# HealthAI: Intelligent Healthcare Assistant Using IBM Granite

## Overview

HealthAI is an intelligent healthcare assistant powered by IBM Granite, designed to enhance patient care, streamline clinical workflows, and provide accurate, AI-driven medical support. The system leverages large language models (LLMs) from IBM Granite to understand and respond to medical queries, assist healthcare providers, and empower patients with reliable information.

## Features

- AI-Powered Medical Query Handling: Responds to queries using NLP and medical knowledge.

- Symptom Checker: Helps patients input symptoms and get possible conditions.

- Medical Document Summarization: Summarizes clinical notes and reports using IBM Granite.

- Privacy and Security: HIPAA-compliant and ensures confidentiality.

- Appointment and Medication Management: Manage schedules and reminders.

## Powered by IBM Granite

IBM Granite is a suite of foundation models trained for enterprise use. HealthAI uses the Granite NLP models to perform:
- Named Entity Recognition (NER) for medical terms
- Text classification
- Natural language understanding (NLU)
- Summarization and question answering

## Use Cases

- Clinician Assistant: Summarizes EHRs and auto-generates SOAP notes.

- Virtual Patient Assistant: Answers FAQs, tracks symptoms, and supports care.

- Telehealth Triage Tool: Sorts messages by urgency and suggests next steps.

## System Architecture

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1. Frontend: Chat-based interface

2. Backend:

   - IBM Granite model APIs

   - Secure database for user and health data

3. Integration:

   - EMR/EHR Systems

   - Calendar APIs

   - SMS/email services

## Future Enhancements

- Wearable integration (Fitbit, Apple Health)

- Voice assistant capabilities

- Multilingual support

- Predictive analytics for chronic conditions

## Disclaimer

HealthAI is not a replacement for professional medical advice, diagnosis, or treatment. Always consult a licensed healthcare provider for medical concerns.