Answer these questions:

Title of the Project

Project Area (Specialization/Stream)

Abstract

Why This Topic Has Been Chosen

Project Objective

Scope of the Project

### **Contribution of the Project [I am not sure what does this mean]**

### organization **[I am not sure what does this mean]**

Methodology

References

Name and designation of project guide

Title of the Project

AI Personal Assistant for Automated Social Media Content Creation and Scheduling Using n8n

Project Area (Specialization/Stream)

Artificial Intelligence and Workflow Automation  
Under the broader stream of Computer Applications, with a focus on AI integration, media automation, and intelligent assistants.

Abstract

This project introduces an AI-powered personal assistant that automates the entire social media content workflow—from generating post ideas to creating videos/images and publishing them without manual input. Built on the low-code automation platform n8n, the assistant uses advanced language models for content generation, image/video APIs for multimedia creation, and connects to platforms like Telegram, WhatsApp, and Streamlit for user interaction. It integrates reasoning models for complex task execution and employs contextual memory via Retrieval-Augmented Generation (RAG) to maintain personalized and consistent user interactions. The system schedules and publishes content across platforms continuously, enabling content creators—especially motion graphic designers—to focus more on creativity and less on repetitive tasks. The project demonstrates the power of combining AI, automation, and user interface design to transform digital media workflows.

Why This Topic Has Been Chosen

This topic was selected due to the rapid advancement and relevance of AI in automating digital workflows. As a motion graphic designer working in social media content creation, I often face the challenge of producing and posting high-quality content consistently. By leveraging AI automation tools, this project reflects both my professional interests and current industry trends, aiming to simplify and scale the content production process.

Project Objective

* To build an AI assistant capable of generating, scheduling, and publishing social media content using natural language commands.
* To automate content creation (images/videos) using AI generation APIs.
* To handle complex tasks using reasoning models (e.g., chain-of-thought prompting).
* To maintain context using RAG-based memory for personalized interactions.
* To provide users with easy access through Telegram, WhatsApp, and a Streamlit dashboard.

Scope of the Project

This project focuses on building an AI-powered assistant that automates the entire social media content workflow—from idea generation to media creation and posting—without requiring manual intervention. Using user inputs, the assistant can automatically generate content ideas, convert them into videos or images using AI tools, and schedule posts around the clock. The system is powered by n8n for workflow automation and integrates multiple front-end interfaces, including Telegram, WhatsApp, and a web dashboard built with Streamlit, allowing users to interact with the assistant through text or voice. The scope includes media generation, scheduling, cross-platform posting, and user-friendly access, making it highly useful for professionals in content-heavy fields like motion design.

### **Contribution of the Project**

This project introduces an innovative AI-powered assistant that fully automates the social media content lifecycle—from idea generation to multimedia creation and scheduled publishing—based on simple user input. The major contributions include:

* Delivering **hands-free content automation**, enabling users to produce and post content with minimal effort.
* Integrating **advanced reasoning capabilities** through chain-of-thought prompting to manage complex and multi-step user tasks.
* Utilizing **Retrieval-Augmented Generation (RAG)** to maintain contextual memory, allowing the assistant to recall previous conversations and tailor responses accordingly.
* Providing **multi-platform accessibility** through Telegram, WhatsApp, and a Streamlit web interface.
* Leveraging **AI-powered APIs** for real-time image and video generation from text-based ideas.
* Demonstrating a flexible and scalable automation framework using **n8n**, showing how low-code platforms can orchestrate intelligent AI workflows.

Organization  
The project report is organized into the following sections:

1. Introduction – Provides background and context for the project.
2. Objectives – Clearly defines the aims and goals of the study.
3. Literature Review – Summarizes existing work and technologies in AI and workflow automation.
4. Methodology – Explains the tools, platforms, and design used to build the system.
5. Results and Discussion – Details the outcomes, observations, and performance analysis.
6. Recommendations and Conclusion – Highlights key takeaways, limitations, and future improvements.
7. Bibliography – Lists all references used in APA format.

The methodology used in this project follows a system design and implementation approach:

The project follows a structured, implementation-driven methodology consisting of the following phases:

1- Requirement Analysis: Identifying the inefficiencies in manual content creation and defining the need for a fully automated assistant tailored to motion graphics and social media workflows.

2- System Architecture Design: Designing an automation pipeline using n8n to coordinate between various tasks such as content creation, memory retrieval, and social media publishing.

3- AI Integration:

* Implementing reasoning models using chain-of-thought prompting to deconstruct and process complex commands.
* Applying RAG (Retrieval-Augmented Generation) enables the system to fetch relevant historical data for contextual and consistent output.

4- API Utilization: Connecting with third-party APIs like OpenAI for text, Stable Diffusion for image generation, and Synthesia for video generation to produce rich media content dynamically.

5- Workflow Development in n8n: Building reusable workflows that handle various tasks, from assissting the user in daily tasks and queries, to generating and posting social media content across platforms.

6- Front-End Interface Development: Creating user interfaces through Telegram, WhatsApp, and a custom dashboard built with Streamlit for real-time interaction and system control.

7- System Testing and Evaluation: Validating the assistant’s functionality by simulating content creation

This methodology ensures a cohesive blend of AI, automation, and UX design, resulting in a robust and Intelligent system for social media automation.