CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY (CHARUSAT)

DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY & RESEARCH (DEPSTAR)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROJECT PROPOSAL SUBMISSION

Semester:	6	**Div.:-**	2	**Course Name:** Software Group Project – IV	
Course Code: CSE315				**Date:**	20/01/2025

Details of Project Team

Sr. No.	Student's Roll Number	Name of Student	Student's e-mail Address	Student's Contact No.
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Sr. No:	Parameters:	Description:
a	**Project Title**	AI-Driven Video Creation Using Trend Analysis
b	**Domain of Project Definition**	Artificial Intelligence, Natural Language Processing and Multimedia Content Generation
c	**Problem Statement:** A problem statement in a project clearly defines the issue that needs to be solved. It explains what the problem is, why it matters, and show the problem's impact. This helps focus the project and guides the development of effective solutions.	The modern content landscape demands quick, accurate, and engaging responses to trending topics. However, manually analyzing trends, sourcing related news, and creating video content is time-intensive and prone to delays. This project addresses the challenge by automating the detection of trends, summarizing relevant news, performing sentiment analysis, and generating videos based on AI-generated scripts.
d	**Project Objectives and Scope:** Project objectives are specific, measurable goals that the project aims to achieve. They provide a clear direction and serve as benchmarks for evaluating the project's success. **Scope:** The project scope outlines the boundaries and deliverables of the project, detailing what will and will not be included. It sets the context for what the project will accomplish and helps manage stakeholder expectations.	**Objectives:** 1. Automate trend detection from platforms like Twitter (X). 2. Fetch related news articles to provide context to trends. 3. Perform sentiment analysis of news to generate a sentiment-based perspective. 4. Create a script suitable for video narration using AI. 5. Convert the generated script into an engaging video using AI for audio-visual synthesis. **Scope:** • Integrating APIs (Google Trends, DuckDuckGo) for trend detection. • Using NLP for news summarization and sentiment analysis. • Implementing AI tools to generate scripts and transform them into videos with audio and visuals. • Enabling multilingual support for global reach

e	**Background Study of Existing System** The background study involves an examination of the existing relevant systems or technology that the project seeks to improve or replace. This includes an analysis of its architecture, functionalities, strengths, and weaknesses.	Currently, platforms like social media marketing tools and content creation suites provide manual or semi-automated solutions for trend analysis and content creation. However, they lack integration for full automation in script generation and video production. This project aims to bridge the gap by integrating multiple advanced AI tools into a unified system.
f	**Methodology and Approach** **Methodology:** The methodology section outlines the systematic procedures/method/workflow/flowchart/architecture and techniques that will be used to conduct the project. This section also describes the practical steps and strategies that will be implemented to achieve the project's goals.	**Methodology:** 1. Trend Detection: Use Google Trends or Twitter API to fetch trending topics. 2. News Summarization: Utilize DuckDuckGo or other news APIs to collect related articles. 3. Sentiment Analysis: Implement VADER Sentiment Analysis for evaluating the tone of collected articles. 4. Script Generation: Use Groq API for generating conversational scripts based on trends and news. 5. Video Creation: Employ tools like Synthesia, D-ID, or HeyGen to convert scripts into AI-driven videos, combining text-to-speech and image animation. **Approach:** • Define workflow architecture. • Develop modular components for each step of the pipeline.Test and validate each component for performance and accuracy.

g	**Tentative Project Plan, Timeline and individual role** The project timeline provides the project schedule, highlighting key milestones, deadlines, and the duration of each phase.	Week 1-2: Research and Requirement Gathering Week 3-4: Trend Detection and News Fetching Week 5-6: Sentiment Analysis Week 7-8: Script Generation Week 9-10: AI Video Creation Week 11: Integration and Testing Week 12: Documentation and Final Presentation
h	**Innovation and Originality** **Innovation:** The innovation aspect of the project refers to the novel features, methodologies, or technologies introduced to address the problem in a new and effective way. **Originality:** Originality emphasizes the project's uniqueness and contribution to the field. It involves the creation of new knowledge, concepts, or products that have not been previously developed.	**Innovation:** This project introduces an end-to-end automation pipeline for trend analysis, news summarization, and AI-driven video creation, providing a real-time solution for creating engaging multimedia content. **Originality:** By integrating tools like Groq, VADER, and advanced video synthesis platforms, the project offers a unique approach that combines multiple AI capabilities into a single streamlined process.