

# AI Agents Using n8 n for Various Scenarios

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# CONTENTS

- . Introduction
- . Tools and Technologies Used
- . Use Case Example
- . Challenges Faced
- . Conclusion
- . Objectives
- . Workflow Design
- . Benefits
- . Future Enhancements
- . Video Of Functioning:

01

## Introduction

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# Introduction

In the era of rapid digital communication, automating routine messaging tasks can significantly enhance productivity and reduce human error. This project demonstrates the development of an intelligent AI-powered agent built within the n n workflow automation tool. The core idea revolves around using natural language prompts to instruct an AI assistant to send context-aware emails automatically via Gmail. By combining Chat Message Trigger, Google Gemini AI, Buffer Memory, and Gmail tools, the system enables users to compose and dispatch messages with minimal input and maximum contextual understanding.

02

## Objectives

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# Objectives



## AI Agent Creation

To create an AI agent capable of understanding natural language commands.



## Gmail Communication

To enable seamless communication via Gmail based on user prompts.



## Automated Messaging

To automate message sending with minimal manual intervention.



## Context Maintenance

To maintain context during the conversation using memory tools.



## User Productivity

To enhance user productivity in routine email communication tasks.

03

## Tools and Technologies Used

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# Tools and Technologies Used

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## Workflow Automation Tool

·n n is an open-source workflow automation tool that enables users to connect various services and applications through visual workflows.

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## Trigger

·This module acts as the entry point of the workflow. It listens for incoming user prompts and initiates the email sending process.

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## AI Module

·The AI Agent module within n n is responsible for parsing and interpreting the natural language command. It extracts relevant entities like recipient name, email address, and message content.

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## Natural Language Model

·Google's Gemini model is employed for natural language understanding and generation. It allows the agent to interpret unstructured text prompts and generate appropriate outputs.

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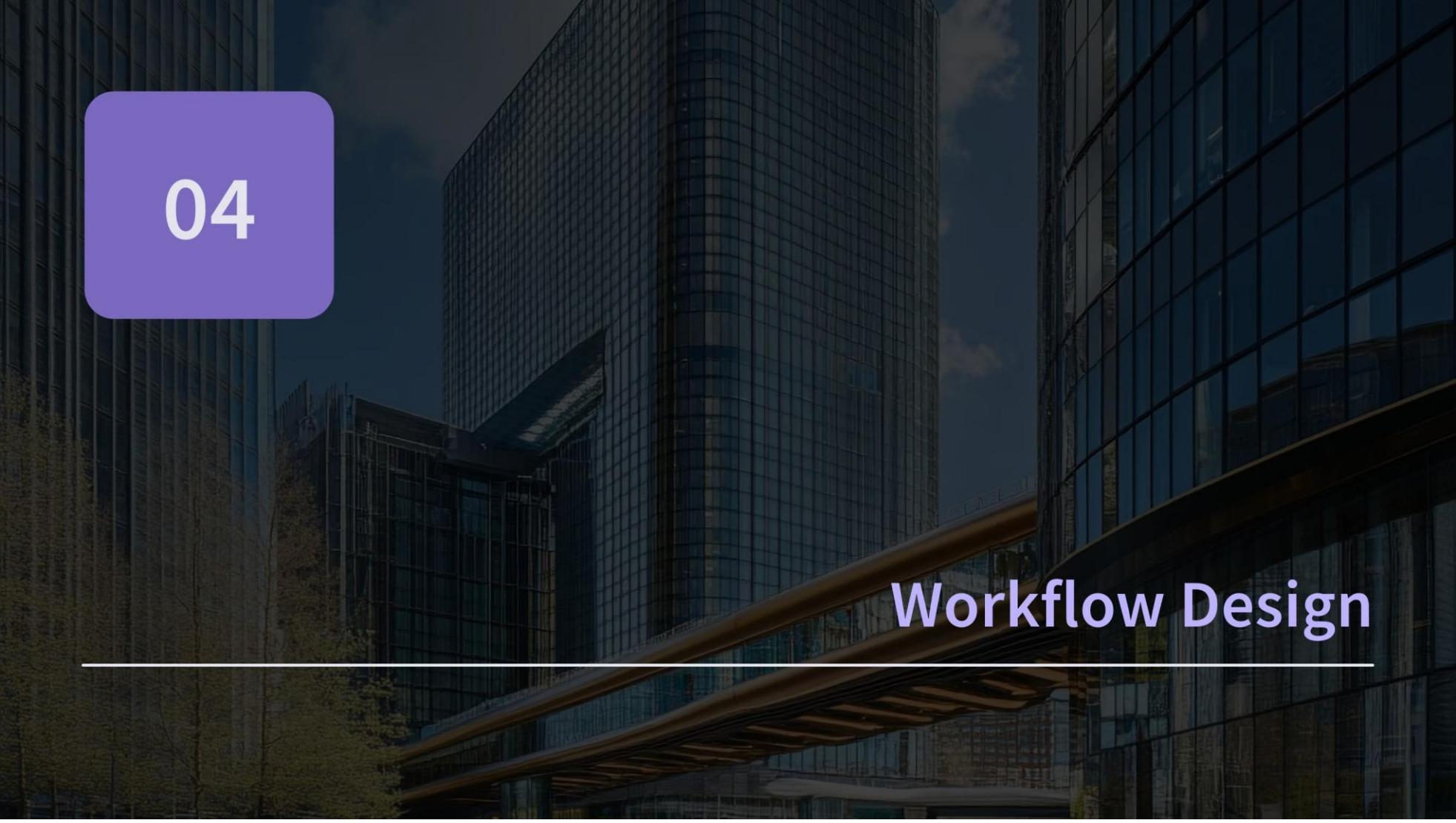
## Memory Storage

