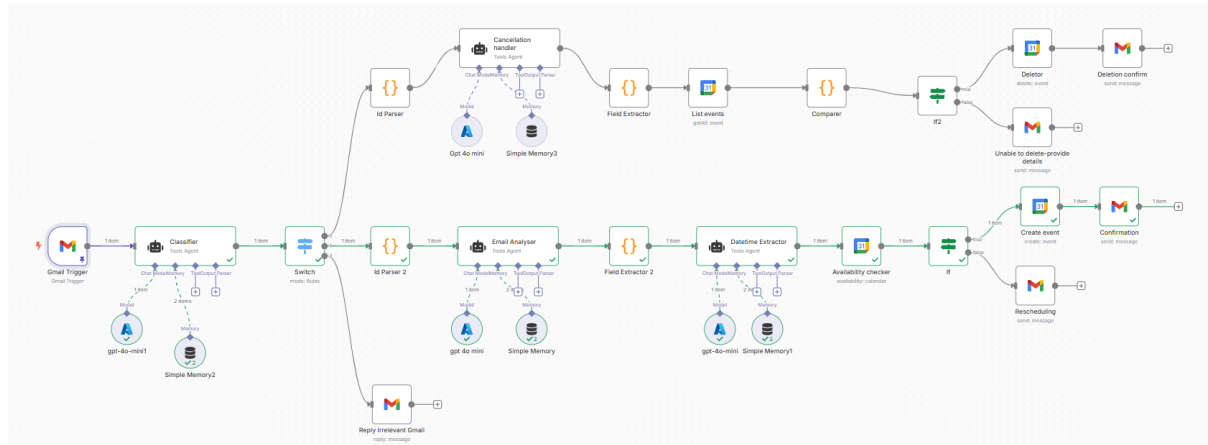# Overview of Agentic Workflow:

Agentic AI Email Handler System for Healthcare Appointment Scheduling (Clinician Site)

This fantastic n8n workflow implements an automated email processing system designed specifically for healthcare scheduling management. The system intelligently categorizes incoming emails into three distinct pathways (cancellation requests, booking requests, and non-relevant communications) and processes each according to optimized protocols.

 In this agentic workflow, we hope that it's crystal clear that throughout the entire process, no human intervention or analysis are needed, but Large Language Model(LLM) will act as the core(brain) to smoothen the process, allowing decision making purely based on the LLM itself, with extremely high accuracy in analysis. The workflow was strengthened with many tools, such as the ability to interact with code (in JavaScript), Gmail and Google Calendar, to make full automation realizable.

 Its implementation addresses one of the most time-consuming aspects of practice management by eliminating the need for manual email monitoring and calendar adjustments. By leveraging intelligent automation capabilities, the workflow drastically reduces response times for patients while simultaneously minimizing scheduling errors and double-bookings.

General workflow

This agentic AI workflow is triggered by new emails from Gmail, while there will be real-time fetching of emails every minute. Below shown the incoming mail from patient to a healthcare worker/clinic/hospital(our system can cope with all of these)

