Task 1 Report: GenVideo360 - AI Video Generation Tool

Objective

The project aims to build an AI-based tool that automates the generation of short videos (30–60 seconds) by scraping trending news topics and converting them into narrated video clips with text overlays and images. The tool demonstrates a proof-of-concept for automated content creation pipelines leveraging AI and generative media.

System Architecture

Pipeline Overview

1. **Trending News Scraper**
   a. Fetches trending news headlines (static data or scraped using APIs).
2. **Script Generator**
   a. AI-based logic to convert headlines into news-style short scripts.
3. **Media Selector**
   a. Selects related images for each news topic.
4. **Video Creator**
   a. Combines script text + image overlays to produce a short video.
5. **Frontend Interface**
   a. HTML/CSS/JS-based frontend for interacting with the system.

Project Structure

```
GenVideo360/
├── frontend/
│   ├── index.html          # UI for the video generator
│   ├── style.css           # Styling for layout and output
```

```
|    └── js/
|        └── script.js      # Core JS for script and image generation
├── backend/
|    └── (placeholder for AI logic & API integrations)
└── README.md
```

Features

- Generate a mock news script based on static or fetched news headlines.
- Simulate AI-based video generation using placeholder images and overlays.
- User interface to display:
  - News headline
  - Generated script
  - Simulated video frame (image + text overlay)

Technologies Used

Component	Technology
Frontend	HTML5, Tailwind CSS, Vanilla JavaScript
Backend (Planned)	Python (Flask) or Node.js for AI processing
AI Script Generation	Google Gemini 2.0 Flash API (planned)
Media Tools	Placeholder images, text overlays (via CSS)
UX Features	Loading spinner, input validation, dynamic render

Future Enhancements

- Integrate news scraping via NewsAPI.org or Google News RSS.
- Connect with Gemini API or OpenAI for real-time script generation.
- Use FFmpeg or RunwayML to generate actual video files (.mp4).
- Add voice narration using text-to-speech APIs (e.g., Google TTS, ElevenLabs).

Conclusion

GenVideo360 presents a simplified prototype of a powerful automated content generation tool. By combining news scraping, AI script generation, and media synthesis, it lays the foundation for future-ready AI-driven video platforms in media, education, and marketing.

Example