Homework 5

COSC 6590: Special Topics – Application Development with
Large Language Models (Dr. Chandra N Sekharan)

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Project Name – Bliss Builder

Primary Objective is to leverage agentic framework to automate end to end workflow of getting recent trends in ASMR videos, generating them and uploading to YouTube without any manual intervention with modular architecture.

Core Components

Component	Technologies & Tools	Purpose
Trend Fetching	YouTube Data API and PyTrends (Free)	Detect current popular ASMR audio and video trends
Audio Generation	Coqui.ai TTS (20$/month)	Generate whisper-style TTS narration; ASMR sounds (tapping, crinkling)
Visual Selection	Pexels/Pixabay APIs (Free)	Select calming, aesthetically visuals
Video Assembly	FFmpeg and moviepy (Free)	Combine and sync audio + video with transitions, fades
Workflow Automation	N8N (no-code/low-code orchestrator) (24$ / month)	Automate end-to-end pipeline: trend fetching → audio/visual generation → video assembly → publishing
Cloud Storage & Hosting	Google Drive (Free Student version)	Store multimedia assets and final videos
Publishing	YouTube API (google-api-python-client) (Free)	Automate video uploads with metadata and thumbnails based on high viewership timings

Timeline for project completion

Weeks	Milestones
Weeks 1-2	Setup APIs & implement trend fetching scripts to get data from YouTube & Google Trends
Weeks 3-4	Build audio generation pipeline with whisper-style TTS and layering of ASMR sound effects
Week 5	Automate calming visual asset selection and develop the video assembly scripts using FFmpeg and moviePy
Week 6	Integrate modules into N8N workflows for batch orchestration
Week 7	Implement fully automated YouTube upload with metadata on predefined timings where the viewership is high
Week 8	Testing, pilot video releases, initial analytics gathering and project documentation

What to expect:

1. Fully end to end automated agentic architecture
2. Video length 2-5 minutes
3. Daily video uploads
4. Limit the budget as much as possible
5. Soothing ASMR videos

Extension:

1. Real time trend adaptation based on sentiment analysis of news or posts
2. Personalized ASMR content based on user feedback and preferences
3. Adding uniqueness to ASMR content