☐ ☆	yikeith choon	**Appointment with Patient: Choon Yi Keith** - Dear Dr Medical Office, I hope this message finds you well. I would like to request an ap...	**5:37 PM**
☐ ☆	me	Appointment Booking Request: Mack Yong - Dear Dr Medical Office, I've been experiencing mild cough and flu symptoms for the past ...	2:57 PM
☐ ☆	me	Appointment Booking Request: Nurul Aisyah - Dear Dr Medical Office, I would like to schedule a routine check-up appointment for low...	2:55 PM
☐ ☆	me	Appointment Booking Request: John Lim - Dear Dr Medical Office, I hope this message finds you well. I'm due for a refill of my hyperte...	11:50 AM
☐ ☆	me	Appoint Booking Request: Aishah Rahman - Dear Dr Medical Office, I've had a persistent cough for over 10 days, particularly botherso...	11:48 AM
☐ ☆	me	Appointment Booking Request: Lily Wong - Dear Dr Medical Office, I've been experiencing recurring migraines and would like to sched...	11:47 AM
☐ ☆	me	Appointment Booking Request: Chen Wei - Dear Dr Medical Office, I've had a persistent cough for two weeks and would like to schedu...	11:35 AM
☐ ☆	me	Appointment Booking Request: Siti Zulaikah - Dear Dr Medical Office, I'd like to schedule a routine check-up at your earliest convenien...	11:34 AM
☐ ☆	me	Appointment Booking Request: Arvind Kumar - Dear Dr Medical Office, I've had a high fever (over 39°C) with chills and body aches for ...	11:32 AM
☐ ☆	me	Appointment Booking Request: John Smith - Dear Dr Medical Office, I've been experiencing severe headaches and dizziness for the p...	11:30 AM
☐ ☆	me	Appointment Booking Request: Markues Ng - Hi Dr Medical Office, I've been dealing with ankle pain for over a week now, and I'd like to...	11:27 AM
☐ ☆	me	Appointment Booking Request: Aishah Rahman - Dear Dr Medical Office, Hi, my name is Aishah Rahman and I would like to book an ap...	11:21 AM

Below, you can see that our **Gmail trigger node** are fetching the exactly same email to its site, preparing to feed this email into the entire workflow

Gmail Classifier: an LLM that classifies gmail into different types, either "Cancellation Email", "Booking Email" or "Irrelevant Email", this helps our workflow to further branches out to different procedures based on the nature of the incoming email. Example output shown:
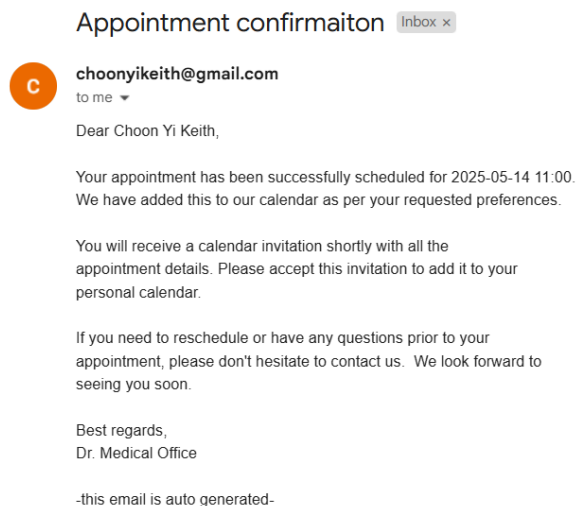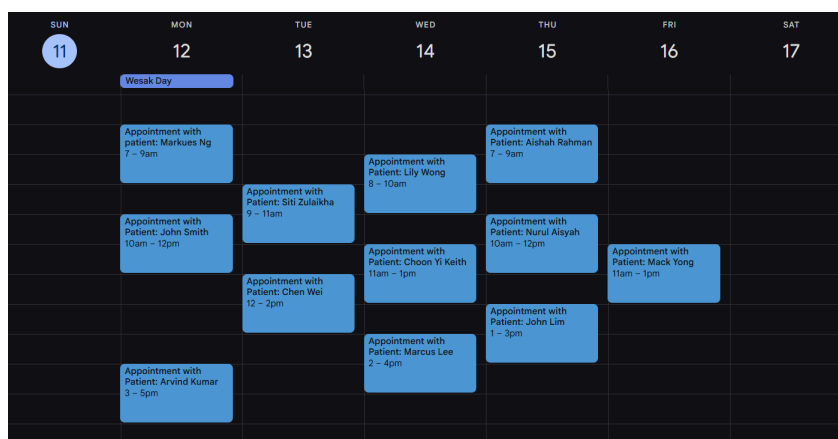
Appointment Booking Automation

The middle workflow branch streamlines the appointment scheduling process:

- Analyzes booking requests to extract patient information, requested appointment times, and medical concerns
- Performs real-time availability verification against the clinician's schedule
- When requested times are unavailable, the system:
    - Automatically identifies alternative available time slots
    - Evaluates the urgency of the patient's condition based on symptom analysis
    - Generates personalized response emails with scheduling alternatives
    - Provides urgent care recommendations when appropriate, including referrals to emergency services based on symptom severity

When the appointment request is **successful**, a **confirmation email** will be sent to the patient site:

Appointment confirmaiton Inbox ×

choonyikeith@gmail.com
to me ▾

Dear Choon Yi Keith,

Your appointment has been successfully scheduled for 2025-05-14 11:00. We have added this to our calendar as per your requested preferences.

