**HealthAI – Intelligent Healthcare Assistant Using IBM Granite\*\***

1. Introduction

Project Title:\* HealthAI – Intelligent Healthcare Assistant Using IBM Granite

\* Team Members: MK Shiva Shankar (Developer)

2. Project Overview

\*Purpose:

To leverage IBM's Granite LLM for building a reliable, accessible, and AI-powered health assistant that aids users in health-related queries efficiently and securely.

\* Features:

\* AI-driven symptom checker

\* Medical suggestions using IBM Granite

\* Chatbot-based interaction

\* Fast and accurate responses

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3. Architecture

\* Frontend:

Built using HTML, CSS, and JavaScript for a responsive user interface.

\* Backend:

Python with FastAPI framework, responsible for handling user queries and communicating with IBM Granite LLM API.

\* Database:

Optional NoSQL integration (currently stateless interactions).

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4. Setup Instructions

\* Prerequisites:

\* Python 3.10+

\* IBM Granite API access

\* FastAPI, Uvicorn, Requests

\* Basic HTML/CSS/JS knowledge

\* Installation:

1. Clone the repository

2. Create a virtual environment

3. Install dependencies using `pip install -r requirements.txt`

4. Set up `.env` file with IBM API Key

5. Run using: `uvicorn main:app --reload`

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5. Folder Structure

\* Client:

\* `index.html`

\* `style.css`

\* `script.js`

\* Server:

\* `main.py`

\* `granite\_api.py`

\* `requirements.txt`

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6. Running the Application

\* Frontend:

Open `index.html` in a web browser.

\* Backend:

Navigate to the `server` directory and run:

`uvicorn main:app --reload`

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7. API Documentation

\* Endpoint:\*\* `/ask`

\* Method:\*\* POST

\* Description: Takes user input and returns a response from IBM Granite.

\* Example Request:

```json

{

"question": "What causes a headache?"

}

```

\* \*\*Example Response:\*\*

```json

{

"answer": "Common causes include stress, dehydration, and sinus infections."

}

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8. Authentication

\* Uses token-based authentication with IBM Granite API.

\* Secure API key stored in `.env` environment file.

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9. User Interface

\* Chatbot interface for entering symptoms or questions.

\* Responsive design with live message display.

\*(Screenshots or UI GIFs should be attached here.)\*

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10. Testing

\* Strategy:

\* Unit testing for backend API

\* Manual UI/UX testing on different browsers

\* Load testing using Postman or Apache Bench

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11. Screenshots or Demo

\* Include terminal and UI screenshots here.

\* Demo Link:[GitHub.com/MKShiva/HealthAI](https://github.com/MKShiva/HealthAI)

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12. Known Issues

\* No real-time doctor feedback

\* Requires internet for IBM API

\* Limited to text-based symptom processing

13. Future Enhancements

\* Voice input support

\* Integration with wearable health devices

\* Real-time video consultation

\* Multilingual response generation