 Marwadi University	Marwadi University Faculty of Technology Department of Information and Communication Technology	
Subject: AI	Aim: Project Defination	
	Date: 16/03/2025	Enrolment No: 92200133030

Project Title: AI Chatbot for Historical Places

Project Description: This project aims to develop an AI-powered chatbot capable of answering predefined questions related to historical places using natural language processing (NLP). The chatbot will extract questions and corresponding answers from an Excel file and provide responses in speech format based on user inputs. This system will serve as a virtual guide for travelers, enhancing their knowledge about historical sites by providing accurate and engaging information.

Team Members:-

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Steps to Attain the Project (with Timeline):

Week 1: Research and Planning

- Define project scope and requirements
- Identify suitable technologies and frameworks (Python, NLP libraries, TTS engines)
- Gather and format predefined question-answer dataset specific to historical places

Week 2: Dataset Preparation & Model Selection


- Clean and preprocess dataset (remove duplicates, standardize format)
- Choose an NLP model for text understanding (e.g., BERT, GPT-based models)
- Select a Text-to-Speech (TTS) engine for voice output

Week 3: Chatbot Development

- Develop backend logic to process traveler queries
- Implement NLP model to match inputs with predefined questions
- Integrate TTS engine for spoken responses

Week 4: Frontend and API Development

- Build a user-friendly interface for chatbot interaction
- Implement speech input functionality for voice-based queries

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Week 5: Testing and Optimization

- Conduct functional and performance testing
- Optimize response time and accuracy
- Improve speech synthesis quality

Week 6: Deployment and Documentation

- Deploy the chatbot on a web or mobile platform
- Prepare user and developer documentation
- Collect feedback and plan future enhancements

Dataset Description, Statistics, and Link:

- **Dataset Description:** The dataset consists of predefined questions and answers about historical places worldwide. It includes frequently asked questions regarding history, architecture, cultural significance, and visitor guidelines.
- **Statistics:**
 - Number of questions: ~500
 - Categories: Various historical places across different regions
 - Average response length: 5-6 sentences

Other Specific Project-Related Details:

- **Technologies Used:** Python, TensorFlow/PyTorch, SpeechRecognition, gTTS/Amazon Polly, Flask/Django for API development
- **Target Audience:** Tourists, history enthusiasts, and educational institutions
- **Expected Outcomes:** A functional AI chatbot capable of accurately answering predefined questions about historical places with natural-sounding speech output, enhancing traveler experiences and knowledge.
- **Challenges and Solutions:**
 - **Challenge:** Ensuring the chatbot understands variations of predefined questions.
 - **Solution:** Implement NLP-based semantic similarity matching.
 - **Challenge:** Generating natural and clear voice responses.
 - **Solution:** Use high-quality TTS engines with speech modulation.

This plan provides a structured approach to developing a robust AI chatbot tailored for historical places, ensuring timely completion within six weeks.