

## SRS for Neurology Assistant Chatbot for patient screening

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<b>Users of the application</b>	This chatbot is for patients, helping them with screening, reports, and directions. It's also super handy for doctors and staff, making screening faster and easier, especially for people who prefer different languages.			
<b>Brief description of the project and key requirements</b>	<p>The objective of this project is to design, develop, and deploy an AI-powered chatbot capable of engaging in speech-based conversations with patients in the neurology department. The chatbot will assist by:</p> <ol style="list-style-type: none"> <li><b>1. Patient Screening:</b> Asking preliminary health-related questions to collect key information about symptoms, history, and concerns before their consultation.</li> <li><b>2. Report Generation:</b> Preparing a summary report for doctors to streamline patient assessments.</li> <li><b>3. Reception Assistance:</b> Acting as a virtual receptionist to provide directions, appointment confirmations, and general information about hospital services</li> <li><b>4. Multilingual Communication:</b> Communicating in the patient's preferred language to ensure inclusivity and ease of interaction for individuals from diverse linguistic backgrounds.</li> </ol>			
<b>Functional Requirements</b>	User Category	Use case	Description	Priority
	Patient-	patient screening	The chatbot asks preliminary questions to assess the patient's symptoms and medical history.	High
	Patient	Report generation	The chatbot generates a summarized report based on the patient's responses for the doctor's reference.	high
	Patient	Appointment confirmation	Patients can check their appointment status and receive confirmations through the chatbot.	Low

	Patient	Multilingual assistance	The chatbot communicates in the patient's preferred language.	Medium
	Doctor	Access Patient Reports	Doctors can view AI-generated patient screening reports.	High
	Doctor	Customize Screening Questions	Doctors can modify or add custom questions for patient screening.	Low
	Admin	Update FAQs and Database	Admins can modify hospital-related information and chatbot responses.	Medium
<b>Non-Functional Requirements</b>	<p><b>User Interface</b></p> <ul style="list-style-type: none"> <li>● Intuitive and user-friendly interface.</li> <li>● Speech-based interaction with clear audio output.</li> <li>● Multilingual support.</li> <li>● Simple navigation for patients.</li> </ul> <p><b>Performance</b></p> <ul style="list-style-type: none"> <li>● Response time: <math>\leq 10s</math> (text), <math>\leq 15s</math> (speech).</li> <li>● Handle 100+ concurrent users.</li> <li>● Symptom screening &amp; report generation in <math>\leq 10s</math>.</li> </ul> <p><b>Security</b></p> <ul style="list-style-type: none"> <li>● RBAC (Role-Based Access Control) for restricted access.</li> <li>● User authentication for doctors &amp; staff.</li> <li>● Admin has full access to manage users, chatbot responses and viewing logs.</li> </ul>			

<b>Performance requirements/Tech stack</b>	ReactJS/Django- UI for patients, doctors, and hospital staff, user authentication, and other backend tasks Python- AI-generated report generation logic FastAPI- high-performance API for chatbot interactions and real-time data fetching. MongoDB- Stores patient records, chatbot conversations, and hospital data efficiently
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