



RAPIDCARE GITHUB

RAPIDCARE – AI-POWERED EHR SYSTEM

SHIFT THE FOCUS FROM PAPERS TO PATIENTS

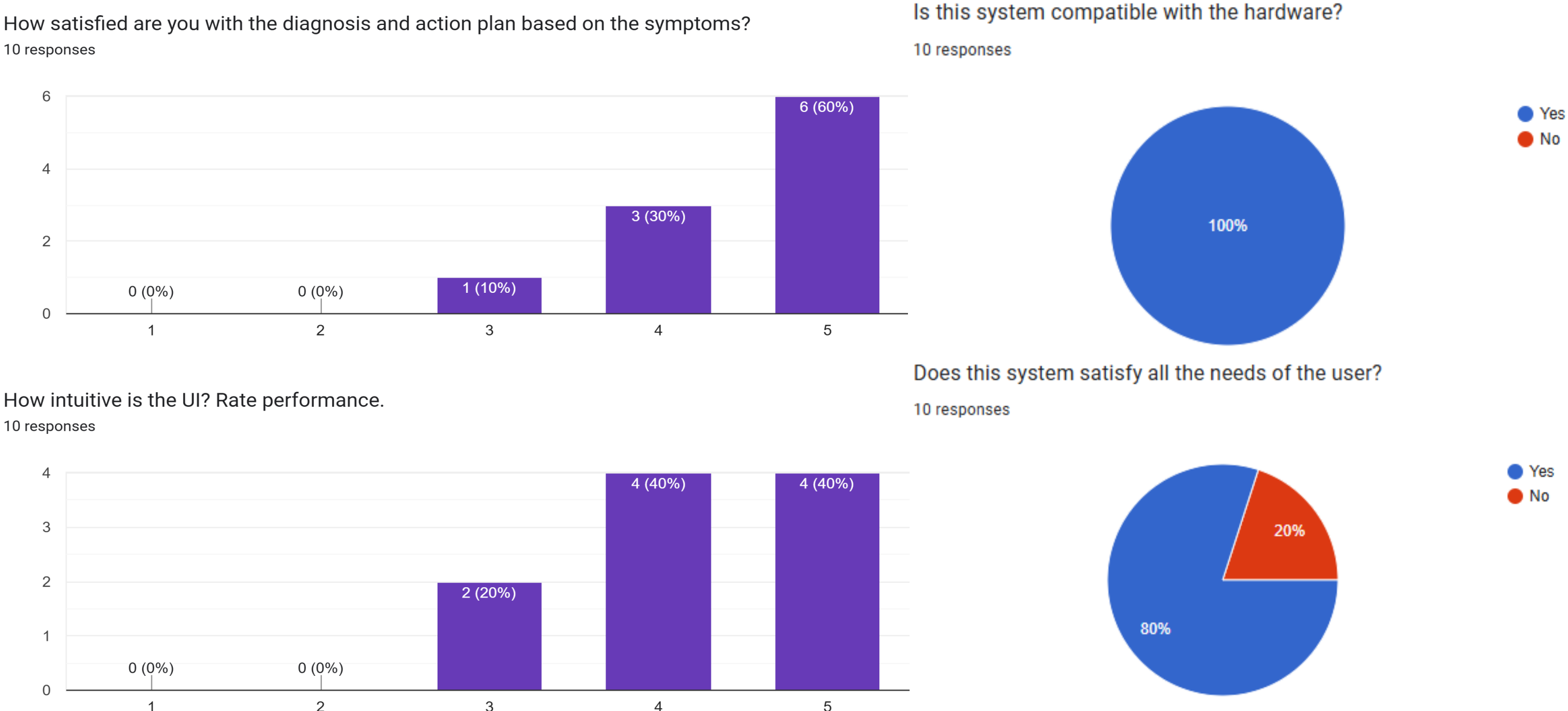
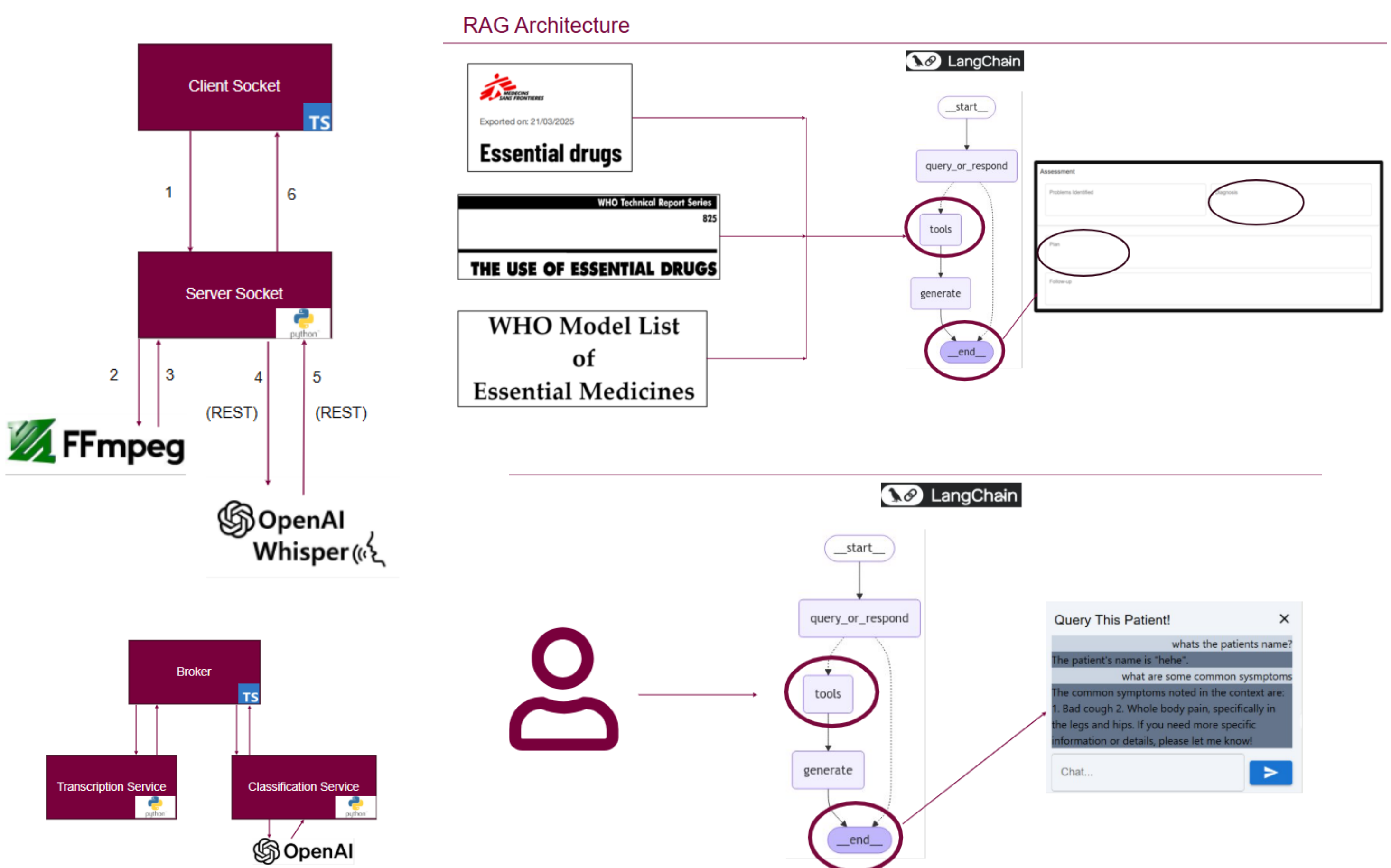


