

Project Design Phase-II

Data Flow Diagram & User Stories

Date	03 November 2023
Team ID	592988
Project Name	Disease Prediction Using Machine Learning
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Data Flow Diagram for Disease Prediction Using Machine Learning:

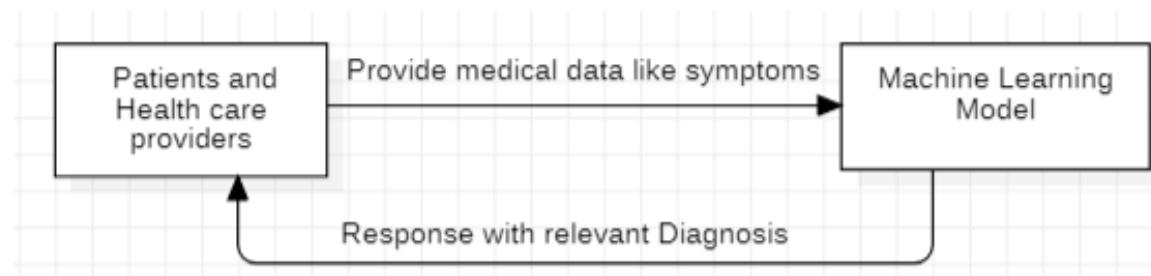
1. **Data Collection:** Data is gathered from the external entities such as patients and health care providers. This data might be symptoms of the patients or medical records and may be lab results.
2. **Data Processing:** Here, the data is analyzed before being forwarded to the disease prediction phase.
3. **Disease Prediction:** The processed data will be used for the prediction of the disease of the user through the machine learning model.
4. **Result:** The user will receive the result of the prediction from the model and the respective proposed treatment to the user.

Flow of the Model:

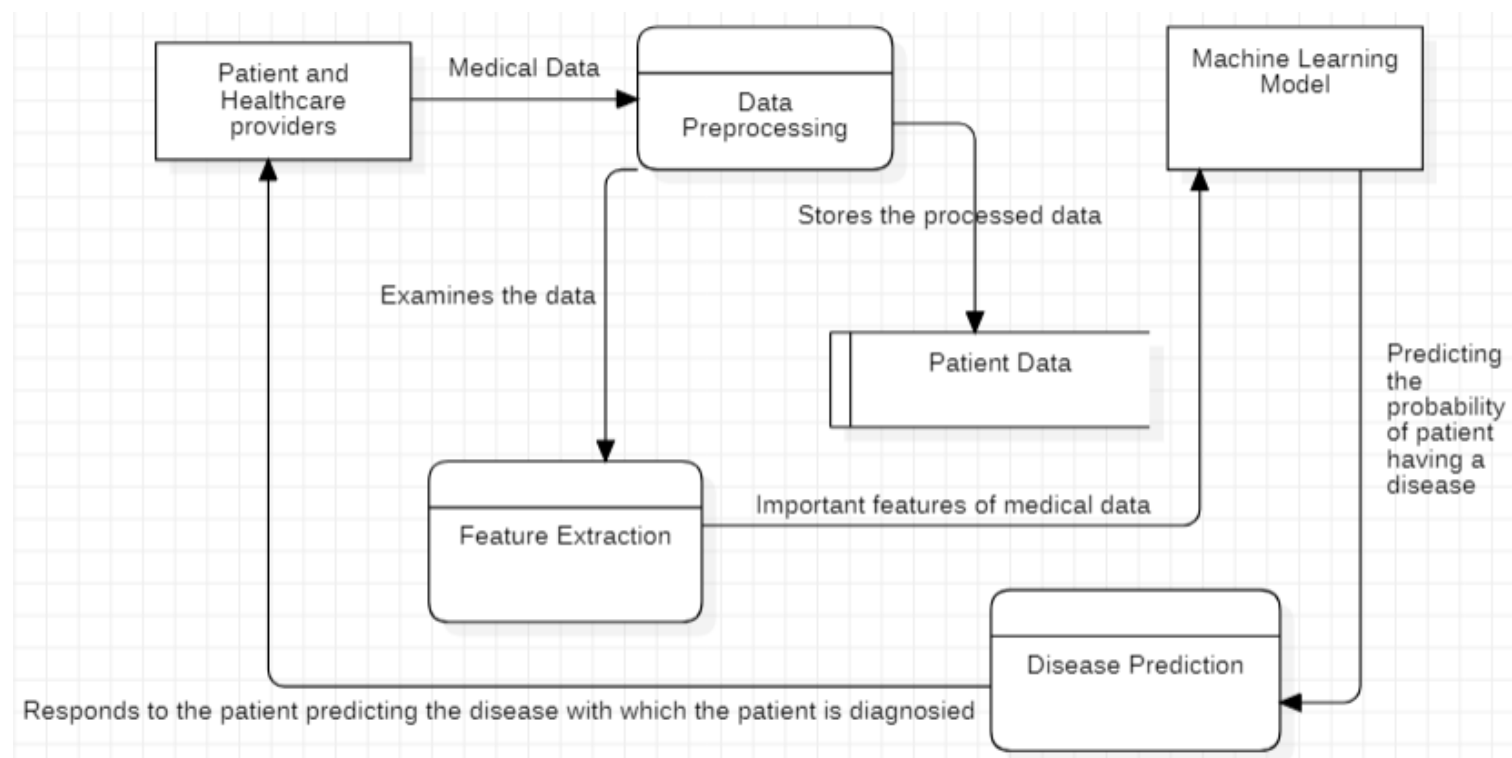
The process of structured data flow is employed by the Disease Prediction Model. Data is first provided by outside sources such as "Patients" and "Healthcare Providers," which is gathered and kept in the "Data Repository." Data is preprocessed, features are extracted, and the Machine Learning Model analyzes the results. To increase the predicted accuracy of this model, additional training is done using historical data of the cases. The model shares its output, which is a prediction, with the people making the request. This procedure makes sure that data is properly analyzed and utilized to forecast diseases in a way that improves patient care and decision-making.

