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Abstract:- Now-a-days there is a wide demand for our agriculture, day by day the agriculture system is improving with effective growth and the improved yield of fruit is important. For this purpose our farmers need to deal with quality of the fruit from the time of harvest till the progress period. But all the time this manual monitoring will not give us the good result. For this reason it requires an introducing an efficient smart farming technique which helps our farmer for getting a better yield with less effort.

Pomegranate disease should be controlled in the primary stage itself otherwise it effects the economic. Here we are using image processing uses in two image databases one for training and other for testing. Then the images are classified to their respective disease on the basis of three feature namely color texture and morphology.

Keywords:- Image Processing, Texture, Morphology.

I. INTRODUCTION

➤ Pomegranate

(Punicagranatum L.), commercially important fruit for many countries and it belongs to small botanical family Punicaceae. It covered a large area and cultivated in many other countries.

The fruit is liked for its cool and juice

As India is developing Country the contribution towards agriculture plays a important role. Smart farming is authorizing the farmers with many automated tools and technologies this automatically improving our products service for betterment quality and profit. The detection and identification of fruit disease is observed by experts. In some countries, approaching experts are expensive and time consuming due to their unavailability. Automatic detection of fruit diseases is necessary and the detecting the symptoms at the initial/ early stage. So this system helps to detect the disease fruit easily. Using this system we can avoid the economical loss of farmers. Pomegranate is the one of the fruit we have taken in region of the Maharashtra state of

India. The diseases are more powerful in the cloudy environment and in the rainy season. Under favorable conditions, spots enlarge to become raised, dark brown lesions with indefinite margins that cause the fruit to crack. The 90% of the disease are the reason for reduction of yield. At the initial stage itself the precaution needs to be taken for the diseased fruits otherwise it is hard to control it in the final. Since our farmers are lagging from knowledge they are unable to identify the exact problem they are facing. So they are under loss.

II. LITERATURE SURVEY

- [1]. "Pomegranate Disease Detection": Manisha A. Bhange, Prof. H. A. Hingoliwala –For detection of fruit disease, for intensify the image, image processing is required. Here the image processing is used in two databases one for training and another for testing. Later the images are classified based on their respective diseases and are distinguished in three features namely color, texture, morphology.
- [2]. "Pomegranate plant diseases using neural network and Diagnosis": Mrunmayee Dhakate –Using portioning the features are extracted from certain regions of the image. The aim of this paper is to divide the image into elemental objects using K- clustering technique. The images are partitioned into clusters which contains majority of diseased images. The advantage of this technique is implementing large number of variables that produce higher clusters than hierarchical clustering.

III. PROPOSED METHODOLOGY

Now-a-days there is a wide demand for our agriculture, day by day the agriculture system is improving with effective growth and the improved yield of fruit is important. For this purpose our farmers need to deal with quality of the fruit from the time of harvest till the progress period. But all the time this manual monitoring will not give us the good result, which leads to the growth of unhealthy fruit and loses its demand in market.

In India the manual monitoring of farming is the traditional system and also for every time and it's very difficult to meet the agriculture scientist and get them a suggestion. Without examining the content of the soil planting a pomegranate tree leads to huge loss to farmers. During the development time farmers usually observe similar indication of disease for fruit. At the beginning itself we need to control the disease otherwise it may lead for financial loss.

