb, Vegetable-Training, and Plant-Disease-Testing.ipynb are the training and testing notebooks.

IBM folder contains IBM deployment files.



- **Data Collection:**

**The first step is to download the dataset**

Create Train and Test folders with each folder having subfolders with leaf images of different plant diseases. You can collect datasets from different open sources like kaggle.com, data.gov, UCI machine learning repository, etc. The folder contains provided in the project structure section has the link from where you can download datasets that can be used for training. Two datasets will be used, we will be creating two models one to detect vegetable leaf diseases like tomato, potato, and pepper plants and the second model would be for fruit diseases like corn, peach, and apple.

- **Image Preprocessing**

Now that we have all the data collected, let us use this data to train the model. before training the model you have to preprocess the images and then feed them onto the model for training. We make use of the Kera's Image Data Generator class for image preprocessing.

For more info about image preprocessing please click on the below link [data Augmentation](#)

**Image Pre-processing includes the following main tasks**

- Import ImageDataGenerator Library.

- Configure ImageDataGenerator Class.
- Applying ImageDataGenerator functionality to the trainset and test set.

Note: The ImageDataGenerator accepts the original data, randomly transforms it, and returns only the new, transformed data.

To know more about the data generator class click on this [link](#)

Let's build model for fruit leaf disease detection

- a. Open Jupyter notebook and create a new python file, name
- b. Fruit- Training.ipynb and save it in the project folder.
- c. To know more about the usage of the Jupyter notebook watch the video given in the pre-requisites section.