

## **Project flow**

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Date	17 November 2022
Project Name	Fertilizer Recommendation System For Disease Prediction

Project Flow is a measure of the amount of change that is expected to occur within a project over time. It depicts the progression of a project product from conception and design to delivery and deployment. The project flow describes the predefined sequence of activities required to plan, produce, deliver, and maintain the project product, and also the information, materials, and resources needed by the project.

**There are key factors that add to project flow, These elements are as follows:**

- ✓ Project tasks and activities
- ✓ Any interactions between activities and tasks
- ✓ Resources and budget
- ✓ Time limits and activity schedules
- ✓ Information required to keep project activities running
- ✓ Deliverable for the project.

**The project flow for this project is as follows:**

- The user interacts with a web camera to read the information from a images inputs.
- Once the model gets the input image from the frame, if a leaf disease is detected, it is displayed on the console, an prediction is generated.

**If we want to complete the above goals, then we need to complete the following process:**

### **1. DATASET COLLECTION:**

- Collect the dataset/information about leaf disease or we need to create it. In Artificial intelligence or machine learning dataset collection is the process of collect the information of our targeted data. In this project we need collect all the information about in leaf disease image formatted data .then we need to process and train the data for our machine learning model.

### **The significance of collecting accurate and appropriate data**

Regardless of the field of study or preferred method of data definition (quantitative vs. qualitative), accurate data collection is critical to the integrity of research. The use of appropriate data collection instruments (existing, modified, or newly developed) as well as clearly defined instructions for their proper use reduces the possibility of errors occurring.

### **2.IMAGE PREPROCESSING:**

Image Pre-processing is very important to create a model .First we need to collect all the images and save it with one common directory. And then we create a label for all the images data. Because machine can learn all the information of the images with label.so we must need to give the labelled data on my machine. All the images are must be captured by high quality camera. After we complete the process above then we need to segregate the dataset into train and test data.

- Import the library for the Image Data Generator.
- Specify the arguments and parameters for the Image Data Generator class
- Applying it to the train set and test set.

## **MODEL BUILDING:**

Model building is a crucial part of this project. Before we create a model we must be complete all the pre-processing steps like datasets collection and pre-processing the images.model building play a vital role in machine learning development because its allows you to predict and detect the object using given data.

### **Steps to build the model**

- Import the necessary libraries to build the model.
- Separate the dataset to train and test.
- Developing the CNN algorithm.
- Developing the CNN layers like convolution and hidden layers.
- Add the path for train and test folder to machine.
- Train the data for machine.
- Save the model.
- Finally test the model.

## **Testing the model and Alerting process**

- Image processing technique is very much essential to observe the intensity of disease. As the open eye observation may result poor accuracy and it may vary person to person. In this paper with the help of KNN-, image of paddy leaf has been segmented.
- Disease affected pixels and unaffected pixels the percentage of disease affected pixels has been calculated
- According the percentage of disease affected pixels the severity of disease can be understood; consequently appropriate measure can be taken to cure the disease.