

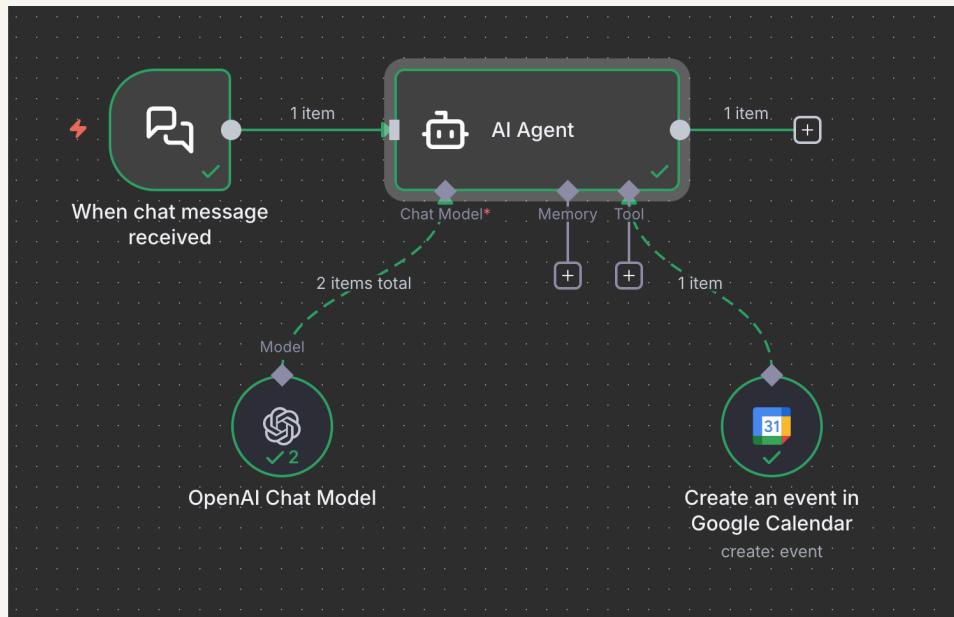


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Building an AI Workflow



Yukti Dave





Yukti Dave

NextWork Student

nextwork.org

Introducing Today's Project!

In this project, I will demonstrate how to build an AI workflow using n8n. Simply send a text to the workflow, and it will schedule events in my Google Calendar. I am doing this project to learn how to automate tasks with AI.

Tools and Techniques

Services I used were n8n, OpenAI, Google Calendar. Key concepts and skills I learnt were how to set up an AI workflow, workflows vs agents, credentials, JSON expressions and analyzing logs from an AI agent to troubleshoot errors.

Project reflection

This project took me approximately three hours. The most challenging part was troubleshooting using fixed vs expressions in system message was an important detail). It was most rewarding to see the difference a tailored system message makes.

This project was useful for getting and introduction to AI automations, workflows and eventually building an AI agent. This project met my goals because I got to set up a working prototype by the end.

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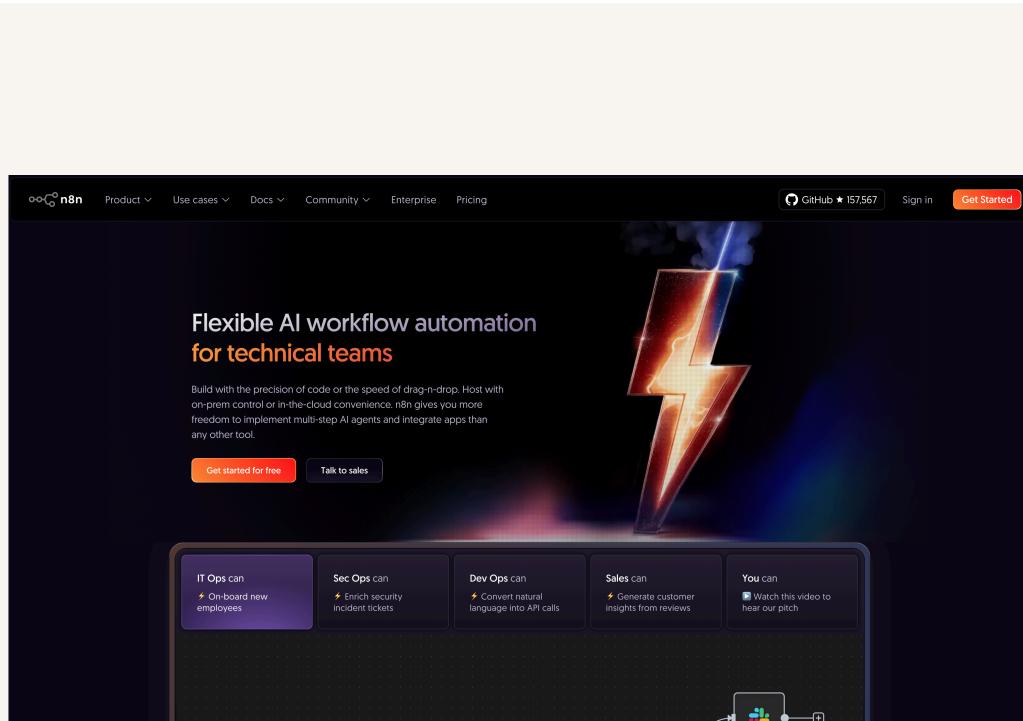
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Exploring n8n