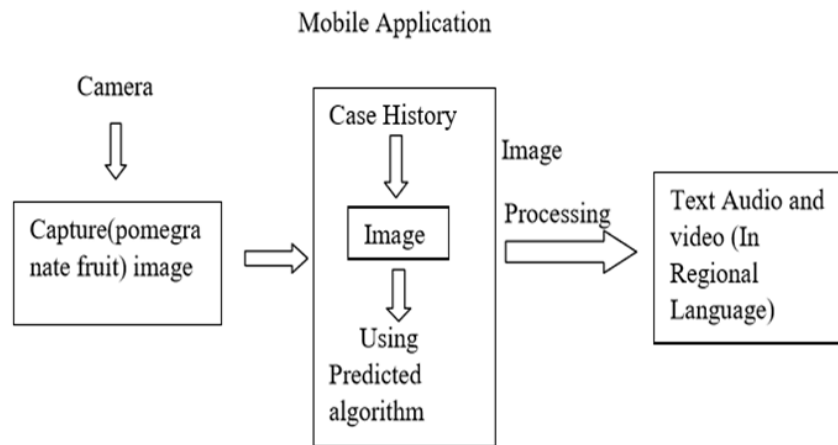


Fig 1:- Mobile Application

B. Image Enhancement

Adjusting the image is one of the simplest and interesting in image processing. Basically, the idea behind this technique is to bring out a detail. Changing, brightness & contrast etc.

C. Image Restoration

It is the area which deals with improving the look of the image. But, it is different from enhancement, which is subjective, image restoration is objective, is that restoration techniques is based on mathematical models of image.

D. Color Image Processing

It is the area that is gaining the importance because of increase in the use of digital images over internet. The digital domains include color modeling, and processing etc.

E. Wavelets and Multi-Resolution Processing

This represents images in various degrees of resolution. The data compression and pyramidal representation successively sub divide the image into smaller regions

F. Compression

It is used for reducing the required storage to save an image to transfer. Specially, in internet compress of data is necessary. Farmer friendly Android application development (Regional Language) for identify the early symptoms of diseases in pomegranate fruit. Using this application farmer need to capture and upload the Fruit of disease suspected pomegranate tree.

A. Image Acquisition

Digital image processing is the fundamental step. The image which is already in digital form and the image retrieved in the form of image. Here in this stage pre-processing, scaling etc are involved.

IV. RESULT

A. Image Acquisition



Fig 2:- Image Acquisition of Pomegranate Fruit

B. Pre Processing



Fig 3:- Pre Processing of Pomegranate Fruit

C. Segmentation



Fig 4:- Segmentation of Pomegranate Fruit

D. Detection of Healthy Fruit

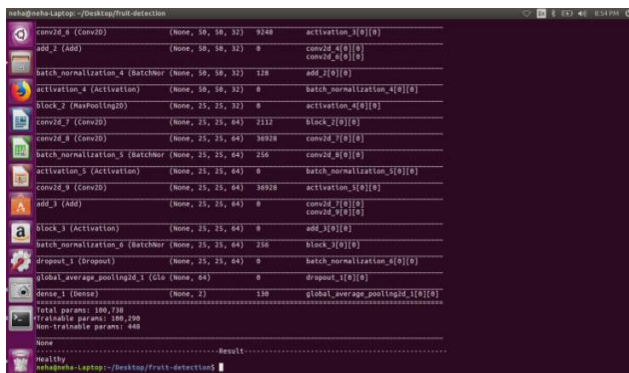


Fig 5:- Detection of Healthy Pomegranate Fruit

E. Detection of Diseased Fruit

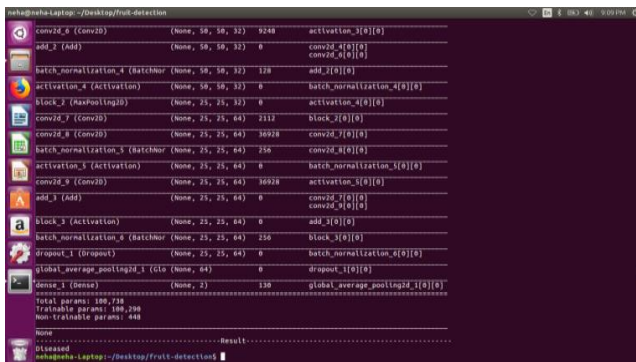


Fig 6:- Detection of Diseased Pomegranate Fruit.

V. CONCLUSION

An image processing based solution is proposed for detection of pomegranate fruit disease. If the fruit is affected with disease proper treatment is given. System consist pre-processing, segmentation, feature extraction, training and classification. The existing system providing the solution requires experts and farmers can't identify disease just by necked eyes observation. Farmers get solutions immediately. It saves time and loss of diseased fruits is prevented. The main purpose of this paper is to improve the technology, the system the fruit disease is automatically.

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