ENGINEERING
Computing & Software

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PROBLEM OVERVIEW

- Extreme shortage** of family doctors in Ontario [1]. Number of patients without one will rise from **600,000 to 2.5 million** [2]
- Massive wait times in ERs** with average length of stay 22.7 hours in Ontario [3]
- Healthcare professionals have a **massive documentation overhead** which gives them less time to focus on patients
- Current solutions have **complex UI** and which makes it **harder to traverse** through patient data

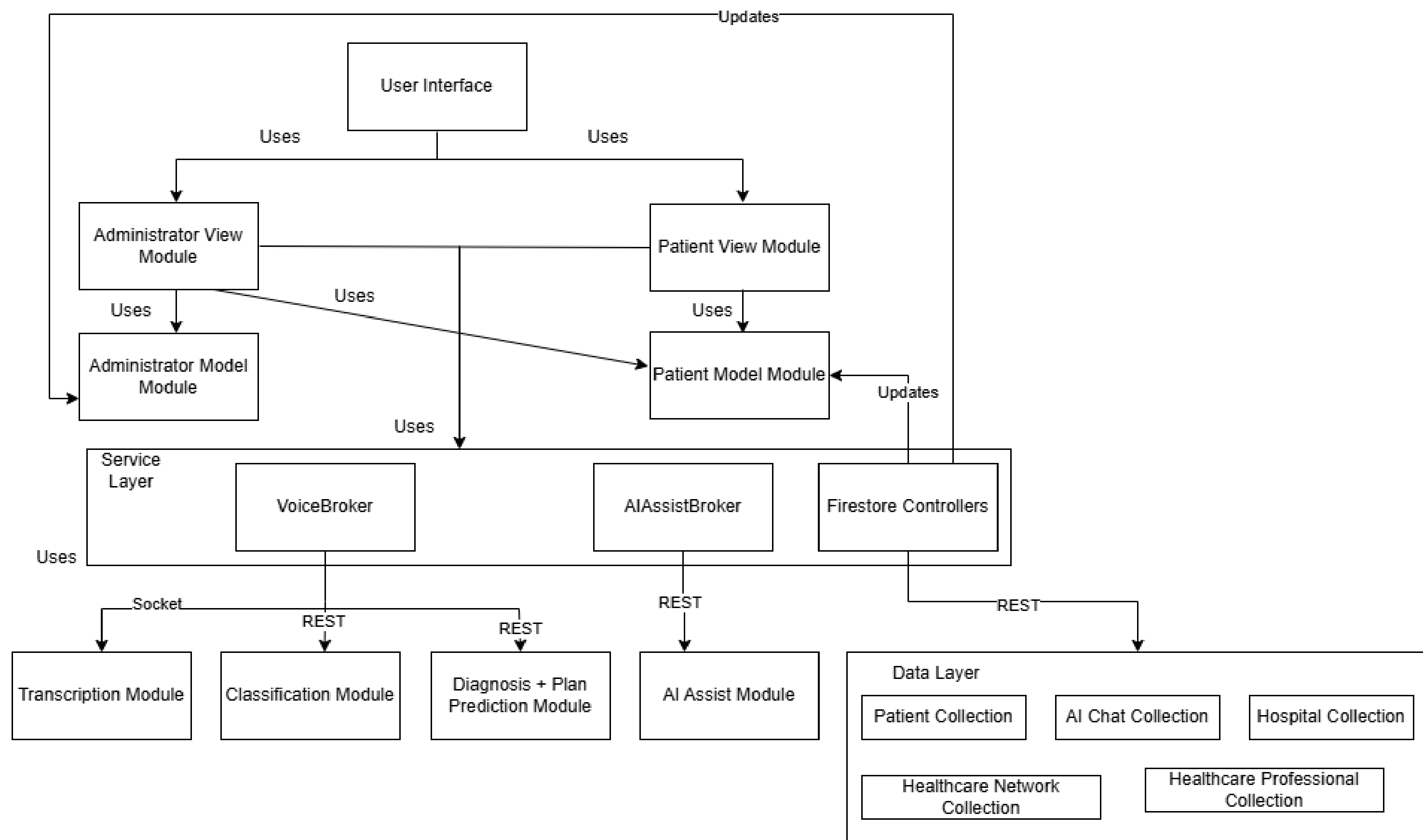


KEY COMPONENTS

- UI:** User-friendly and intuitive UI to streamline navigation and ease of use for healthcare professionals.
- Transcription Service:** Transcribes captured audio from patient-doctor interaction from frontend using socket communication.
- Classification Service:** Processes and classify transcribed text using LangGraph to automatically fill appropriate fields of the patient records.
- Diagnosis and Plan prediction:** Provides suggestions for diagnosis and treatment plans by analysing patient-doctor conversation, with context ensuring adherence to standard protocols.
- AI-Assist:** Allows to query the patient records regarding the previous visits, medical history, and other general information, allowing healthcare professionals to quickly access relevant information.

OUR SOLUTION

- Effectively record and store patient data, clinical notes, and treatment plans with **real-time data access**
- Use patient-doctor interactions to **automatically fill patient records**
- Provide **comprehensive diagnosis predication**
- Comprehensive action plan** to address diagnosis prediction
- AI Assistant**, to **query** patient previous visits and **health conditions**
- High discoverability** and **clear affordances** for users



IMPACT OF THE SOLUTION

- ✓ **Improved Patient experience:** Leads to reduction in documentation, administrative overhead, and ER wait times.
- ✓ **Improved Healthcare Professional experience:** UI follows HCI principles ensuring ease of use and user-friendly interaction. Intuitive and easy to navigate UI, minimizing learning curve.
- ✓ **Improved patient data management:** Comprehensive data modelling ensuring accuracy and reliability. Real-time data access through assistant functions providing quick and more powerful queries.

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Practitioner: Pranav Kalsi

Subjective	
Reason for visit	running nose and lot of mucus
