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WhatsApp Automation and AI Agent

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Abstract: *In the modern digital communication era, businesses increasingly rely on instant messaging platforms to interact with customers efficiently. WhatsApp, being one of the most widely used messaging applications, has become a crucial medium for customer engagement. However, handling a large volume of messages manually leads to delayed responses, increased operational costs, and limited service availability. To address these challenges, this project proposes an intelligent WhatsApp Automation and AI Agent system that enables automated, real-time, and context-aware communication.*

The proposed system integrates WhatsApp Business Cloud API with n8n workflow automation and a Google Gemini Large Language Model (LLM) to create an AI-driven conversational agent. Incoming messages are captured through webhooks, processed using Python for text cleaning and logical decision-making, and analyzed by the AI agent to understand user intent and generate human-like responses. The system supports automated replies, FAQ handling, order processing, and data storage using spreadsheet-based memory, ensuring scalability and ease of maintenance. The implementation demonstrates improved response time, reduced manual intervention, and enhanced customer experience, making it suitable for real-world business applications requiring reliable and intelligent WhatsApp-based automation..

Keywords*:* WhatsApp Automation, AI Agent, Google Gemini LLM, n8n Workflow Automation, WhatsApp Business API, Artificial Intelligence, Chatbot System, Python Automation

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