I'm using n8n in this project to build the workflow. Workflows are sequences of actions that completes a task. You can involve AI in a workflow by using AI to automate some of the decisions making / actions e.g. generative AI to draft email replies.

I signed up for a free trial for n8n, which includes 14 days of access to n8n and the ability to create up to 5 workflows. I don't need to enter credit card details to start the trial, so I won't be charged.



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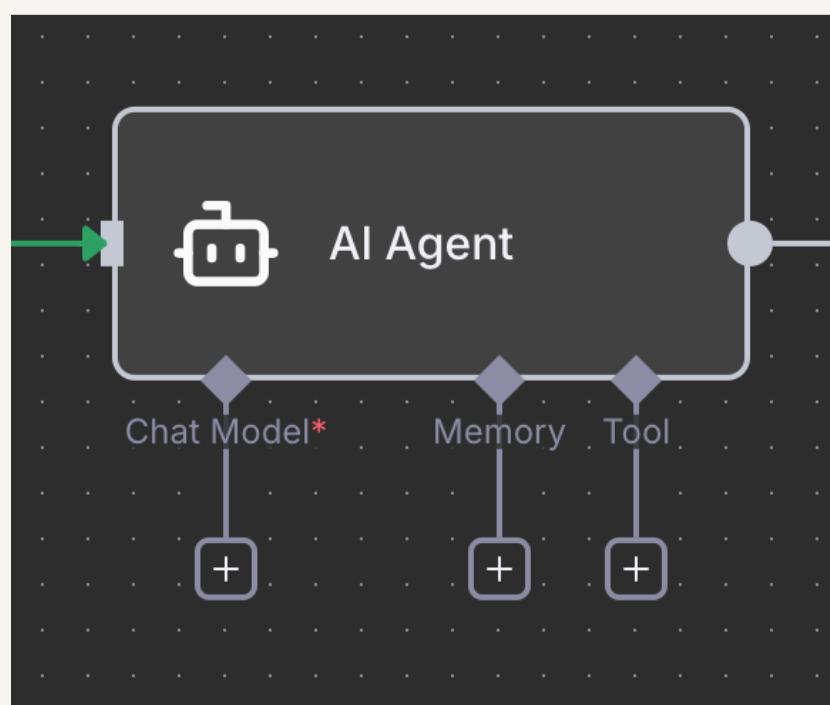
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Starting an AI Workflow

To set up a workflow, I first configured a trigger, which means the action or scheduled time that kicks off a workflow (make it run). My trigger is a chat message. Other options include scheduled time (everyday at 8 am) or a manual trigger.

I connected my trigger with an AI agent node. AI Agents are autonomous systems that can decide on tasks and carry out actions WITHOUT triggers or predefined steps. But, in this project, I am building a workflow which does require trigger / steps.





