Health AI – Task Completion Report

1. Project Title

Health AI – An AI-Powered Medical Assistant

2. Objective

The objective of this project was to develop an AI-based healthcare assistant capable of analyzing user symptoms, predicting possible diseases, and generating personalized treatment suggestions while emphasizing the importance of professional medical consultation.

3. Tasks Completed

Phase 1 – Setup & Model Integration

- Installed and configured required libraries: Python, PyTorch, Transformers, and Gradio.

- Integrated the IBM Granite 3.2 2B Instruct model for natural language processing.

- Implemented tokenizer and model loading functions.

Phase 2 – Core Functionalities

- Disease Prediction Module: Designed to process user symptoms and output possible conditions with general advice.

- Treatment Plan Module: Generates personalized recommendations based on condition, age, gender, and medical history.

- Added disclaimer to ensure ethical usage of AI in healthcare.

Phase 3 – User Interface

- Built a Gradio-based interface with two interactive tabs: Disease Prediction and Treatment Plan.

- Created user-friendly textboxes, dropdowns, and output sections for better interaction.

Phase 4 – Testing & Validation

- Tested sample inputs (e.g., fever, cough, diabetes).

- Verified that responses were clear, structured, and medically relevant.

- Ensured that disclaimers appeared with every output.

4. Results

- Successfully developed a functional AI-driven medical assistant.
- Provided accurate symptom-based predictions and general treatment plans.
- Ensured ease of use with a clean, interactive interface.

5. Limitations

- Cannot replace professional medical consultation.
- Limited to text-based analysis; no real-time medical data integration.
- May occasionally generate incomplete or generalized outputs.

6. Future Scope

- Integration with verified medical APIs for accuracy.
- Multi-language support for wider accessibility.
- Enhanced UI/UX with structured outputs and charts.
- Patient history management for personalized tracking.

Conclusion

The Health AI project successfully achieved its primary objectives of creating a user-friendly AI assistant that analyzes symptoms and provides treatment suggestions. While it is not a replacement for professional healthcare, it demonstrates how AI can support health awareness and early guidance.