Disease Prediction using Machine Learning

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ABSTRACT

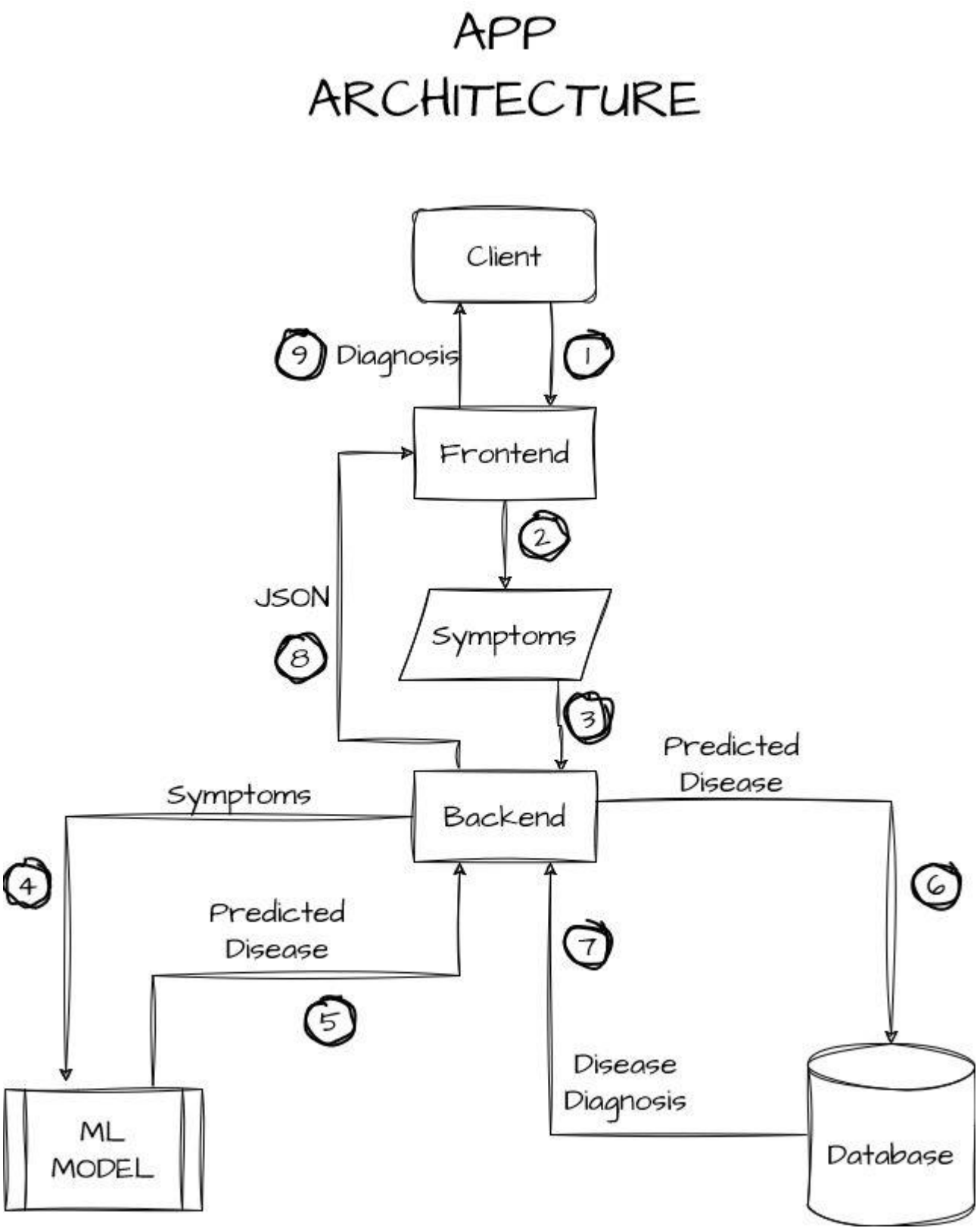
- The main objective of this project is to predict the disease of the patient using the symptoms of the patient.
- The symptoms of the patient are taken as input and the disease is predicted using the machine learning model.
- The machine learning algorithm used in this project is HistGradientClassifier.
- The dataset used in this project is taken from Kaggle.
- The dataset is divided into training and testing dataset.
- The training dataset is used to train the machine learning model and the testing dataset is used to test the model.
- The accuracy of the model is calculated, and the parameters of the model are tuned to increase the accuracy of the model.
- The model is deployed using the ReactJS and NodeJS.

