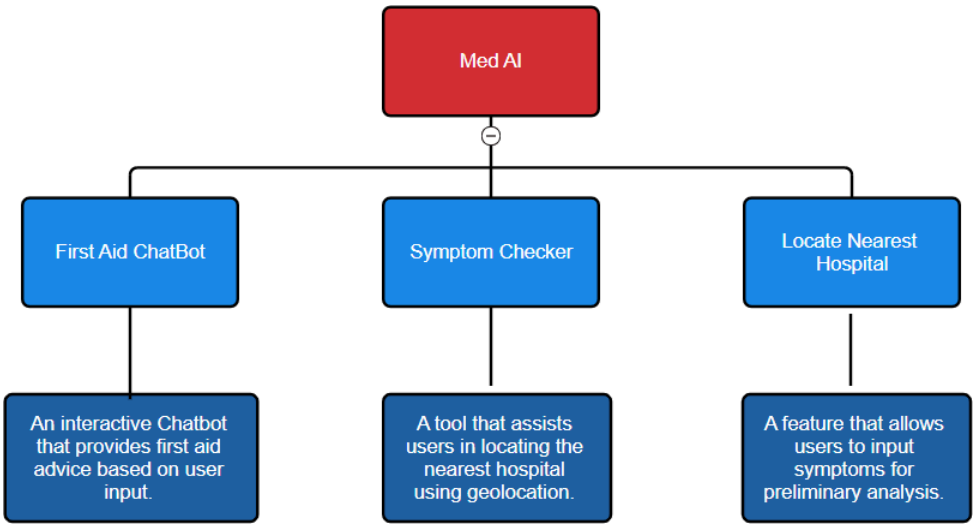
Project Report

MED-AI

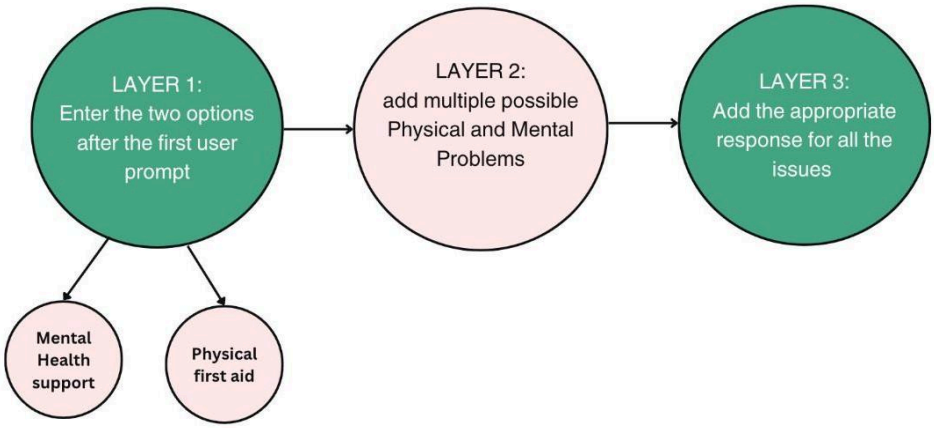
Methodology

Users can have a chat with the Med-Ai chatbot to get to know the apt first-aid treatment for their injury and additionally, they can also input their symptoms and pin codes, triggering API calls that fetch relevant data for analysis. The following flowchart illustrates the interaction process:



