



MEDITRAIN AI

EMPOWERING THE DOCTORS OF TOMORROW-TODAY

Your health, our priority. Meditrain AI—where compassionate care meets intelligent innovation, empowering better diagnoses and enhancing medical learning for a healthier future.





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Introduction

- **What is Meditrain AI?**

An AI-powered chatbot that acts as both a patient for trainee doctors and a doctor for medical queries.

- **Purpose of the Project:**

To provide medical trainees with a simulated patient for realistic practice.

- **Why is it Important?**

Bridges medical learning with real-world practice, enhancing accessibility.





Problem Statement

Medical trainees face challenges in gaining hands-on diagnostic experience due to limited access to real patients, while general users struggle to find quick and reliable medical guidance.

Meditrain AI bridges this gap by providing an interactive platform where AI acts as both a patient and a doctor, enhancing medical training and improving accessibility to healthcare information.



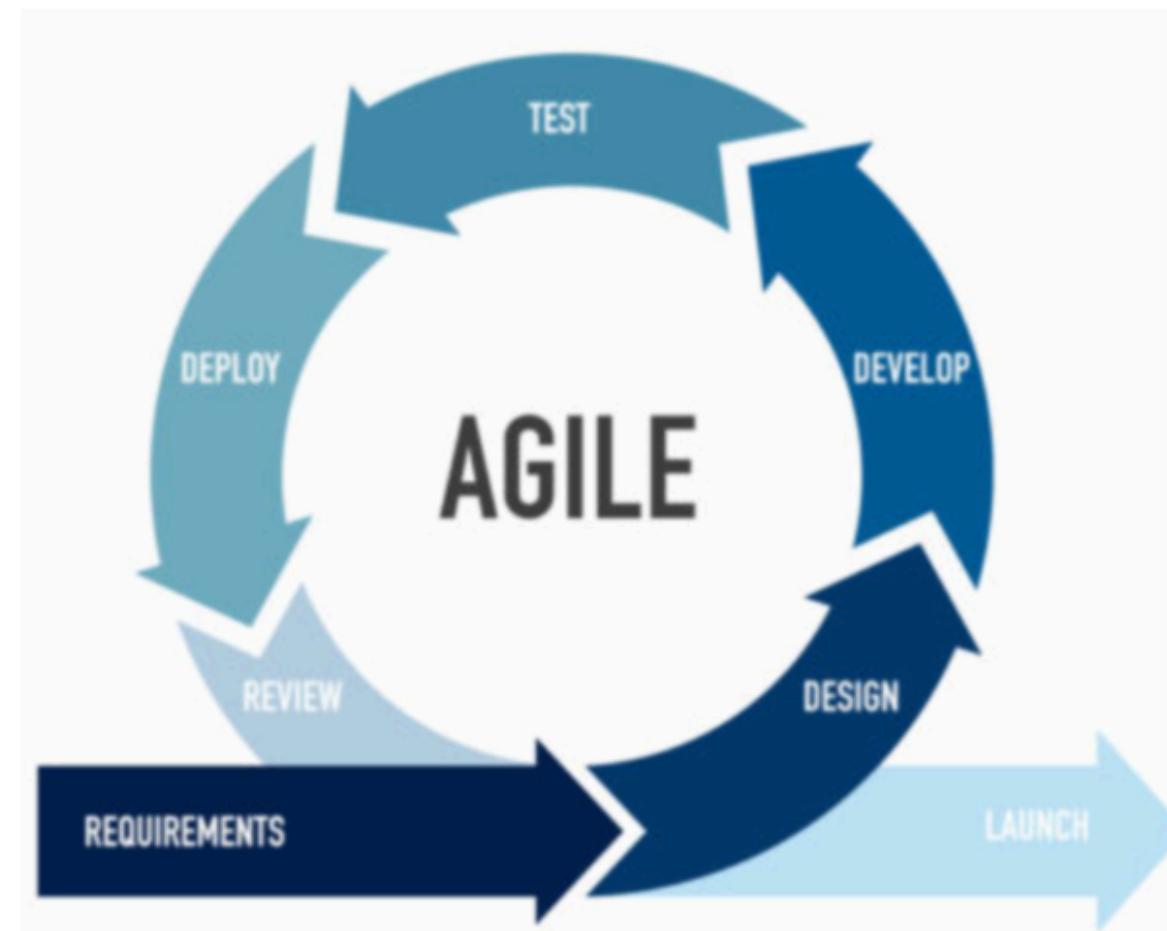
Objective

- Develop an AI-driven chatbot capable of simulating both patient and doctor roles.
- Enhance medical training by providing interactive and realistic patient simulations.
- Assist users with reliable AI-powered medical guidance.
- Enable real-time, personalized responses based on user interactions.
- Ensure secure handling of user data and maintain privacy.
- Provide a user-friendly interface for seamless interaction and accessibility.