SYSTEM DESIGN

STEPS

- Data Collection
- Data Pre-processing and Cleaning
- Feature Extraction and Selection
- Model Training
- Model Testing
- Model Evaluation and Tuning
- Model Integration and Deployment with Web Application using ReactJS and NodeJS

SYSTEM ARCHITECTURE



IMPLEMENTATION

The project is implemented using the following steps:

1. Importing the libraries
2. Importing the dataset
3. Data Pre-processing
4. Training the model
5. Testing the model
6. Calculating the accuracy of the model
7. Predicting the disease of the patient

ML Libraries:

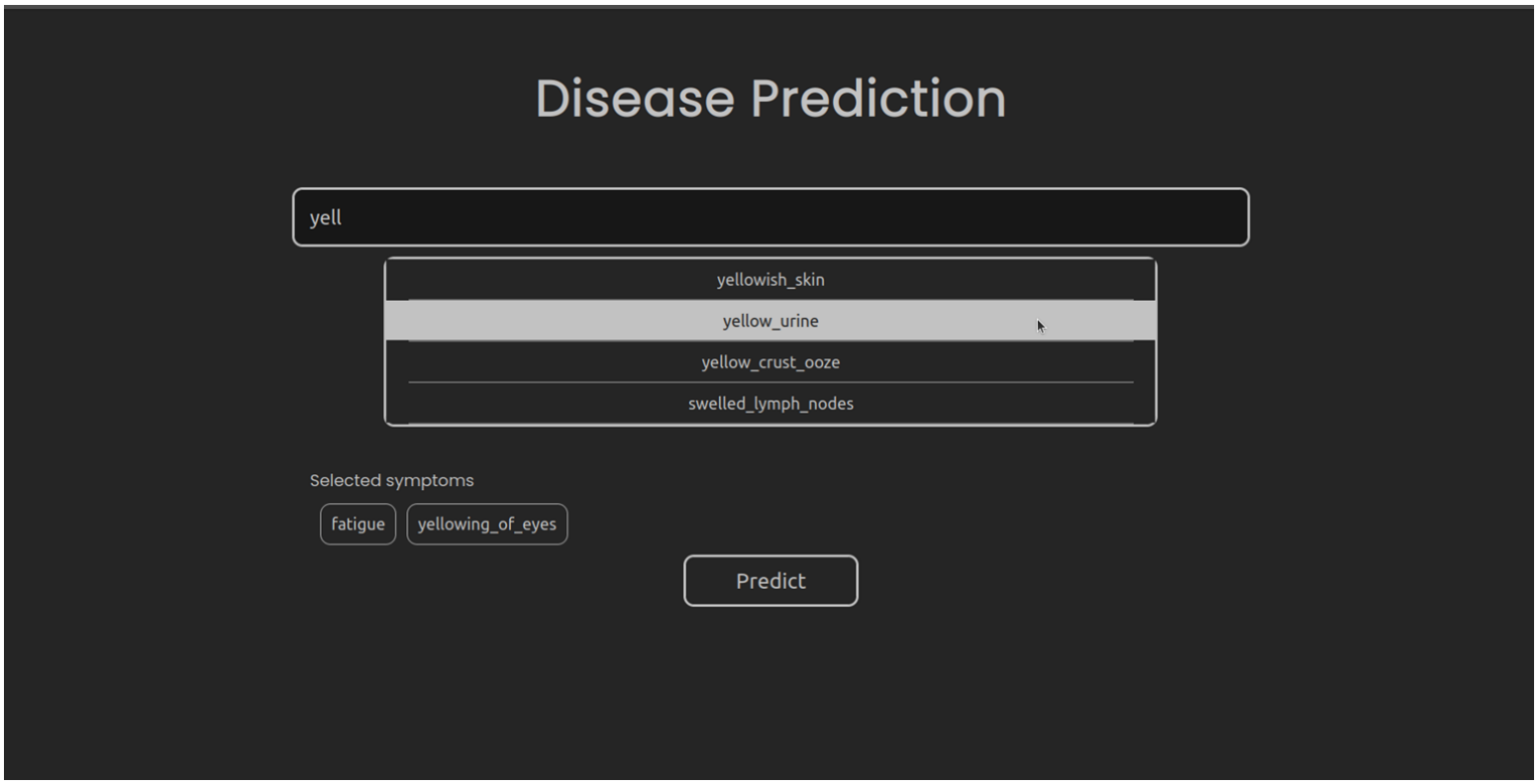
1. Pandas
2. Sklearn

Web Development Libraries:

1. ReactJS
2. NodeJS
3. ExpressJS

SCREENSHOTS

Home Page



Result Page

Predicted Disease

Hepatitis C

Inflammation of the liver due to the hepatitis C virus (HCV), which is usually spread via blood transfusion (rare), hemodialysis, and needle sticks. The damage hepatitis C does to the liver can lead to cirrhosis and its complications as well as cancer.

Treatment

- Antiviral medications: Antiviral medications are the primary treatment for hepatitis C. Direct-acting antivirals (DAAs) are the most commonly prescribed medications, and they work by targeting the virus to prevent it from replicating. The specific medication prescribed will depend on the genotype of the virus and the severity of the infection.
- Interferon injections: Interferon injections may be prescribed in combination with antiviral medications for certain types of hepatitis C infections. Interferon works by boosting the immune system to help fight off the virus.