1. Chatbot-:

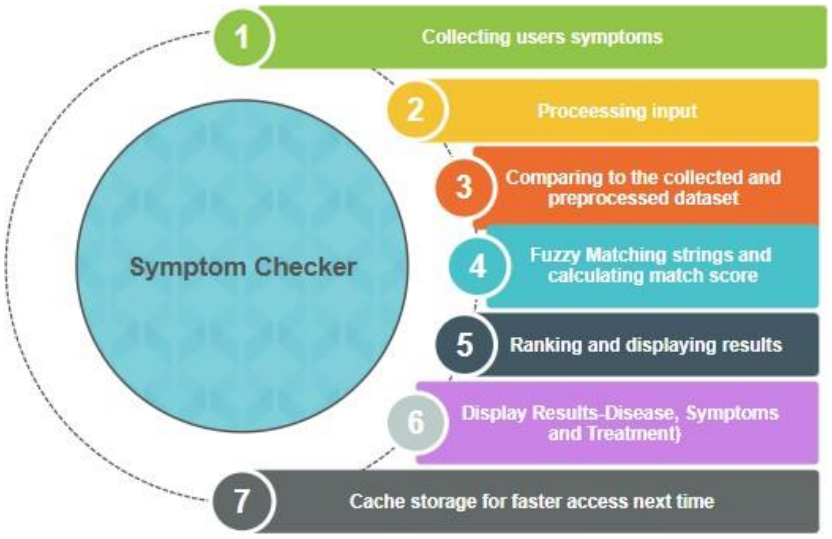
   The chatbot uses WatsonX IBM API which helps the chatbot in holding complex conversations with the user. It is configured to respond to user queries about first aid procedures, offering specific instructions depending on the type of injury reported (e.g., cuts, burns). While also providing Mental Health support if needed.



2. Hospital-finder: -

   The hospital finder combines HTML and Streamlit to display the two nearest hospitals based on geolocation. Using OpenCage to convert pin codes to coordinates, and Overpass API to locate hospitals, it calculates the distance using geopy's geodesic function.

3. Symptom-checker.:



2. Tools

Waxston api: It is an advanced AI platform used to assist in building intelligent systems.This API can enhance the chatbot's ability to engage users effectively and provide accurate first aid instructions quickly.

Location finder:

OpenCage API
Function: Geocoding (converts addresses to coordinates and vice versa). The api key has a global coverage and supports wide ranges of data formats like JSON and XML

Overpass API
Function: Query OpenStreetMap (OSM) data for geographic features. Find nearby hospitals, clinics, or pharmacies based on geographic location. It supports customizable queries and has real time data from OSM

Symptom Checker:

a) Dataset Collection:

The Data's regarding disease, symptoms and treatments are carefully collected from medically recognized and approved websites like the National Institutes of Health, National Library of Medicine, WHO tools and toolkits. The data was carefully verified and compiled. The dataset included around 50 rows of diseases and 5 columns for each disease as listed below

- **Diseases:** The name of disease
- **Description:** Brief outline about disease and its nature
- **Symptoms**: A set of common symptoms associated with the disease
- **Symptom Descriptions**: Text descriptions of symptoms to help users understand them better
- **Treatment**: Descriptions of treatments for each disease.

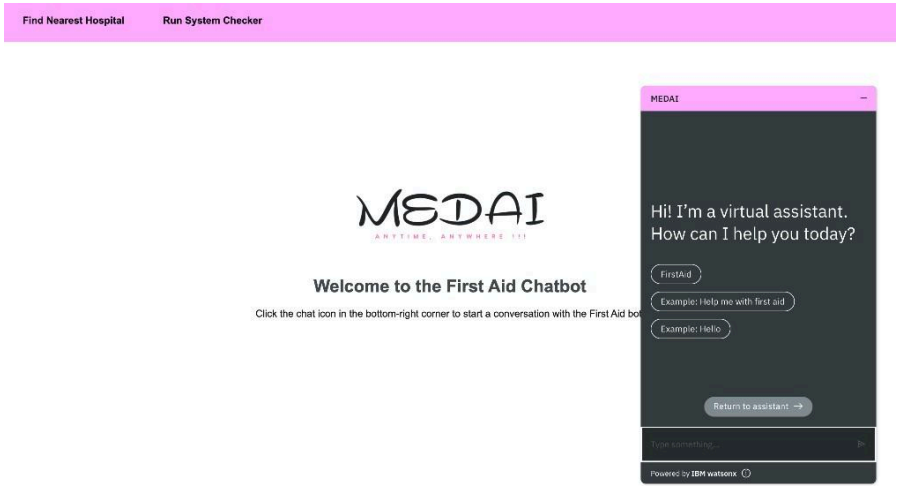
Disease	Description	Symptoms	Symptom Descriptions	Treatment
Flu	A viral infection causing fever, body aches, and fatigue.	fever, cough, body ache, fatigue	{'fever': 'A rise in body temperature, often a sign of infection.', 'cough': 'A reflex action to clear the airways of mucus or irritants.', 'body ache': 'Generalized pain throughout the body.', 'fatigue': 'A feeling of extreme tiredness and low energy.'}	Rest, fluids, and over-the-counter fever reducers.
Common Cold	A mild viral infection of the nose and throat.	sneezing, runny nose, sore throat, cough	{'sneezing': 'A sudden involuntary expulsion of air from the nose and mouth.', 'runny nose': 'Excess mucus drainage from the nose.', 'sore throat': 'Pain or irritation in the throat.', 'cough': 'A reflex action to	Rest, hydration, and throat lozenges.
COVID-19	A contagious viral disease caused by the coronavirus.	fever, cough, loss of taste, shortness of breath	{'fever': 'Elevated body temperature indicating possible infection.', 'cough': 'Persistent cough that may produce mucus.', 'loss of taste': 'Inability to taste food as usual.', 'shortness of breath': 'Difficulty breathing or	Isolation, rest, hydration, and medical attention if severe.