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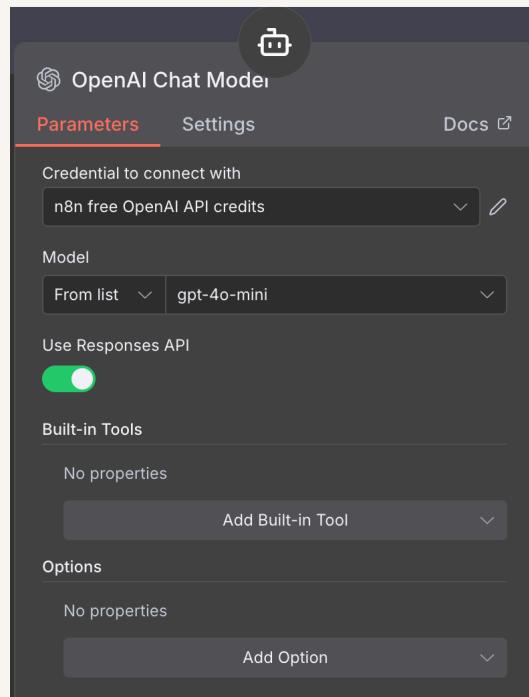
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Integrating ChatGPT

An AI workflow can be broken into three key components, which are Chat Model (i.e. the brain of the agent), Memory (i.e. storing past interaction and data collected) and Tools (i.e. software and code to help carry out tasks).

My workflow's chat model uses OpenAI's services. Usually, connecting with OpenAI requires opening an OpenAI account and adding credits into your wallet. But, I could connect with OpenAI for FREE by claiming 100 API credits offered in n8n.





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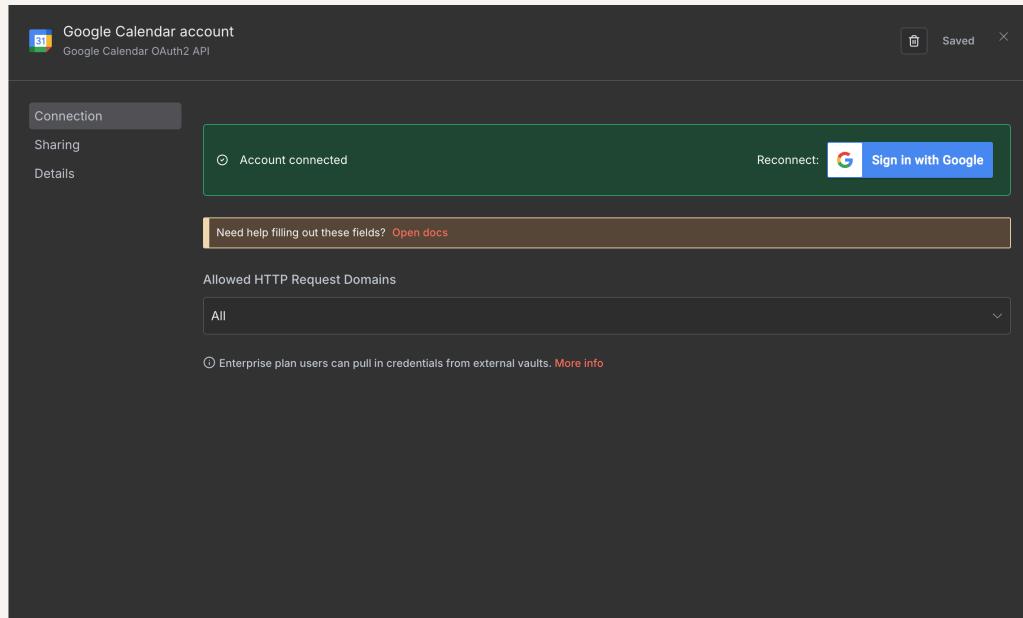
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Integrating Google Calendar

In this workflow, the tool is Google Calendar because I will need to connect the AI agent with the API (i.e. Google Calendar Tool) that actually creates new events in my calendar. You can think of the tool as the muscle that actually does the job.

To connect with Google Calendar, you have to allow n8n access to creating and editing events and entire calendars in my account. For security best practice, it's important to delete those credentials when you no longer need it for this workflow.





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Testing My Workflow

I tested my AI workflow by asking it to book a meeting for tomorrow at 10 am. The response was that it started booking an event for now which is an error because it is at the wrong time. It should book the event at the right time for the next day.

