

Inventory Management AI System

A no-code/low-code AI-powered **Inventory Management System** built using [n8n](#), Google Gemini AI, and Google Sheets as a live database. This system leverages AI automation to simplify and streamline inventory operations like reading items, updating inventory, and deleting data—all via natural language commands.

Tech Stack

- **n8n** – No-code workflow automation platform
- **Google Gemini API** – AI language model for natural conversation
- **Google Sheets** – Live inventory database
- **Simple Memory Node** – Maintains context across interactions

Features

- **Chat-Triggered Workflow**
Starts when a user sends a message (e.g., “Update stock for Item A”).
- **AI Agent Node**
Uses Google Gemini to interpret the message and decide what action to take.
- **Simple Memory**
Stores context to enhance multi-turn conversation support.
- **Inventory Operations via Google Sheets**
 - Reading Items: View current inventory
 - Update Inventory: Append or update items
 - Delete Rows: Remove inventory items
 - Delete Columns: Clear specific columns

How It Works

1. **Trigger:** The workflow starts when a chat message is received.
2. **AI Processing:** The message is passed to the Gemini model via the AI Agent node.
3. **Context Memory:** A Simple Memory node retains previous conversation context if needed.
4. **Action Execution:** Based on the intent, the workflow interacts with the Google Sheet to:
 - Fetch inventory data
 - Update quantities
 - Delete entries or columns

Workflow Preview:

Before updating the stock:

PersonalInventory Management AI SystemAdd tag

EditorExecutionsEvaluations

ActiveShareSaved

When chat message received

1 Item

AI Agent

1 Item

Google Gemini Chat Model

2 Items

Simple Memory

2 Items

Reading Items

1 Item

Update Inventory

appendOrUpdate sheet

Delete Rows

delete sheet

Delete Columns

delete sheet

Hide chat

Chat

Session: Ocda7...

hello

hello! How can I help you today?

I want to know stock of Apples

There are 15 Apples in stock.

Logs

Clear execution

AI Agent

Success in 4.662s ~608 Tokens

When chat message received

AI Agent

Success in 4.662s ~608 Tokens

INPUT

sessionid: Ocda7bc8b60448f593c676988ec777a8

action: sendMessage

chatinput: I want to know stock of Apples

n8n_testFile Edit View Insert Format Data Tools Extensions Help

100%\$%0.00123Calibri11B

A1	Item Name												
	A	B	C	D	E	F	G	H	I	J	K	L	
1	Item Name	Quantity in Stock											
2	Apples	15											
3	Bananas	5											
4	Carrots	9											
5	Bread	15											
6	Milk	5											
7	Eggs (dozen)	5											
8	Chicken Breast	20											
9	Rice (1 lb bag)	30											
10	Pasta (1 lb)	40											
11	Cereal	30											
12	Orange Juice	6											
13	Coffee (1 lb)	6											
14	Sugar (2 lb)	15											
15	Flour (2 lb)	18											
16	Salt (1 lb)	10											
17	Pepper (4 oz)	15											
18	Olive Oil (1 L)	10											
19	Ketchup	7											
20	Canned Beans	30											
21	Soup (can)	20											
22	Water Bottles	50											
23													
24													

After updating the stock:

PersonalInventory Management AI SystemAdd tag

EditorExecutionsEvaluations

ActiveShareSaved

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When chat message received

1 Item

AI Agent

1 Item

Google Gemini Chat Model

2 Items

Simple Memory

2 Items

Reading Items

1 Item

Update Inventory

appendOrUpdate sheet

Delete Rows

delete sheet

Delete Columns

delete sheet

Hide chat

Chat

Session: Ocda7...

I want to know stock of Apples

There are 15 Apples in stock.

Update it to 50

OK, I've updated the stock of Apples to 50. Anything else?

Type a message, or press 'up' arrow for previous one.

Logs

Clear execution

AI Agent

Success in 4.879s ~302 Tokens

Simple Memory

Google Gemini Chat Mo...

Update Inventory

Google Gemini Chat Mo...

Simple Memory

When chat message received

AI Agent

Success in 4.879s ~302 Tokens

INPUT

sessionid: Ocda7bc8b60448f593c676988ec777a8

action: sendMessage

chatinput: Update it to 50

OUTPUT

1 Item

Node executed successfully

[illegible]

Example Use Cases

- “What’s the current stock for item X?”
- “Update quantity of item Y to 25”
- “Remove item Z from the inventory”
- “Clear the expired column”

Future Enhancements

- Integration with external databases (e.g., Firebase or PostgreSQL)
- Daily inventory summary emails
- Voice command support
- Role-based access

Requirements

- n8n account or local setup
- Google Gemini API Key
- Google Sheet with predefined structure