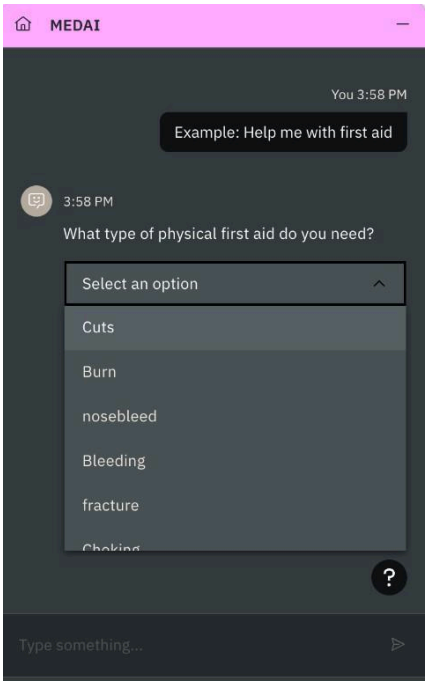
b) Fuzzy libaray:

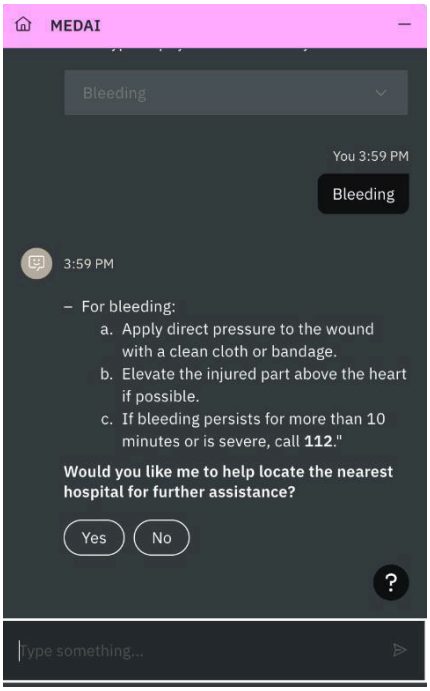
The scikit-fuzzy library in python is a robust toolkit that provides a collection of independently developed fuzzy logic algorithms, aiming to make scientific Python a viable alternative to closed-source options1.

c) Front end user Interface using streamlit

Streamlit is a python library commonly used to deploy python files with interactive user interface that offer an engaging experience to the user.