- Liver transplant: In cases where hepatitis C has led to severe liver damage, a liver transplant may be necessary.

Medication

- Direct-acting antivirals (DAAs): DAAs are a class of antiviral medications that specifically target the hepatitis C virus. Commonly prescribed DAAs include sofosbuvir, ledipasvir, and ribavirin.
- Interferon injections: Interferon injections, such as peginterferon alfa-2a and peginterferon alfa-2b, may be prescribed in combination with DAAs for certain types of hepatitis C infections.
- Ribavirin: Ribavirin is an oral antiviral medication that may be prescribed in combination with DAAs for certain types of hepatitis C infections.

Precautions

- Consult nearest hospital
- vaccination
- eat healthy
- medication

Predict Again

GITHUB REPOSITORY

https://github.com/pavanmanishd/Disease-Prediction-Machine-Learning

RESULTS

- The initial accuracy of the model is 97%.
- The parameters of the model are tuned to increase the accuracy of the model.
- The accuracy of the model after tuning the parameters is 99%.
- The tuned parameters are : max_iter, learning_rate, max_leaf_nodes.

CONCLUSION

The main objective of this project is to predict the disease of the patient using the symptoms of the patient. The symptoms of the patient are taken as input and the disease is predicted using the machine learning model.

CONTRIBUTORS

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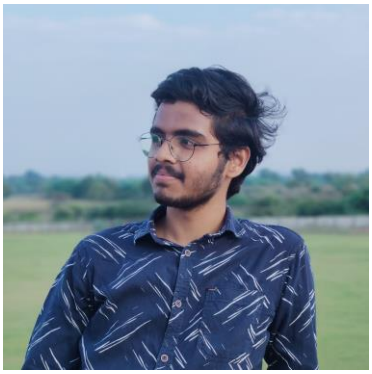

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