# HealthAI – Intelligent Healthcare Assistant

# Project Documentation

## 1.Introduction

- Project title : HealthAI-Intelligent Healthcare Assistant
- Team member : S.Asher Godwin
- Team member : G.Dhanush
- Team member : S.Syed Mohammed Irfan Pathan
- Team member : Aswanth.O.P

## 2. Project overview

The HealthAI application is a Gradio-based interactive assistant powered by the IBM Granite LLM.
It provides:
1. Disease Prediction from symptoms.
2. Treatment Plan suggestions personalized by age, gender, and history.
3. Health Analytics Dashboard with trends, metrics, and AI-generated health insights.

Disclaimer: This is for informational purposes only.

## 3.Technologies Used

- Python
- Transformers (HuggingFace) – for LLM (ibm-granite/granite-3.2-2b-instruct)
- Torch – model inference
- Gradio – web app interface
- Pandas & NumPy – health data generation & processing
- Altair – data visualization

## 4.Features

1. Disease Prediction – User inputs symptoms, AI suggests possible conditions & recommendations.
2. Treatment Plans – User provides condition, age, gender, history → AI generates personalized
treatment plan.
3. Health Analytics Dashboard – Shows 90-day health data trends, symptom frequency, statistics,
and AI insights.

## 5.Code Structure

1. Model Setup: Load IBM Granite model & tokenizer.
2. Core Functions:
- generate_response(prompt, max_length)
- disease_prediction(symptoms)
- treatment_plan(condition, age, gender, history)
- generate_health_insights(summary_string)
3. Data Generation & Processing:
- Creates 90 days of sample data (heart rate, blood pressure, blood glucose, symptoms)
- Computes rolling averages, symptom frequency, descriptive statistics
- Prepares summary_string for AI insights
4. Visualization: Altair charts for vitals & symptoms, integrated with Gradio.
5. Gradio UI Tabs: Welcome, Disease Prediction, Treatment Plans, Health Analytics Dashboard.

## 6.Running the App

1. Install dependencies:
pip install torch transformers gradio pandas altair
2. Run script:
python health_ai.py
3. Access Gradio interface via local URL from terminal.