

## Lab Manual: Part 1 - Recent Trends in AI and Applications of AI (n8n)

### Objectives of the Lab:

1. **Understand n8n Interface:** Learn how to navigate the n8n platform, understand its interface, and familiarize yourself with basic tools like triggers, actions, and nodes.
2. **Integrate AI with n8n:** Gain hands-on experience in integrating an AI agent (such as Gemini) with n8n to handle text-based interactions and automate responses.
3. **Automate Restaurant Order System:** Build a practical automation workflow that processes restaurant orders through WhatsApp, interacts with customers, and stores orders in a Google Sheet.
4. **Enhance Automation Skills:** Explore the power of no-code automation and AI to streamline business processes and increase efficiency in real-world applications

### 1. Introduction to n8n Tool and Setup

n8n is a recent trend in automation due to its open-source, no-code platform that simplifies the integration of various applications and services. It enables users to automate complex workflows, including AI-powered tasks, without needing extensive programming knowledge, making it accessible for businesses and individuals seeking efficiency and scalability.

- **Interface Overview:**

- **Dashboard:** The n8n dashboard allows you to create workflows using nodes that represent actions or events.
- **Workflows:** These are automated tasks, which can be connected in a sequence using triggers and actions.
- **Triggers:** Start workflows based on certain events like receiving a message or a time schedule.
- **Actions:** Perform tasks such as sending messages, interacting with databases, and more.
- **Nodes:** These are the building blocks of the workflow. You connect them to perform tasks, such as sending WhatsApp messages or interacting with AI models.

- **Create an Account in n8n:**

- Go to the n8n website and click on "Get Started" to create an account.
- After setting up, you'll have a workspace where you can create new workflows.

### 2. Adding AI Agents (Gemini AI Integration)

- **What is an AI Agent?**

AI agents are automated entities that can interact with users based on defined logic. In this lab, we will connect Gemini's language model to make the AI agent respond to user input.

- **Setup:**

- **Trigger Setup:**

- Use the "On Chat Message" trigger to start the workflow when a message is received.

- For example, the system will respond when a WhatsApp message is received asking about restaurant orders.
- **Connecting Gemini AI:**
  - Use the Gemini AI model for text generation.
  - You can connect the Gemini model to your workflow by setting up an API key and specifying the kind of responses you want from it (e.g., restaurant menu, order inquiries).

### 3. Hands-on: Restaurant Order Taker via WhatsApp

- **Workflow Overview:**
  - **Start with a WhatsApp Trigger:**
    - Use n8n's WhatsApp node to listen for messages.
  - **Ask for Details:**
    - Use the AI model to respond to customer queries, such as asking for the menu or stock availability.
  - **Order Handling:**
    - If the customer orders something (e.g., "I want chow mein"), the AI asks for confirmation and stores the order in a database (like Google Sheets).
    - The system will confirm and provide a response based on the availability of the item.
- **Add Google Sheets for Storing Orders:**
  - **Database Setup:** Create a Google Sheet where the orders will be stored.
  - **Integration:** Link Google Sheets with n8n to automatically add orders when a customer places one.

### 4. Testing the System

- **Chatbot Interaction:**
  - Test by sending a message to the WhatsApp number linked with the system, and ensure the AI provides correct responses, confirming orders, and storing them in the database.

### 5. Task:

- **Expanding the System:** Add the functionality in the App so that it actually responds to the WhatsApp users individually.

By following the steps outlined, you'll be able to create a functional WhatsApp automation bot using n8n integrated with AI models like Gemini.