Agile Methodology Overview

- **Incremental Development** - Delivers the project in small, functional parts through iterative cycles.
- **Adaptive Planning** - Quickly adjusts to changing requirements for continuous improvement.
- **Collaborative Approach** - Encourages teamwork, regular feedback, and stakeholder involvement.
- **User-Centric Focus** - Prioritizes user needs by refining features based on real-time input.
- **Sprint-Based Execution** - Breaks down development into manageable phases for efficiency.
- **Continuous Testing & Integration** - Ensures quality and stability at every stage.



Techstack

Frontend

- HTML
- CSS
- JavaScript

Backend

- Python
- Flask

Development Tools

- VS Code
- Jupyter Notebook
- GitHub

Libraries

- Flask
- FlaskSQLAlchemy
- Flask-Migrate
- Pandas
- Fuzzywuzzy
- Scikit-learn

Models

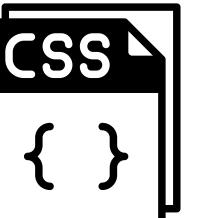
- Logistic Regression
- Random Forest

Database

- SQLite



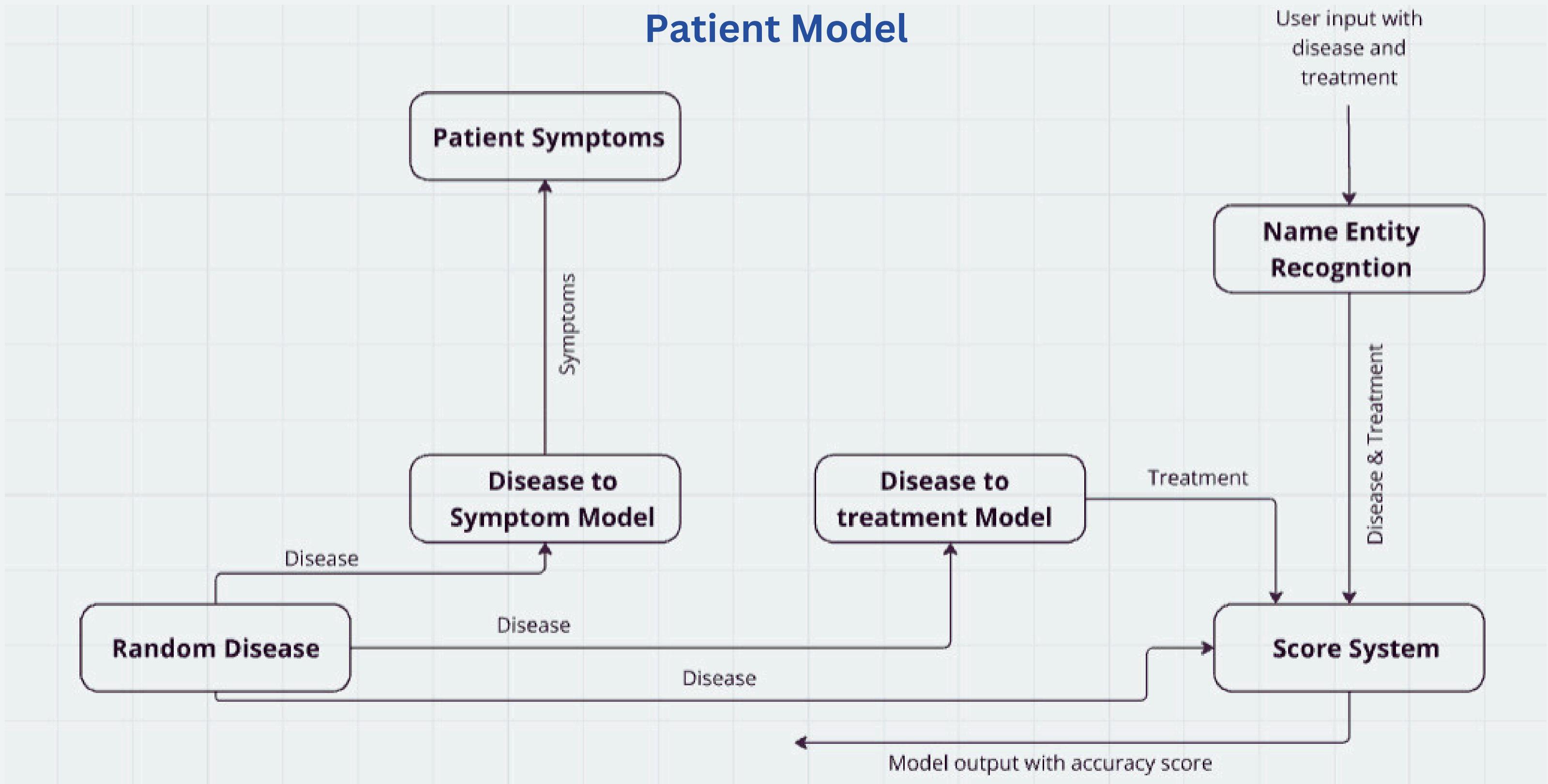
HTML



.js

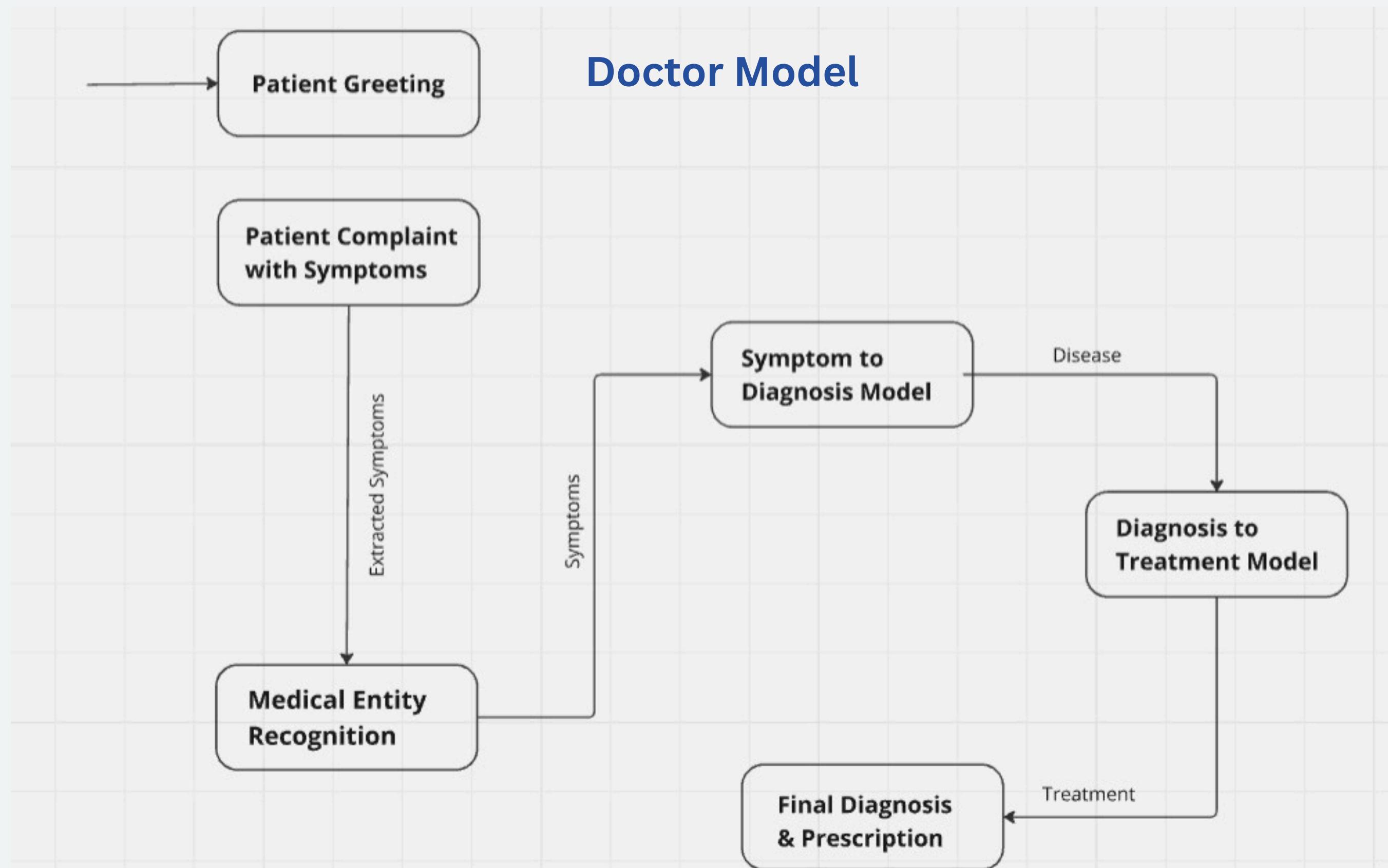


Architecture Of Model





Architecture Of Model





Challenges

- Data: Accuracy, diversity, privacy, and lack of labeled datasets.
- Model: Understanding medical terms, context retention, and avoiding misinformation.
- Interaction: Relevant follow-ups, real-time responses, and symptom interpretation.
- Ethics & Legal: No direct treatment, bias mitigation, and compliance.
- Deployment: API costs, scalability, and user-friendly interface.



Future Scope

- **Support for Multiple Languages:** Expand the chatbot to interact in various languages.
- **Contextual Memory:** Retain user interaction history for more personalized responses.
- **Localized Medical Guidance:** Provide region-specific health advice based on user location.
- **Symptoms Logging:** Allow users to record and track their symptoms over time.
- **Voice Interaction:** Incorporate voice input for a hands-free user experience.
- **Integration with Real-Time Data:** Sync with wearable devices to offer personalized health recommendations.



Conclusion



- Meditrain AI transforms medical training by simulating patient interactions for trainees and offering AI-driven consultations for users, fostering interactive learning and dependable guidance.
- Built with a secure, scalable framework and driven by Agile methodology, it evolves continuously, with planned advancements such as multilingual support and real-time data integration to enhance accessibility and efficiency.

**Thank
You**