·Buffer Memory is used to store conversational context, ensuring that the AI can understand ongoing dialogues and maintain coherence across multiple steps in the workflow.

6

## Email Sending

·This module sends the finalized message to the intended recipient through the Gmail API, completing the task.

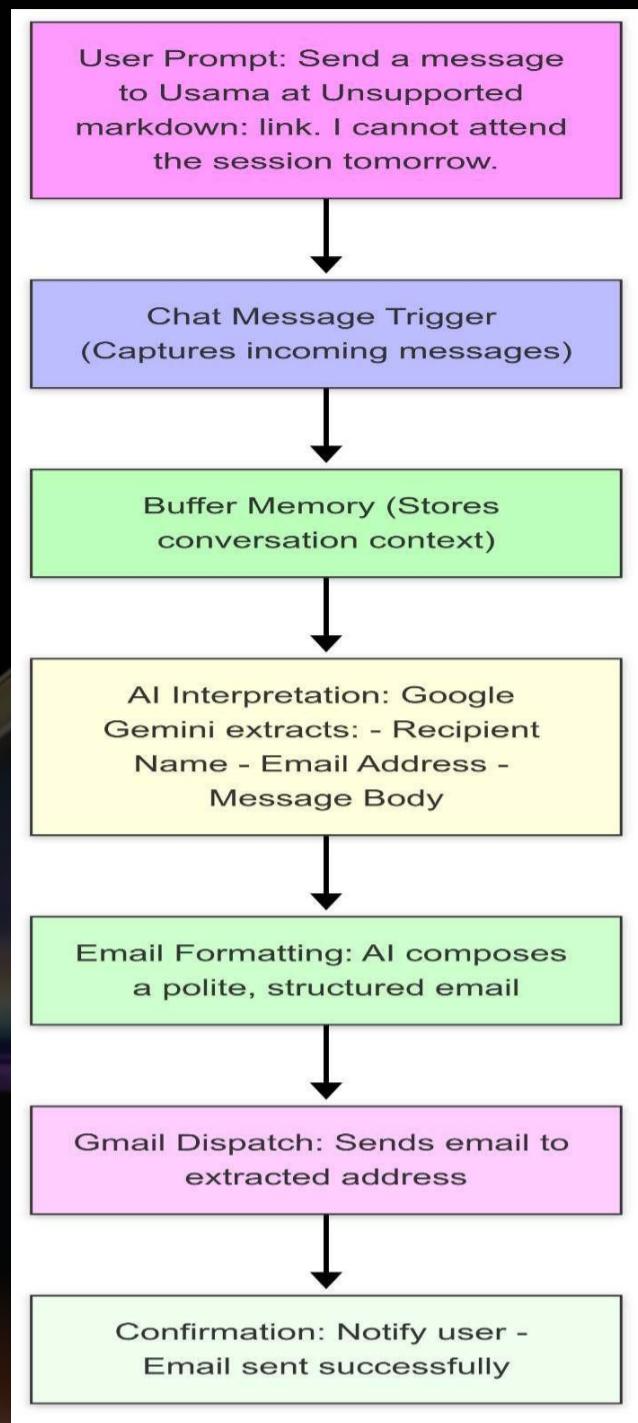
The background is a photograph of a modern urban environment. It features several skyscrapers with glass and steel facades. A prominent curved bridge or walkway is visible in the lower right foreground, supported by a series of glowing yellow lights. The sky is dark, suggesting it's either nighttime or the photo was taken during twilight.

