Doctor Appointment Chatbot

Research On AI Models:

1.Abstract:

This project aims to develop an intelligent Doctor Appointment Chatbot that assist patients in scheduling, rescheduling, and managing their medical appointments with ease. The chatbot is designed to understand user queries, interpret intent, and interact with users in a conversational manner, simplifying the process of finding and booking appointments with healthcare professionals.

2.AI Models:

➢ Open AI GPT-4-turbo

- **Strengths**: Advanced NLP, contextual understanding, customizable API
- **Weaknesses**: Can be costly for high-traffic applications
- **Best for**: General chatbot interactions, appointment scheduling, patient FAQs

➢ Google Gemini 1.5

- **Strengths**: Multimodal (text, images, voice), strong Google Cloud & healthcare integration
- **Weaknesses**: Limited developer access
- **Best for**: Voice-based scheduling, patient support with Google services

➢ Meta Llama 3

- **Strengths**: Open-source, customizable for privacy-conscious applications
- **Weaknesses**: Requires customization for NLP optimization
- **Best for**: Self-hosted healthcare AI, privacy-focused chatbots

➢ Microsoft Azure AI (Copilot & GPT-4 on Azure)

- **Strengths**: Enterprise-grade security, direct EHR/EMR integration
- **Weaknesses**: Best suited for organizations using Microsoft ecosystem
- **Best for**: Large hospitals, clinics with strict compliance needs

➢ Amazon Bedrock (Titan & Claude AI models)

- **Strengths**: Scalable AWS-based infrastructure, integration with AWS HealthLake
- **Weaknesses**: Not as advanced in NLP as GPT-4
- **Best for**: AWS-based healthcare applications, appointment scheduling automation

➢ Rasa (Open-Source Conversational AI)

- **Strengths**: Fully customizable, on-premises deployment for privacy
- **Weaknesses**: Requires significant development effort
- **Best for**: Custom chatbot solutions with full control over AI models

➢ DeepMind MedPaLM 2

- **Strengths**: Trained specifically for medical conversations and queries
- **Weaknesses**: Limited general chatbot capabilities outside healthcare
- **Best for**: Advanced medical queries and diagnostic assistance.

3.Comparison of AI Models

AI Model	Accuracy	Use Case
OpenAI GPT-4	90%	General chatbot interactions, scheduling.
Google Gemini 1.5	85%	Voice-based scheduling, Google services integration
Meta Llama 3	80%	Open-source healthcare AI, privacy-focused solutions
Rasa (Open-Source AI)	75-85%	Fully customizable chatbot, privacy-conscious applications
Hybrid Model	90-95%	Integrated Chatbot services
DeepMind MedPaLM 2	80%	Advanced medical diagnostics, expert-level medical reasoning