1. **Introduction**

One of the medical areas which needs mobile health technology is skin analysis to identify diseases. Around % of the population in India (840 million people) visited their general practitioner with a skin problem in today’s date, with the most common reasons being skin infection and eczema (WHO). One of the most preventable types of cancer is the skin cancer and the best ways to keep the skin healthy and cancer free is checking and examining skin once a month for suspicious moles or spots. This exam is a visual and clinical skin exam, it costs more than Rs.5000 and it needs hospital scan which is difficult for disabled people. In our paper, we propose a low-cost Smartphone based intelligent scheme that allows people for regular skin examinations. We use a Smartphone camera and an intelligent learning algorithm to scan skin images.

* 1. **Purpose**

Skin disease is the most common disease in the world. The diagnosis of the skin disease requires a high level of expertise and accuracy for dermatologist, so computer aided skin disease diagnosis model is proposed to provide more objective and reliable solution. Much research was done to help detect skin diseases like skin cancer and tumour skin. But the accurate recognition of the disease is extremely challenging due to the following reasons: low contrast between lesions and skin, visual similarity between Disease and non-Disease area, etc. This paper aims to detect skin disease from the skin image and to analyse this image by applying filter to remove noise or unwanted things, convert the image to grey to help in the processing and get the useful information. This help to give evidence for any type of skin disease and illustrate emergency orientation. Analysis result of this study can support doctor to help in initial diagnoses and to know the type of disease. That is compatible with skin and to avoid side effects.

1. **Problem Definition and Scope**

**2.1 Problem Statement**

The patient provides an image of the infected area of the skin as an input to the prototype. Image processing techniques are performed on this image and the detected disease is displayed at the output.

**2.2. Goal & Objectives**

Our objective of the project is to detect the type of skin disease easily with accuracy and recommend the best. First stage of the image the skin disease is subject to various kinds of pre-processing techniques followed by feature extraction. Then the second stage involves it uses the Machine learning algorithms to identify diseases based on the analysing and observance of the skin. The proposed system is highly beneficial in rural areas where access to dermatologists is limited. For this proposed system, we use PyCharm based python script for experimental results.

**2.3. Scope**

Skin is the largest organ in human body, which is important to cover human bone, and to protect human from any harm, fight the bacteria and other kind of diseases, and may have numerous potential abnormalities. Several factors may affect the skin directly or indirectly and cause diseases which can be treated with specific medicine and others require doctor’s consultation. This paper will help people to know what the required procedures for treatment of skin disease are by analysing the image and extract useful information that help to show the infected skin area and classification of image based on the kind of skin disease.

**2.4. Software Context**

Python will be used for development which is free of cost for development. Anaconda & Jupiter Notebook is free for development. We use DJango MVC Framework for development.

1. **External Interface Requirements**

**3.1 User Interface**

We will use a simple application to perform all the operation. User will capture the picture of the infected area with the help of our application.

**3.2 Hardware Interface**

The application can be used on any personal smartphone or tablet. Our model doesn’t require any special hardware to run.

1. **Functional Requirements**

Input Data

Pre-Processing

Training & Testing

Prediction

Yes

No

**4.1 Input Data**

We will collect data with various attributes like gender, age etc from top dataset sources like Kagel or UCI

**4.2 Data pre processing**

In data pre processing we will fill the blank cells, if any wrong data is present then will correct them, will drop the unnecessary columns from the data.

**4.3 Data splitting**

Now we will split the data into two parts that is training data and testing data. From the whole data 80% data will be used for training the model and 20% of data will be used for testing the model.

**4.4 Prediction**

Now we will use various algorithms like KNN, RF, to predict the outcome.

**5.** **Non-Functional Requirements**

1. Correctness -> Application predict disease with utmost accuracy
2. Reusability -> Yes
   1. The system shall allow the users to access the system from the phone using android application. The system uses an android application as an interface. Since all users are familiar with the general usage of mobile app, no special training is required. The system is user friendly which makes the system easy
3. Reliability -> Applied
   1. Only authorised doctor’s details should be displayed to the user.
4. Usability -> the interface is easy to learn and navigate
5. Managebility -> The administrators can monitor the system and manage it easily

**6.** **Design Constraints**

Our software is constructed over Anaconda, Jupiter Notebook, Android Studio and vs code and we used some optimal algorithms for their predictions.

**7. Primary Schedule Budget**

1. Schedular -> 1 Group [4 team Member]
2. Budget -> Rs. 1Lakhs