You will receive a calendar invitation shortly with all the appointment details. Please accept this invitation to add it to your personal calendar.

If you need to reschedule or have any questions prior to your appointment, please don't hesitate to contact us. We look forward to seeing you soon.

Best regards,
Dr. Medical Office

-this email is auto generated-

(choonyikeith@gmail.com is the clinician site, and this mail is sent to patient Choon Yi Keith)

The slot Wed 11am-1pm is added for patient Choon Yi Keith in Google Calendar.

When the appointment request is **unsuccessful** due to **slot overlap** in the clinician's Google Calendar, a rescheduling email is sent to patient:

Cancellation Management Pipeline

The upper workflow branch efficiently handles appointment cancellations through the following process:

- Parses incoming cancellation emails to extract critical patient identifiers and appointment details
- Utilizes field extraction and comparison algorithms to locate the corresponding calendar entry
- Automatically removes the cancelled appointment from the clinician's Google Calendar
- Sends confirmation emails to patients upon successful cancellation
- Implements exception handling for incomplete information, promptly requesting additional details from patients when necessary
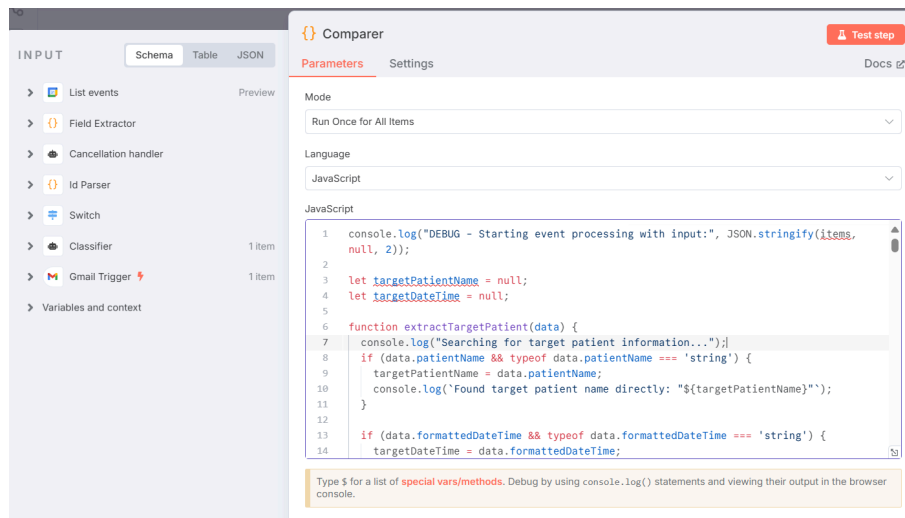
This comparer node compares the key fields(such as patient name and appointmentDateTime) to all Google Calendar Activity and find the matching events in clinician Google Calendar, and delete it, and a deletion confirmation will be sent to patient.

And if we couldn't find similar patient name with that specified time slot, we'll send an email to the patient to request for more details, to allow in depth analysation

Also, the event will be automatically deleted in the Google Calendar.

Administrative Efficiency Management

The lower workflow branch handles non-relevant communications:

- Classifies emails that fall outside scheduling parameters
- Generates appropriate response templates clarifying the proper channels for scheduling and cancellations
- Maintains professional communication standards while reducing administrative overhead

This intelligent automation system significantly enhances clinical efficiency by eliminating manual scheduling management, reducing administrative burden, and ensuring prompt patient communication—ultimately allowing healthcare providers to focus more time on patient care rather than administrative tasks.