n8n
WORKFLOW

+

SAP Business One

Linkedin.com/in/tonekaboni

Automate SAP Business One with n8n and AI-Powered Reporting

Amirhossein Tonekaboni

Automating SAP Business One with n8n, Google Sheets, and Telegram

Overview

This tutorial guides you through creating an automated workflow to connect SAP Business One with n8n, Google Sheets, and Telegram. By the end, you will achieve:

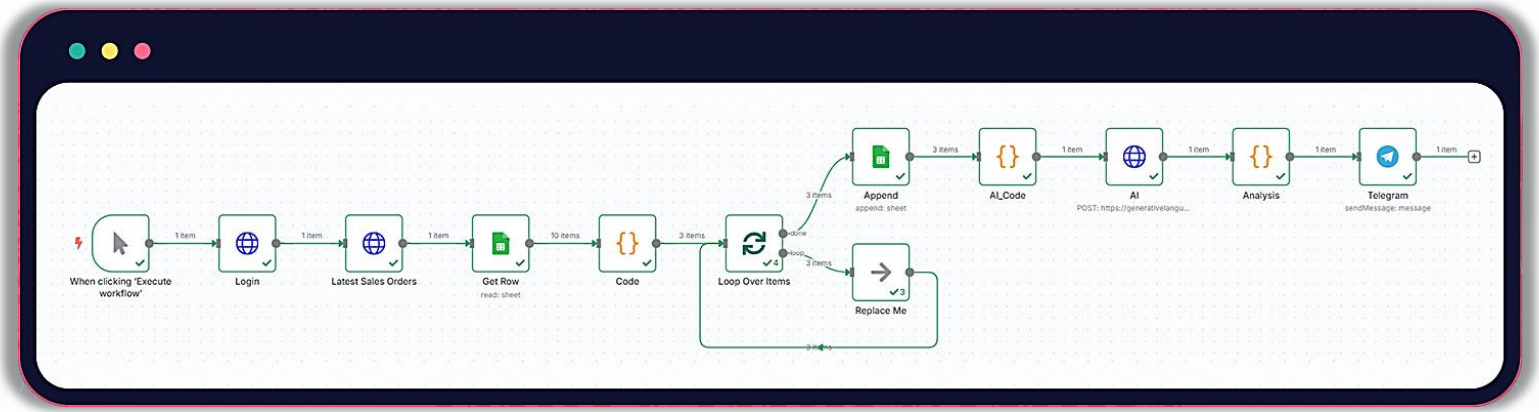
- Real-time synchronization of SAP Business One sales orders to Google Sheets.
- AI-powered insights from sales data using Google's Gemma model.
- Automated delivery of sales summaries via Telegram notifications.
- This setup streamlines sales tracking, reduces manual reporting, and provides actionable insights for small to midsize businesses using SAP Business One.

Prerequisites: To follow this tutorial, you need:

- **SAP Business One Access:** A valid database (e.g., SBODemoUS) with authorized username, password, and active Service Layer.
- **Docker Experience:** Familiarity with installing and running Docker Desktop to deploy n8n.
- **Google Account:** Access to Google Sheets and Google Cloud Platform for API setup (OAuth2 authentication).
- **Telegram Account:** A Telegram account to create a bot and obtain a user ID for notifications.
- **n8n Account:** A free or trial account at n8n.io for deploying and configuring workflows
- **Basic JavaScript Knowledge:** Familiarity with JavaScript syntax to understand and customize the code snippets used in the workflow.

