**Software Requirement Specification**

**Introduction**

Disease Prediction using Machine Learning is the**system that is used to predict the diseases from the symptoms which are given by the patients or any user**. The system processes the symptoms provided by the user as input and gives the output as the probability of the disease.

**Purpose**

Lot of analysis over existing systems in the health care industry considered only one disease at a time. For example, one system is used to analyse diabetes, another is used to analyse diabetes retinopathy, and another system is used to predict heart disease. Maximum systems focus on a particular disease. When an organization wants to analyse their patient’s health reports then they have to deploy many models. The approach in the existing system is useful to**analyse only particular diseases. In multiple diseases prediction system a user can analyse more than one disease on a single website. The user doesn’t need to traverse different places in order to predict whether he/she has a particular disease or not. In multiple diseases prediction system, the user needs to select the name of the particular disease**, enter its parameters and just click on submit. The corresponding machine learning model will be invoked and it would predict the output and display it on the screen.

**Problem Statement**

Many of the existing machine learning models for health care analysis are concentrating on one disease per analysis. For example first is for liver analysis, one for cancer analysis, one for lung diseases like that. If a user wants to predict more than one disease, he/she has to go through different sites. There is no common system where one analysis can perform more than one disease prediction. Some of the models have lower accuracy which can seriously affect patients’ health. When an organization wants to analyse their patient’s health reports, they have to deploy many models which in turn increases the cost as well as time Some of the existing systems consider very few parameters which can yield false results.

**Scope**

• **We have experimented on three diseases that is heart disease , Parkinsons and Diabetes.**

• **Firstly,we have collected the dataset for all the three diseases then,that data set is pre-processed where we check for outliers missing-values and updations are done accordingly.**

• **After the pre-processing the dataset is splitted into training and testing part.**

• **Next is on the training dataset we have applied suitable algorithms like support vector machine and logistic Regression,which is used for the classification.**

• **The data is then tested and deployed using anaconda navigator as a web app.**

**Functional Requirement**

• The system allows the patient to predict the disease

• The user adds the input for the particular disease and based on the trained model of the user input the output will be displayed .

**Non-Functional Requirement**

• The website will provide range of the values during the prediction of the disease.

• The website should be reliable and consistent.

**Conclusion**

The main objective of this project was to create a system that would predict more than one disease and do so with high accuracy. Because of this project the user doesn’t need to traverse different websites which saves time as well. Diseases if predicted early can increase your life expectancy as well as save you from financial troubles. For this purpose, we have used various machine learning algorithms like Random SVM, Logistic Regression, and K nearest neighbor (KNN) to achieve maximum accuracy.