DEVELOPMENT OF ANDROID APPLICATION FOR SMART FARMING

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Abstract:　Now a days agriculture crops face many problems like traits or diseases. Each year plant diseases, viruses and fungal attacks lead to crop, losses up to 30 percent of total production. Detection is the process of identifying the presence of symptoms of disease. Farmers in India have minimal access to agricultural experts, who can inspects crop for identifying disease and provide advice about disease. Delayed expert responses or ad- vice to queries of each farmers too late which are useless. Automatic detection of plant disease is an important as it beneficial to monitor large field of crops and identifies the presence of disease symptom on the plant leaf. In this project we develop Mobile app for automatically detecting the plant disease through image processing techniques with the objective providing fast, accurate, ease of use and inexpensive solution for farmers. Today mobile devices are used frequently by everyone, including the farmers and countryside peoples. According to observations of Information and Communication Technologies (ICT) mobile plays vital role in daily life of farmers.

I. INTRODUCTION

Agriculture is the main occupation of the bigger part of Indian population 60-70 percent of Indian population is totally depends on agriculture sector for their living. The main difficult task for farmers are information access and management for quality of data and the complication of process in precision farming. Loss grows more than 40 percent in total annually which includes more than 19.1 percent of loss due to disease caused, bacteria, virus and fungi. 10.2 percent due to insect attacks and 12.2 percent due to weeds.

Android Apps are written in the Java programming language and use Java core libraries. The Application can be developed in window as well as Android O.S. but comparatively Android is the most preferable and user friendly O.S. Hence these are the reasons for which these system was less customized In developing countries most of the farmers identifies the disease on their basis of experience, but sometime even expert farmers and plant pathologist are not able to recognize the exact disease present in the agriculture product.

This problem can be solved using mobile based experts system in which farmer only need to capture the diseased leaf. Application we are The work commence by capturing image (plant leaf) with required information such as plant information using Android Mobile Phone with camera(8MP) and through internet connectivity send to the server.

II. PROBLEM DEFINATION

Now a days agriculture crops face many problems like traits or diseases. Each year plant diseases, viruses and fungal attacks lead to crop losses up to 30percent of total production. Clearly control of plant disease depends on accurate and rapid detection and identification of the disease. Detection is the process of identifying the presence of symptoms of disease. Farmers in India have minimal access to agricultural experts, who can inspect crop for identifying disease and provide advice about disease. Delayed expert responses or advice to queries often reach farmers too late which are useless. Automatic detection of plant disease is important as it beneficial to monitor large field of crops and identifies the presence of disease symptom on the plant leaf or stem. In this project we developed Mobile app for automatically detecting plant disease through image processing technique.

III. OBJECTIVESS

The Objectives of Mango Disease Detection By Image Processing is mentioned as:

1. To detect the diseases affect on the leaves.
2. To increase the productivity of agricultural field.
3. To increase the export of crops in foreign countries.
4. To make our country India economically stable.
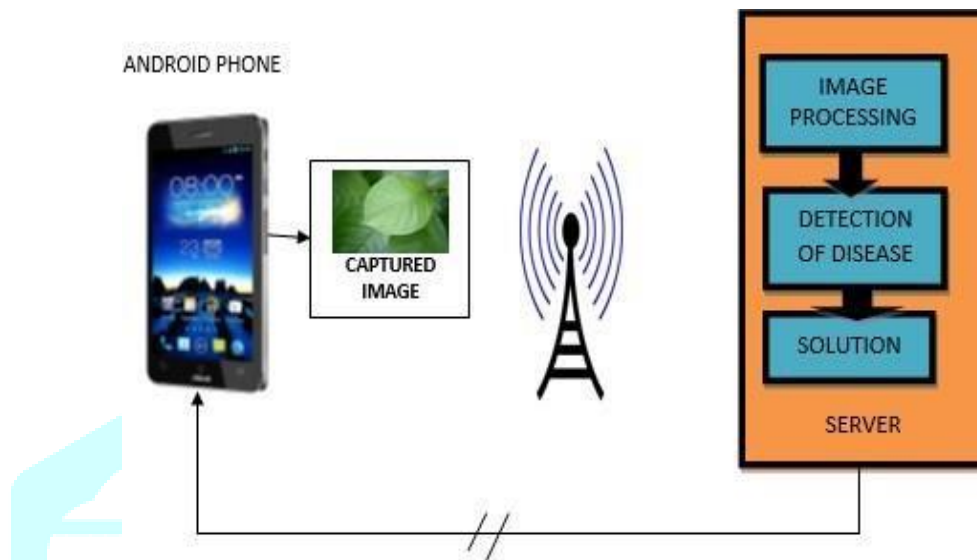
IV. SYSTEM DESIGN

Figure 1. Block Diagram of Proposed System

SMART PHONE

A smart phone is used supporting Android operating system and it should have camera clarity with minimum of 8mp because for the detection process of diseases we will require a cleared photograph to recognize the exact disease. An application needs to be installed in this smart phone supporting android which is developed in the Android Studio where Java platform is preferred.

CAPTURED IMAGE

For the detection purposed we require a good resolution photograph is required. This captured image block is the image clicked by the user of the diseased crop which needs to be forwarded to the server.

SERVER

It consist of detection processes where the output image from the smart phone will be matched with number of similar diseased images stored at the server and appropriate matching image will be selected comprising solution for the disease detected.