To troubleshoot errors, you can investigate the AI agent's logs. I observed that the logs for the Calendar tool showcased inputs but with wrong values, which means it's not getting any information around the proper start and end time for the event.

book a meeting for me at 10am tomorrow

I have successfully booked a meeting for you at 10 AM tomorrow. You can view the event [here](#).



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JSON Expressions

I decided to troubleshoot by reviewing the Calendar tool's setup. I noticed an error in the tool's start and end time configuration. By default, it takes in the current time as the start time - this ignores any input/information from the chat model

I updated the start and end times in the Calendar tool to JSON references for information the AI model will gather. For example, instead of current time, the start time is now `{{ $fromAI('start_time') }}`, which the AI model will fill for me





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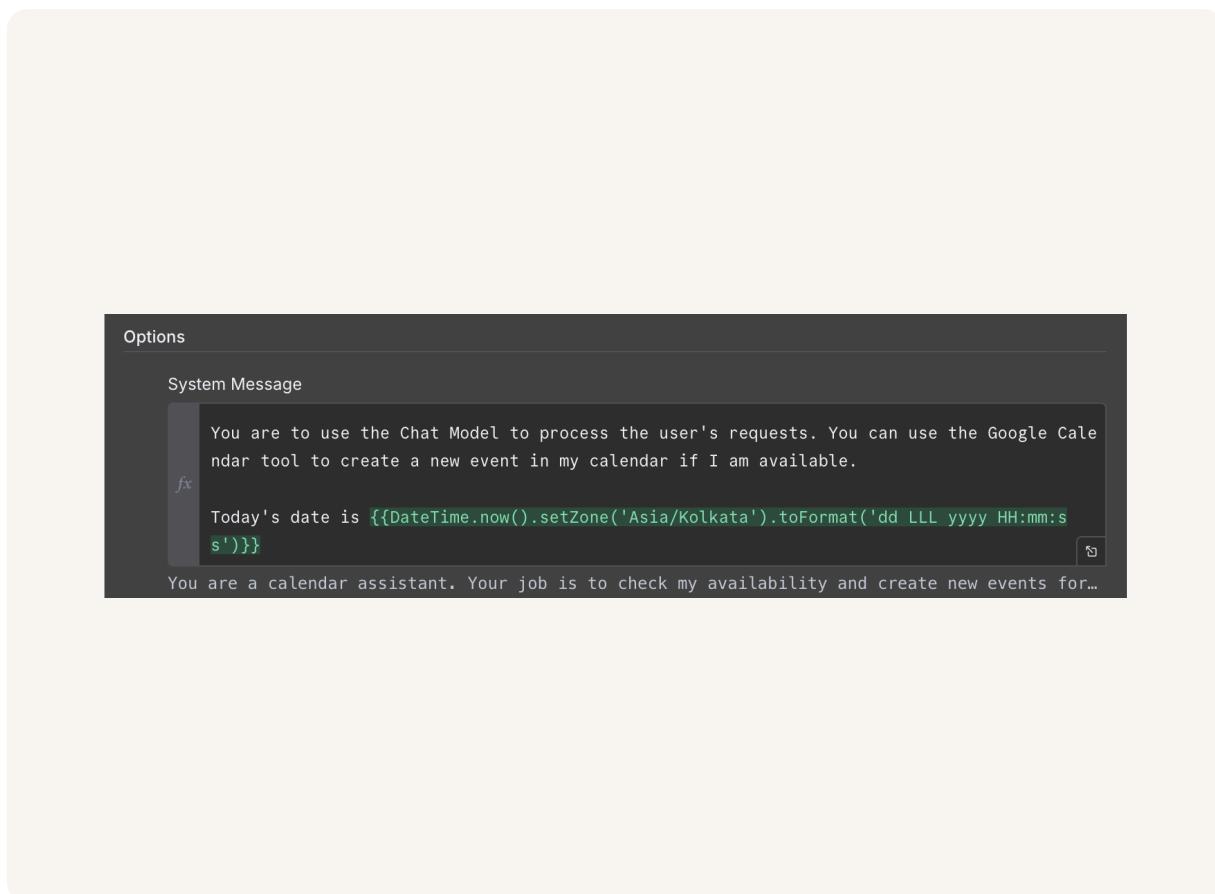
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System Messages

On my second test, my workflow successfully created an event and took an input from the AI chat model but it still made an error in scheduling the right date. This was because the chat model is passing the wrong dates to the Calendar tool.

