



# MULTIPLE DISEASE'S PREDICTION SYSTEM



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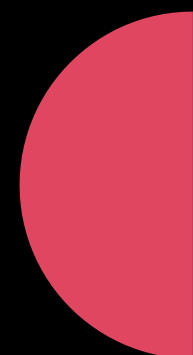
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# Introduction

**There are many models available which focuses on only one disease. If user wants to check for multiple disease he/she has to go through many websites.**

**Multiple Disease Prediction System is a machine learning model which can be used to predict multiple disease such as heart disease , diabetes and Parkinson's Diseases.**



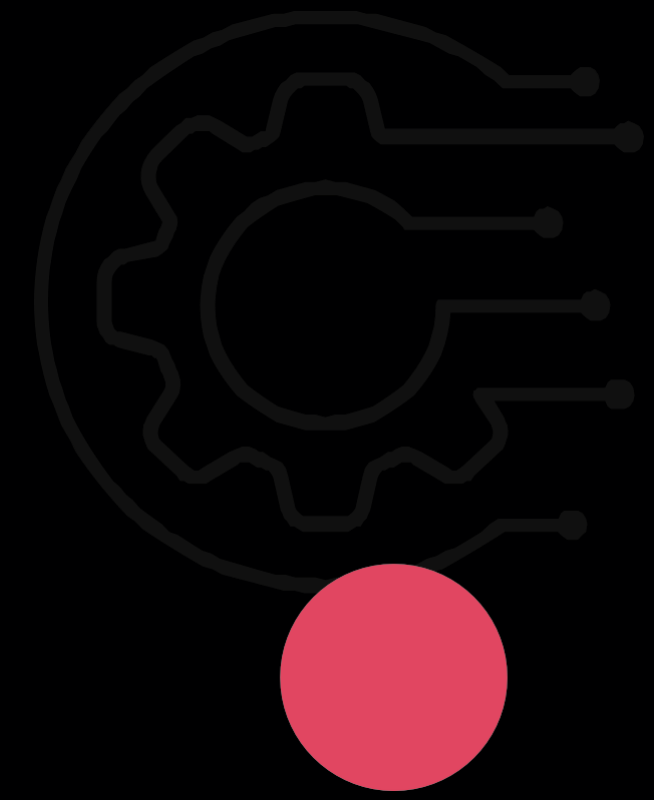


# Literature Review

- **There are many research papers available over the internet.**

## Diabetes Prediction

- Diabetes is one of the most dangerous disease in the, world it can cause many varieties of disorder which includes blindness etc.
- Aim of those papers were to build a model which can detect diabetes with accurate results.
- They used various algorithm such as DT, SVM ,LR etc.





## Heart disease Prediction

- Since Heart plays an important role in all living organisms.
- So the aim of those papers was that diagnosis and prediction of heart disease should be perfect because it is very crucial.
- They used various algorithms for this model such as KNN , SVM etc.

# Methodology

This system can predict three diseases namely, Diabetes , Heart Diseases and Parkinson Disease .

Dataset for each model was taken from kaggle.

First three individual models were created for prediction.

# Diabetes

```
jupyter Multiple_Disease_Prediction-Diabetes Last Checkpoint: 11/14/2023 (autosaved)

File Edit View Insert Cell Kernel Widgets Help

[Icons] [Run] [Code]

2
3
4 import pandas as pd
5 import numpy as np
6 from sklearn.preprocessing import StandardScaler # standardise the data to a common range
7 from sklearn.model_selection import train_test_split
8 from sklearn import svm
9 from sklearn.metrics import accuracy_score

In [29]: 1 # Data Collection and analysis
          2
          3 diabetes_dataset = pd.read_csv('diabetes.csv') # PIMA dataset
```

# Heart Problem

```
In [1]: 1 import numpy as np
        2 import pandas as pd
        3 from sklearn.model_selection import train_test_split
        4 from sklearn.linear_model import LogisticRegression
        5 from sklearn.metrics import accuracy_score

In [2]: 1 heart_data = pd.read_csv('heart_disease_data.csv')
```

**and similarly for Parkinson Disease**

## Two algorithms were used :-

- **Support Vector Machine (Diabetes & Parkinson's)**
- **Logistic Regression (Heart Disease)**

```
In [44]: 1 X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2, stratify=Y, random_state=2)

In [45]: 1 #Training the model (SVM)
          2 classifier = svm.SVC(kernel='linear')

In [46]: 1 classifier.fit(X_train, Y_train)
```

```
1 X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2, stratify=Y, random_state=2)

1 model = LogisticRegression()

1 model.fit(X_train, Y_train)
```