History of presenting illness	Happening for a week
Past medical history	Nothing related.
Review of systems	running nose, lot of mucus
Allergies	N/A
Current Medications	Ventolin
Objective	
Vital signs	Normal Heart rate, no congestion
Physical Exam	Good reactivity.
Laboratory Data	N/A
Imaging Results	N/A
Other Data	None
Assessment	
Problems Identified	Runny nose, difficulty breathing.
Diagnosis	Based on your symptoms of a runny nose and excessive mucus, along with your history of asthma, you may be experiencing allergic rhinitis or an upper respiratory infection. As an asthmatic, this condition could potentially exacerbate your asthma symptoms.
Plan	
I recommend the following treatment plan: If allergic rhinitis is diagnosed, consider starting an intranasal corticosteroid such as fluticasone or mometasone nasal spray, with a typical dose being 1 spray (50 mcg) in each nostril once daily. If asthma symptoms worsen, you should continue using Ventolin as directed. Monitor your symptoms closely, and consider following up with your healthcare provider if symptoms do not improve in 1-2 weeks or worsen overall. Additionally, lifestyle modifications such as avoiding known allergens and maintaining a clean environment may help reduce symptoms.	

FUTURE IMPROVEMENTS

- Expand functionality to auto-generate prescriptions, referrals:** Faster decision making, enhances efficiency, and reduce errors
- Seamless integration with blood work labs and diagnostic centres:** Improved data exchange and streamlined workflows
- Advanced workflow analytics for hospitals and clinics:** Optimize operations and resource allocation
- Multi-language support for healthcare professionals:** Improves accessibility for diverse populations

References:

- [1] N. Ireland, "2.5 million Ontarians don't have a family doctor, college says | CBC News," CBCnews, <https://www.cbc.ca/news/canada/toronto/ontario-family-doctor-shortage-record-high-1.7261558> (accessed Mar. 29, 2025).
- [2] Ryan Patrick Jones, "Family doctor shortage affects every region and is getting worse, Ontario Medical Association says," CBC, <https://www.cbc.ca/news/canada/toronto/family-doctor-shortage-oma-1.7097935> accessed Mar. 29, 2025.
- [3] Let's make our health system healthier, "System performance," Emergency Department Time Spent by Patients in Ontario – Health Quality Ontario (HQO), <https://www.hqontario.ca/system-performance/time-spent-in-emergency-departments> (accessed Mar. 29, 2025).