This time, I tried to troubleshoot the error by writing a system message, which is a prompt that gets sent to the AI agent before the conversation starts. The prompt gives the agent instructions on what to do and information on the current date.





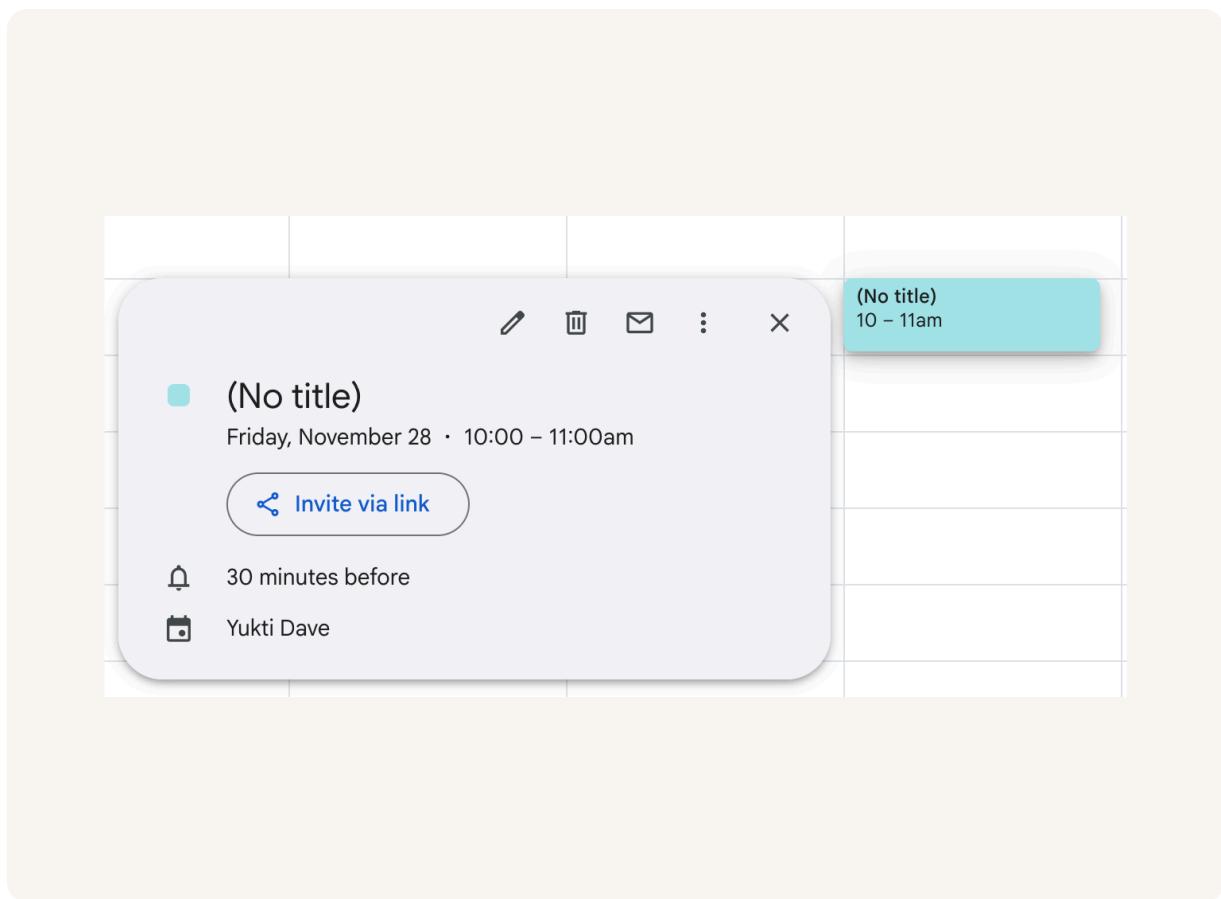
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Success!

On my final test, a new event was scheduled at the right time because the system message was set as an expression (and not fixed). This means the AI agent will get accurate information around today's date, calculated automatically at every message.





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