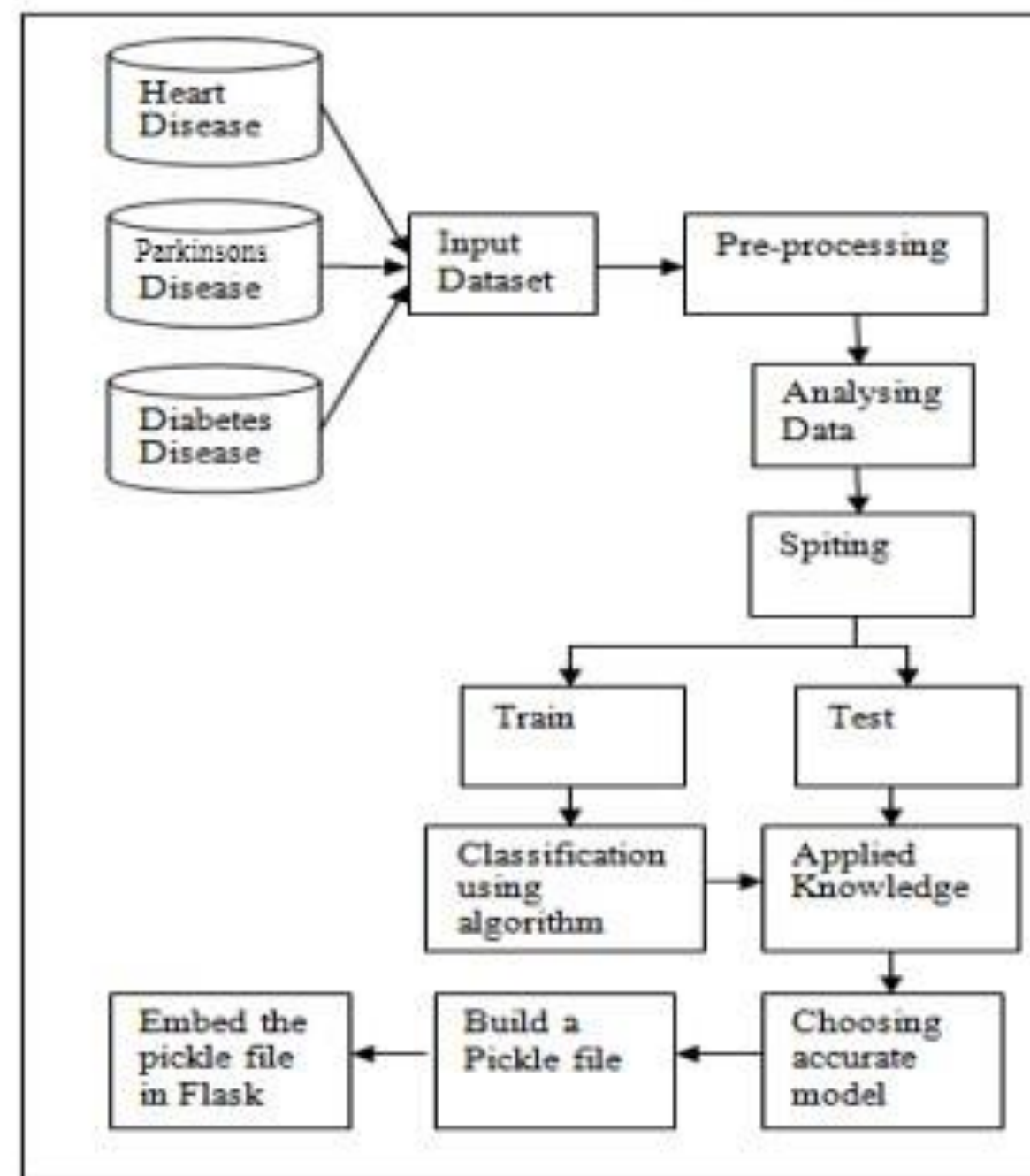


Fig. 1 Block Diagram

**To give frontend and to combine all the three models  
Streamlit was used.**

**Firstly all the three models were loaded using pickle library.**

**Then Streamlit library was used .**

# Result

The final result was a website which can predict multiple diseases.

Multiple Disease Prediction System

Diabetes Prediction

Heart Disease Prediction

Parkinsons Prediction

## Diabetes Prediction

Number of Pregnancies

Glucose Level

Blood Pressure value

Skin Thickness value

Insulin Level

BMI value

Diabetes Pedigree Function value

Age of the person

Diabetes Test Result

Multiple Disease  
Prediction System

Diabetes Prediction

Heart Disease  
Prediction

Parkinsons Prediction

# Heart Disease Prediction

Age

Sex

Chest Pain types

Resting Blood Pressure

Serum Cholestoral in mg/dl

Fasting Blood Sugar > 120 mg/dl

Resting Electrocardiographic results

Maximum Heart Rate achieved

Exercise Induced Angina

ST depression induced by exercise

Slope of the peak exercise ST segment

Major vessels colored by flourosopy

thal: 0 = normal; 1 = fixed defect; 2 =  
reversable defect

Heart Disease Test Result

×

Multiple Disease Prediction System

Diabetes Prediction

Heart Disease Prediction

Parkinsons Prediction

Parkinson Disease Prediction

MDVP (Hz)

MDVP (Hz)

MDVP (Hz)

MDVP (%)

MDVP (Abs)

MDVP

MDVP

Jitter

MDVP

MDVP (dB)

Shimmer

Shimmer

MDVP

Shimmer

NHR

HNR

RPDE

DFA

spread1

spread2

D2

PPE

Parkinson's Test Result

THANK YOU