Data Flow Diagram:

Level 0:



Level 1:



User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Patient	Disease prediction	USN-1	As a patient, I want to be able to use a machine learning model to detect diseases based on my symptoms, so that I can get early diagnosis and treatment.	The machine learning model must achieve 90% accuracy in disease detection, be user-friendly for patients without technical background, and integrate into existing healthcare systems for efficient medical care.	High	Sprint-1
Healthcare Provider	Disease prediction	USN-2	The healthcare provider aims to utilize a machine learning model for more accurate and efficient disease diagnosis, thereby enhancing patient care.	The machine learning model should integrate with the EHR system, provide a list of possible diagnoses based on a patient's symptoms, medical history, and data, and provide information about the probability of each diagnosis, enabling more informed patient care decisions.	Medium	Sprint-1
Researcher	Disease prediction	USN-3	The researcher aims to train and evaluate machine learning models for disease detection, thereby developing improved methods for disease diagnosis.	The system should offer a platform for training and evaluating machine learning models on diverse disease datasets, provide metrics like accuracy, precision, recall, and F1-score.	High	Sprint-1
Healthcare System Administrator	Disease prediction	USN-4	As a healthcare system administrator, I aim to enhance patient care quality by deploying and managing machine learning models for disease detection.	The system should enable machine learning model deployment to production servers, monitor their performance, identify issues, and update them with new data and training.	Medium	Sprint-1
Public Health Official	Disease prediction for taking preventive steps	USN-5	As a public health official, I aim to utilize machine learning models to identify and monitor disease outbreaks, thereby preventing their spread.	The system must gather data from various sources, identify patterns, and generate alerts for public health officials to monitor and respond to disease outbreaks.	High	Sprint-2

Pharmaceutical company	Disease prediction	USN-6	The pharmaceutical company plans to utilize machine learning models to identify new drug targets and develop new treatments for disease, thereby improving patient lives.	The system must analyze large biological datasets to identify drug targets, generate new drug candidates for efficacy and safety, and predict clinical performance to make informed decisions about further drug development.	Medium	Sprint-2
Insurance Company	Disease prediction	USN-7	The insurance company aims to utilize machine learning models to predict disease risk in policyholders, thereby offering personalized and affordable insurance plans.	The system must predict disease risk with 80% accuracy, consider factors like age, gender, medical history, and lifestyle habits, and generate personalized risk assessments for policyholders.	Medium	Sprint-1
Medical Device Manufacturer	Disease prediction	USN-8	The manufacturer aims to utilize machine learning models to create advanced medical devices capable of detecting diseases earlier and more accurately, enabling timely patient treatment.	The system must develop medical devices with a 95% disease detection accuracy, be easy to use, affordable, safe, and effective for patients.	High	Sprint-1