The kind of disease and its solution will be given in a minimum time back to the user. We will use a wireless medium to create a link between the smart phone and the server. We are using PHP (Personal Home Page) which is freely available on the internet. PHP is the scriptable language suitable for the web server. Above figure shows block diagram of the system.

In this project we want to design Android Application for the farmers. By using android phone we will captured the image of diseased leaf. This captured image is then send to the server. Server contains pictures of various diseased leaves. So, when we captured the diseased leaf image then it send to the server and server compares this image with images which was already stored in it. If captured image and images stored in the server are approximately equal then server send the feedback to the user or farmer. That means, server sends which disease is detected and also gives the solution for that detected disease.

V. WORKING OF PROPOSED SYSTEM

As agriculture is the prone occupation in India, which is also growing more and more using pesticides and other chemicals due to which the number of diseases are increasing in farming. This system will detect the disease and give its solution. We have developed an "Android App for Smart Farming " which can be used till the latest version of an- droid. We require a smart phone of minimum 8mp camera used to capture the diseased image. The image will be further send to the server where detection will take place and immediate solution will be reverted from the server to the client (mobile).

We are using image processing techniques for the detection process.

We have de- veloped this app which is been developed in Android Studio with java script .We are using WAMP as a server. WAMP is the combination of Windows, Apache, My-SQL PHP and for the connectivity of both we are using Pycharm with Python.

GUI of Proposed System
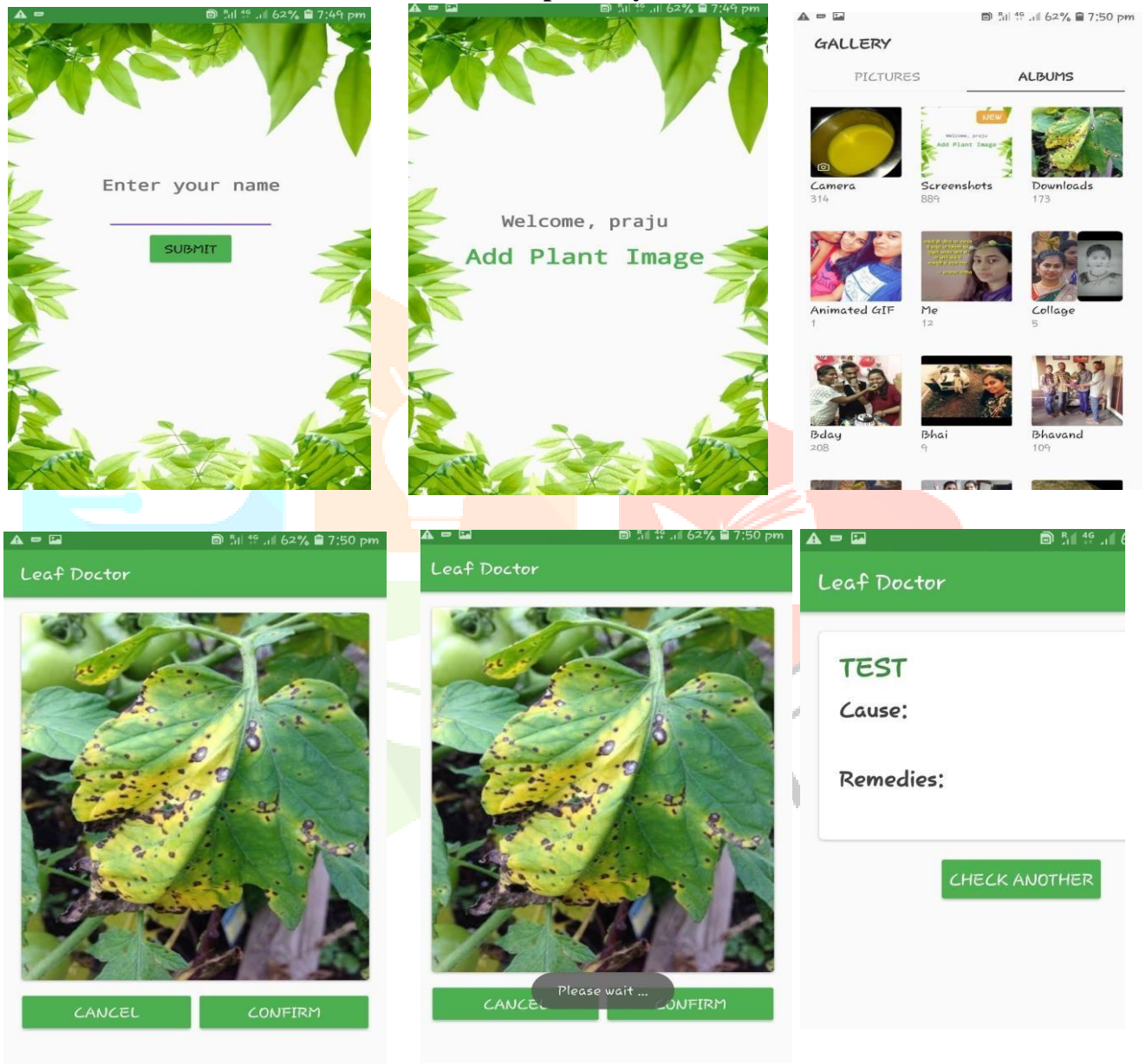
VI. ACKNOWLEDGMENT

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