04

## Workflow Design

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# Workflow Design



The entire system is designed to be modular and event-driven. The workflow proceeds as follows:

**User Prompt:** The user enters a message like:\

“Hamza Sent a message to Usama at usamanazir@gmail.com”\

Followed by another message like:\

“I cannot attend the session tomorrow.”

**Trigger:** The Chat Message Trigger captures these messages and activates the workflow.

**Context Capture:** The Buffer Memory stores the conversation history, helping the AI understand the prompt as a compound command rather than isolated texts.

**AI Interpretation:** The Google Gemini model analyzes the prompt and extracts necessary entities:

Recipient Name

Email Address

Message Body

**Email Formatting:** The AI Agent composes a structured and polite email based on the provided content.

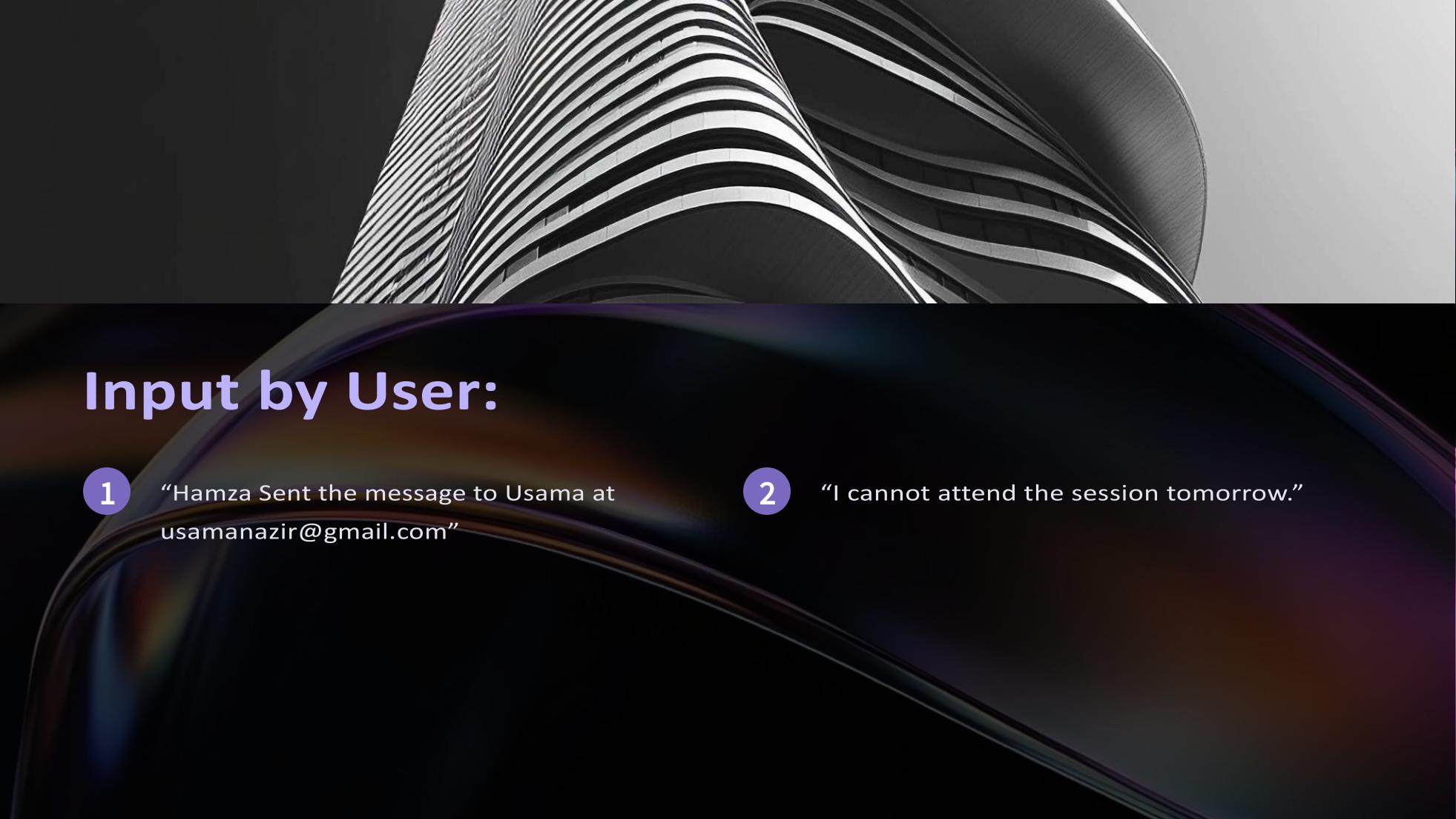
**Gmail Dispatch:** The Gmail tool sends the message to the specified address.