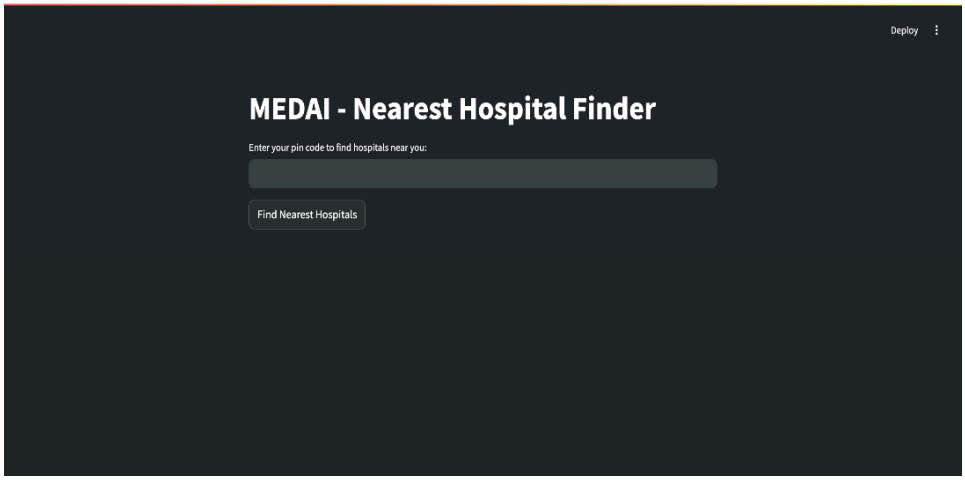






Go Back To The ChatBot Run System Checker

Find the Nearest Hospital



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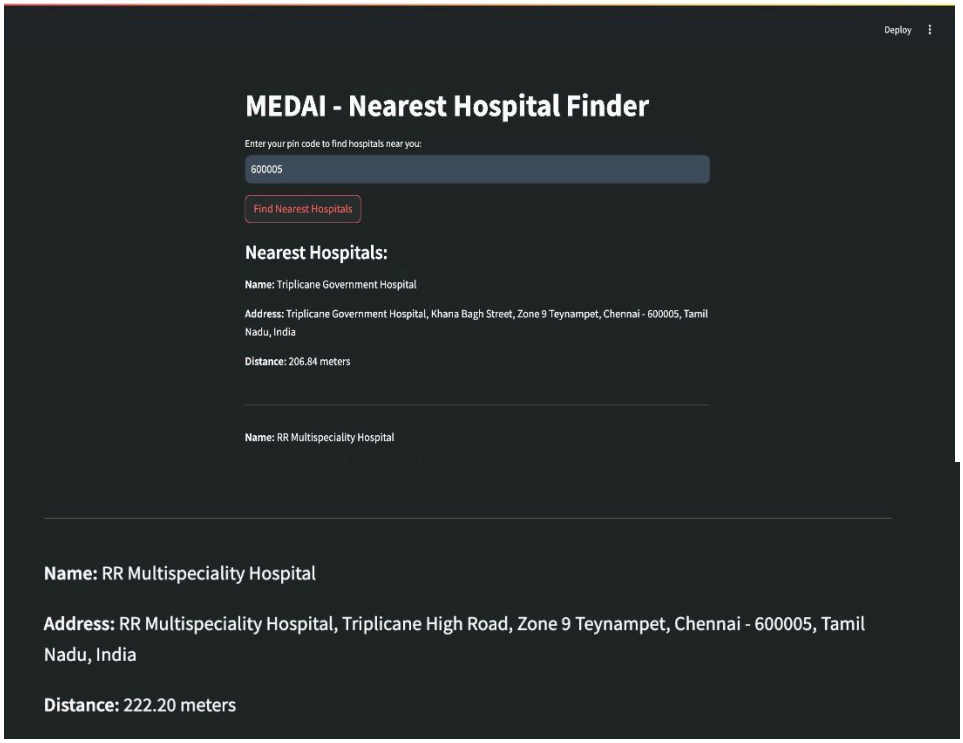
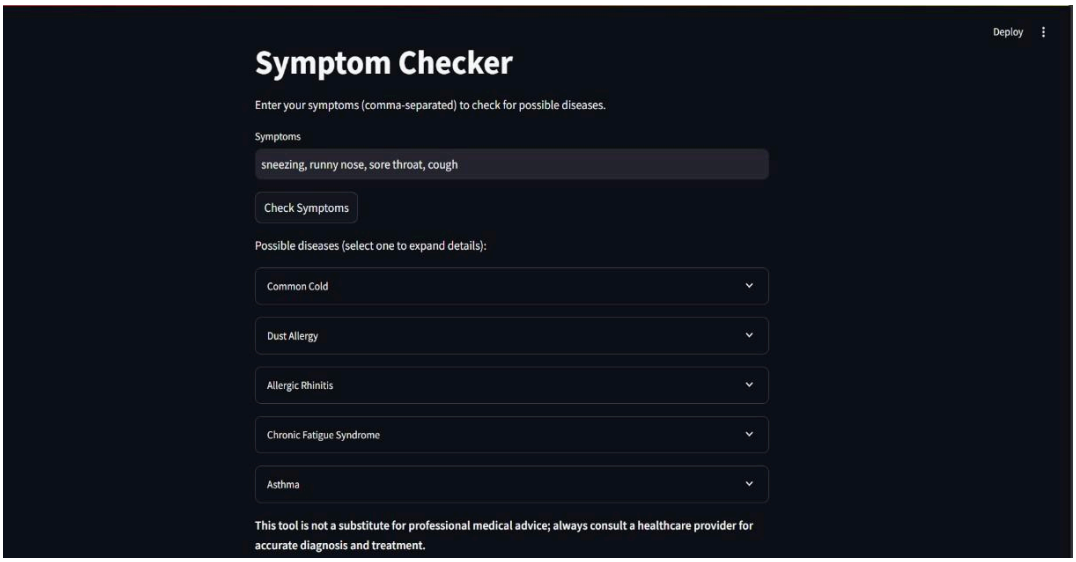
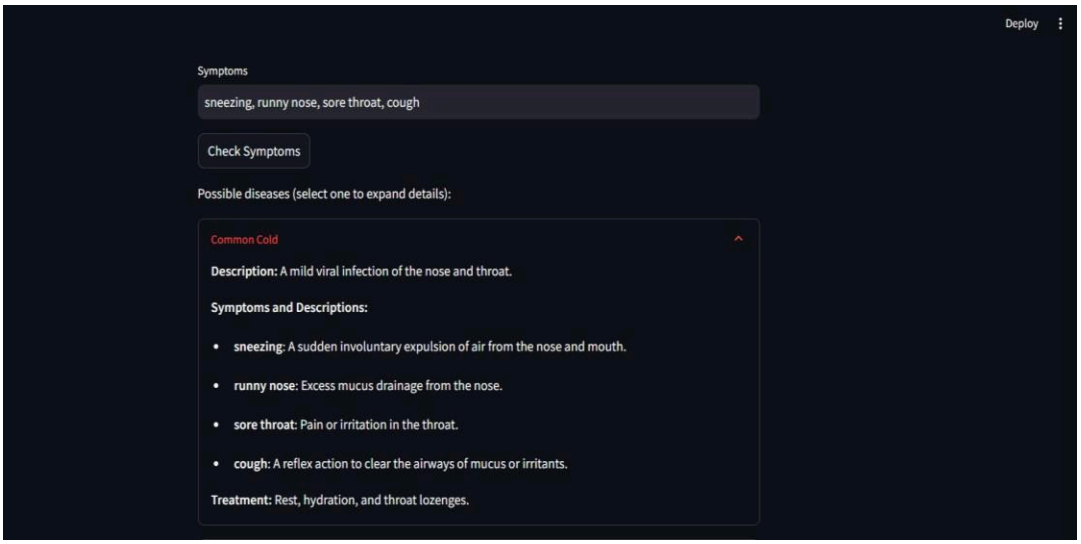



Deploy
Symptom Checker
Enter your symptoms (comma-separated) to check for possible diseases.
Symptoms
sneezing, runny nose, sore throat, cough
Check Symptoms
Possible diseases (select one to expand details):
Common Cold
Dust Allergy
Allergic Rhinitis
Chronic Fatigue Syndrome
Asthma
This tool is not a substitute for professional medical advice; always consult a healthcare provider for accurate diagnosis and treatment.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Symptoms and Descriptions:
sneezing: A sudden involuntary expulsion of air from the nose and mouth.
runny nose: Excess mucus drainage from the nose.
sore throat: Pain or irritation in the throat.
cough: A reflex action to clear the airways of mucus or irritants.
Treatment: Rest, hydration, and throat lozenges.