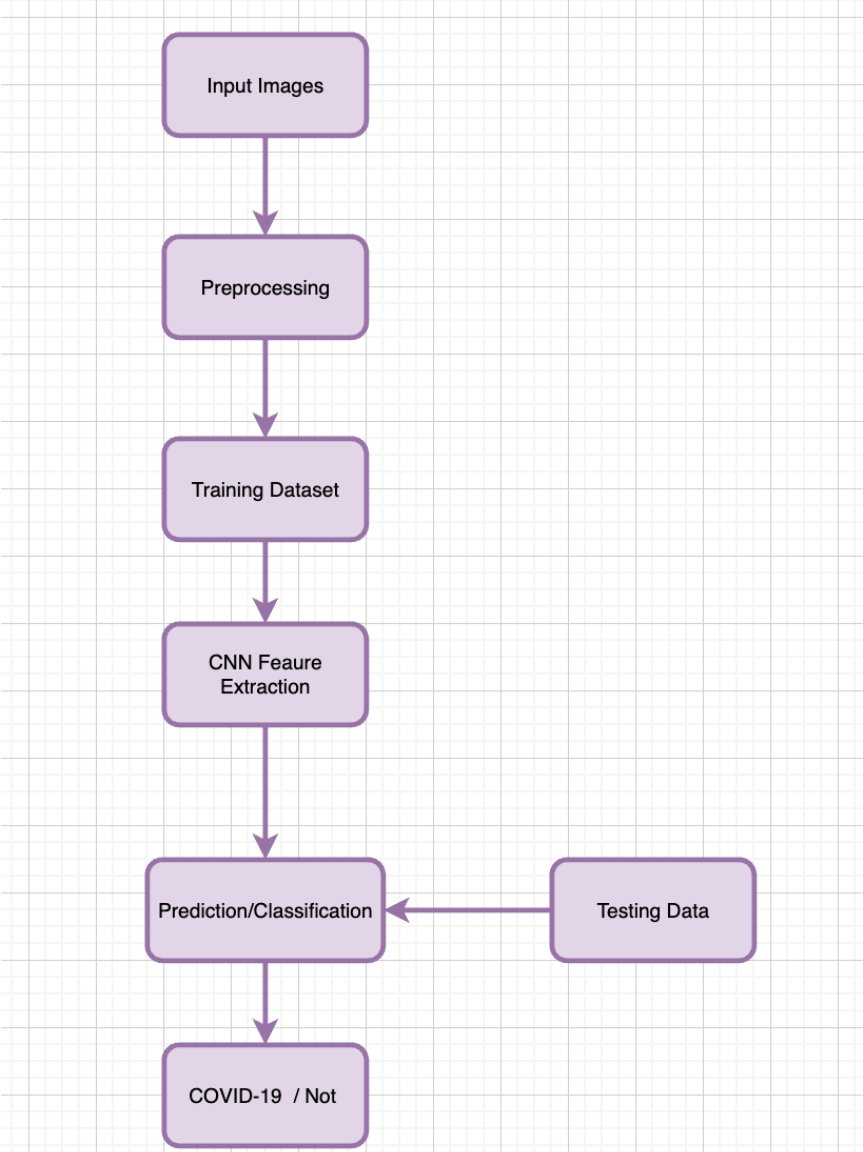
Project Design Phase-II

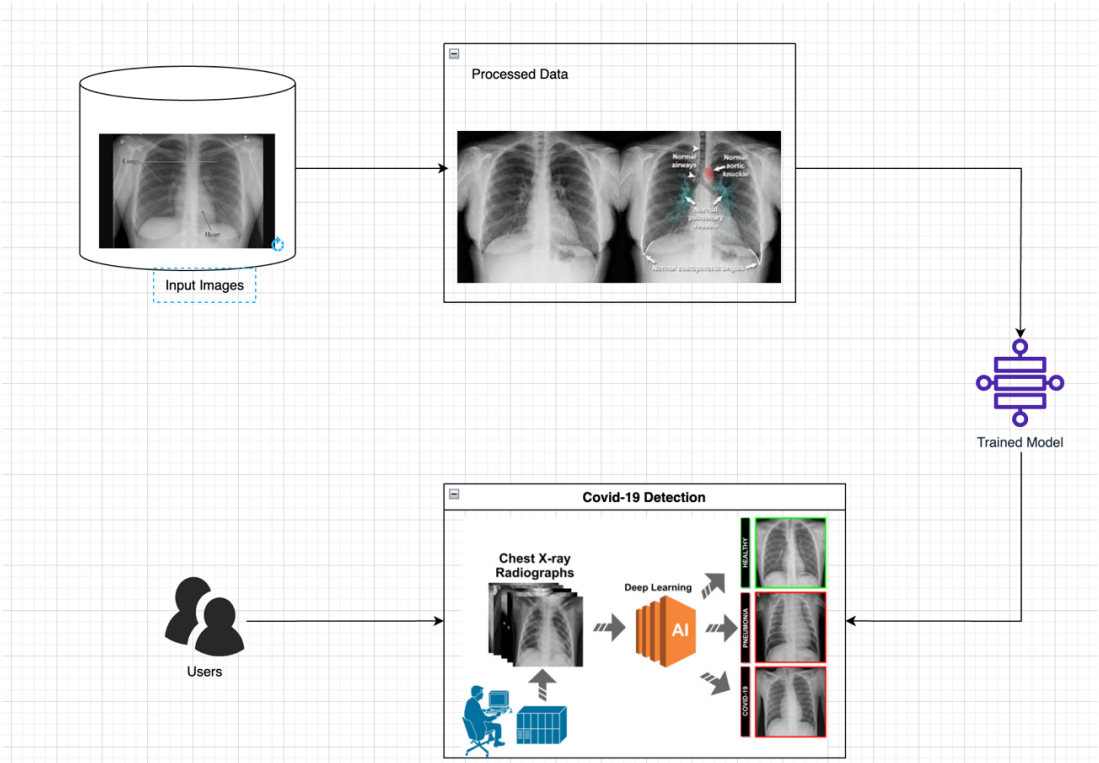
Data Flow Diagram & User Stories

Date	22nd October 2023
Team ID	Team - 592660
Project Name	***Detecting COVID-19 From Chest X-Rays Using Deep Learning Techniques***

Data Flow Diagram :

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.


Input Images
Preprocessing
Training Dataset
CNN Feaure Extraction
Prediction/Classification
Testing Data
COVID-19 / Not


Input Images
Processed Data
Trained Model
Users
Covid-19 Detection
Chest X-ray Radiographs
Deep Learning
AI
HEALTHY
PNEUMONIA
COVID-19

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Data Scientists and Research scientists	Project Setup	USN-1	Set Up Development Environment	Create a development environment with the necessary tools and frameworks for the COVID-19 detection project.	High	Sprint 1
Machine learning engineers and IT professionals	Infrastructure	USN-2	Infrastructure Planning	Plan the infrastructure for data storage, model training, and web interface deployment	Medium	Sprint 1
Domain experts and Business analysts	Data Collection	USN-3	Gather Chest X-Ray Images	Gather a diverse dataset of chest X-rays containing COVID-19, pneumonia, bronchitis, and normal cases.	High	Sprint 2
Data Scientists and Machine Learning Engineers	Data Preprocessing	USN-4	Preprocess Chest X-Ray Dataset	Resize chest X-ray images to a consistent size. Normalize pixel values to a standard range.	High	Sprint 2
Data Scientists and Domain experts	Model Development	USN-5	Explore Deep Learning Architectures	Developing a deep learning model using CNNs to accurately detect COVID-19 from chest X-rays.	High	Sprint 3
Machine Learning Engineers and Researchers	Model Training	USN-6	Model Evaluation	Assess the model's performance using evaluation metrics. Ensure the model effectively distinguishes COVID-19 cases from other respiratory conditions.	High	Sprint 4
Data Scientists and IT professionals	Model Deployment & Integration	USN-7	Deploy Model as API	Deploy the trained deep learning model as an API or web service. Create a user-friendly web interface for uploading chest X-ray images.	Medium	Sprint 5
Researchers and Developers	Model Testing	USN-8	Conduct Thorough Testing	Tested the model on a separate dataset of chest Xrays to evaluate its performance and accuracy	Medium	Sprint 6