**Confirmation:** An optional step where the user is notified that the email was successfully sent.

05

## Use Case Example

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# Input by User:

1

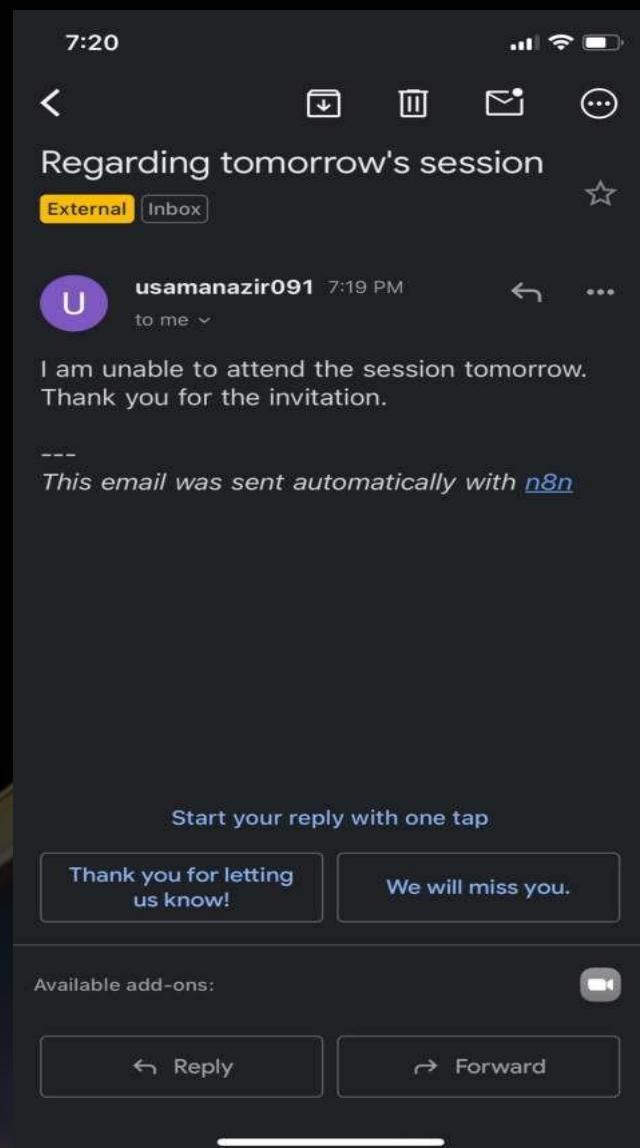
"Hamza Sent the message to Usama at  
usamanazir@gmail.com"

2

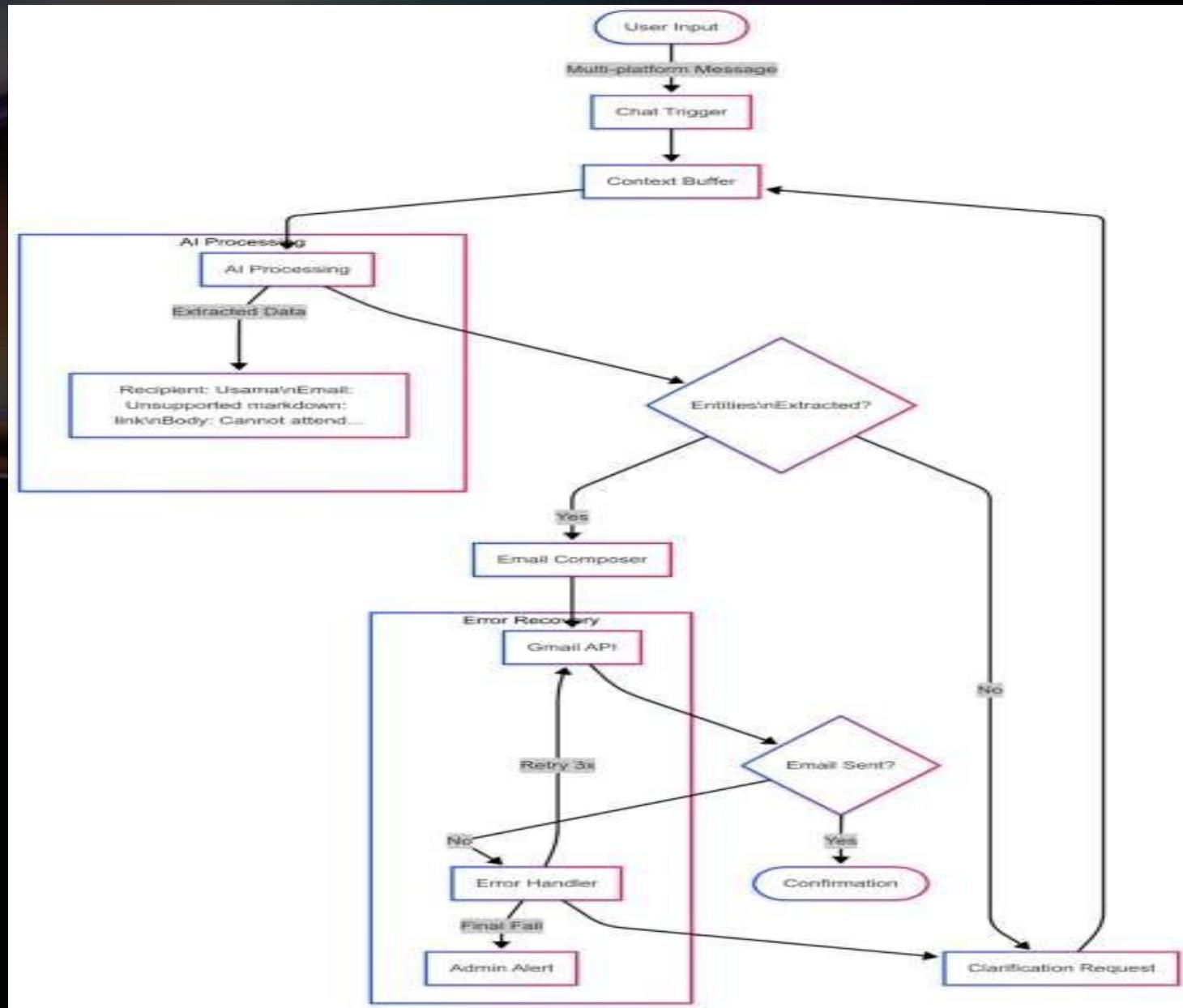
"I cannot attend the session tomorrow."

# AI Output:

## Screenshot:



## Working Process (Flow chart):



To: usamanazir@gmail.com

Subject: Apology for Session Absence

Message:\

Dear Usama,\

I hope you're doing well. I wanted to inform you that I won't be able to attend the session scheduled for tomorrow.\

Best regards,\

Hamza Abdul Karim

Result: Email successfully sent via Gmail.

06

Benefits

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# Benefits

## Natural Language Interface

No need for technical command structures.

## Personalization

Messages retain human-like tone and empathy.

## Scalable

Can be extended to include attachments, multiple recipients, or scheduled delivery.

## Time-saving

Automates repetitive emailing tasks.

## Memory-aware

Supports multi-turn interactions.

07

## Challenges Faced

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# Challenges Faced

## Entity Extraction

Accuracy:  
Initially, the AI occasionally misinterpreted input due to ambiguous phrasing.

## Context Maintenance

Ensuring that multiple inputs are correctly tied together required careful tuning of buffer memory.

## Email Formatting

Making emails both grammatically correct and contextually appropriate was an iterative challenge.

08

## Future Enhancements

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# Future Enhancements

1

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3

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## Voice Input

Integrate with voice assistants or speech-to-text systems for even faster command input.

## Calendar Integration

Automatically schedule meetings or send reminders based on the user's calendar.

## Feedback Loop

Add a user feedback mechanism to continuously improve AI responses.

## Multi-language Support

Enable message composition and understanding in multiple languages.

09

Conclusion

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# Conclusion

This project successfully demonstrates the power of combining workflow automation with advanced AI models to solve real-world productivity issues. By enabling users to send emails through simple, natural commands, the system eliminates the friction in communication and offers a more intuitive way to interact with digital tools. With further enhancements, such an AI agent can evolve into a comprehensive virtual assistant capable of managing complex communication tasks.

10

**Video Of Functioning:**

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# Video Of Functioning:



Project\_demo.mp4

A dark, semi-transparent globe of Earth is shown against a black background. The globe is covered in numerous glowing yellow and orange points representing city lights, with more concentrated clusters appearing over continents like North America, Europe, and Asia. Overlaid on this globe is a network of thin, light-colored lines forming a grid-like pattern that connects various points across the planet's surface.

Thank You