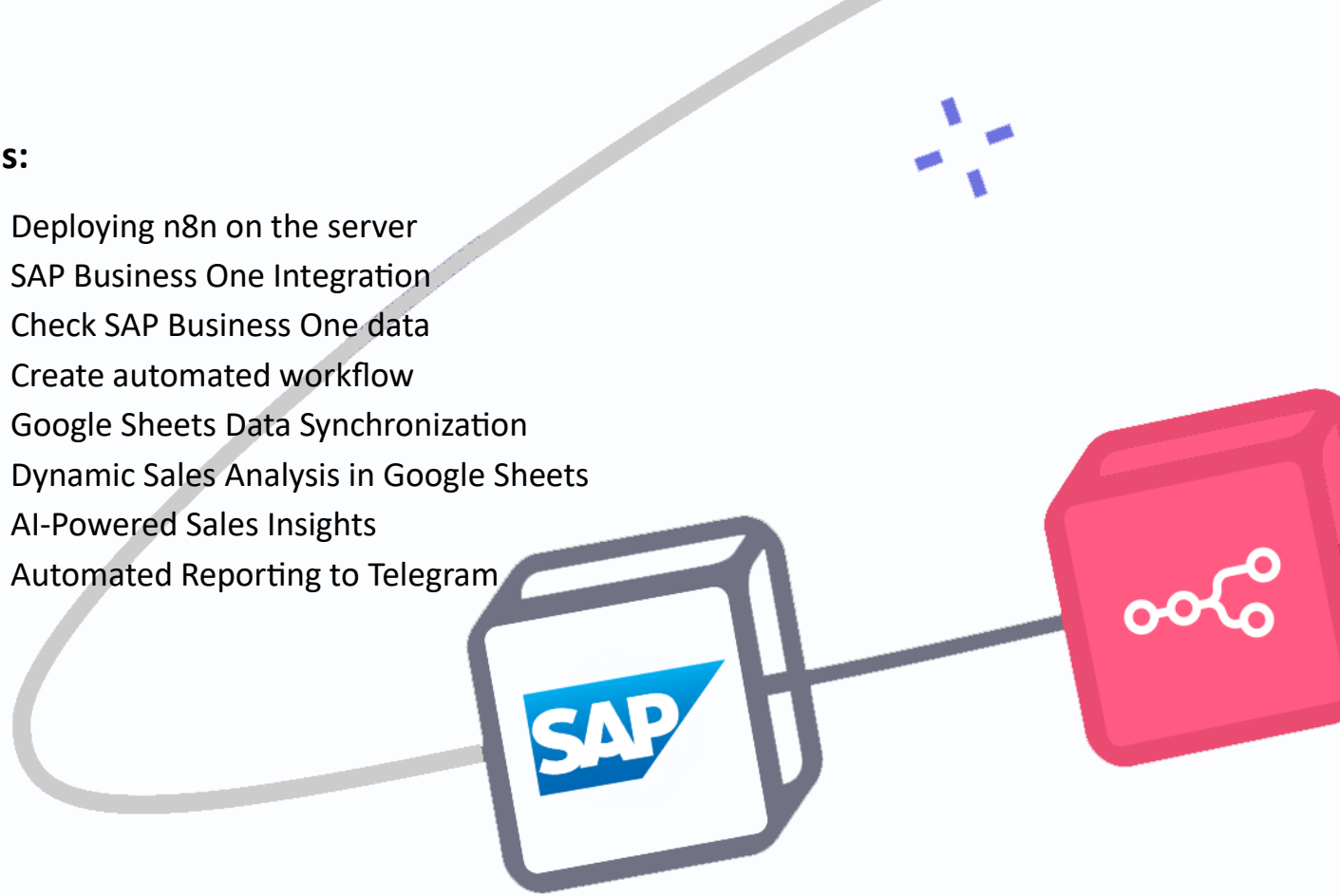
Designated workflow created in two parts:

Part (1) Configure n8n to deliver SAP Business One Sales Orders data to Google Sheets
Part (2) AI Analysis and Telegram Notification



Steps:

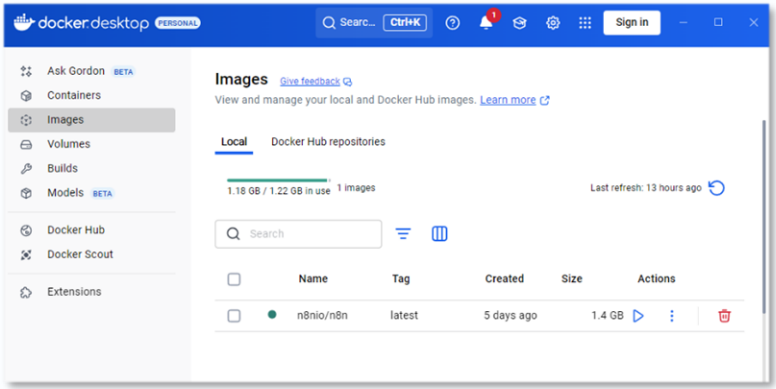
1. Deploying n8n on the server
2. SAP Business One Integration
3. Check SAP Business One data
4. Create automated workflow
5. Google Sheets Data Synchronization
6. Dynamic Sales Analysis in Google Sheets
7. AI-Powered Sales Insights
8. Automated Reporting to Telegram

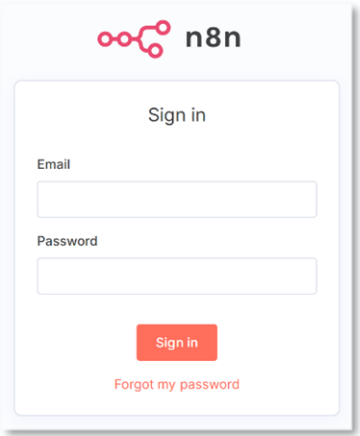


1. **Deploying n8n on the server:** To begin, install Docker Desktop. With Docker running, open your terminal (or PowerShell on Windows) and execute the command below to start n8n.

```
docker run -it --rm --name n8n -p 5678:5678 -v n8n_data:/home/node/.n8n n8nio/n8n
```

This command uses a volume to save your data. Once running, create your account by visiting http://localhost:5678/.

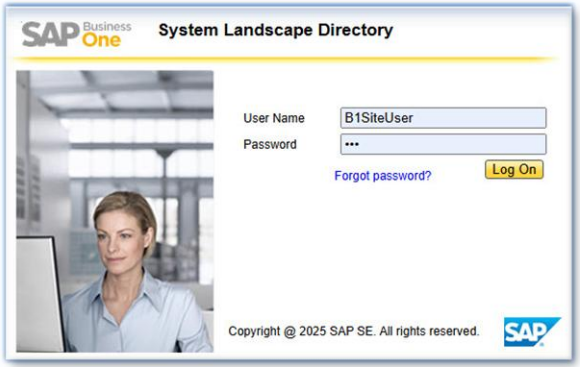


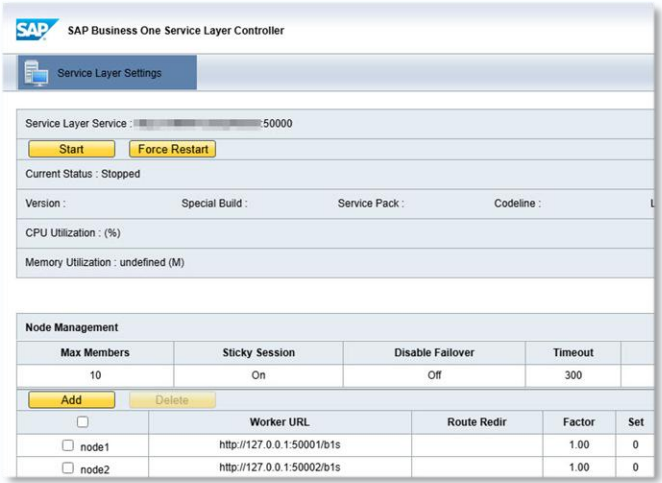


2. **SAP Business One Integration:** Configure and Login to SAP Business One service layer in order to create a connection with the n8n application. In this step you need to provide Authentication for n8n application.

   Requirements:

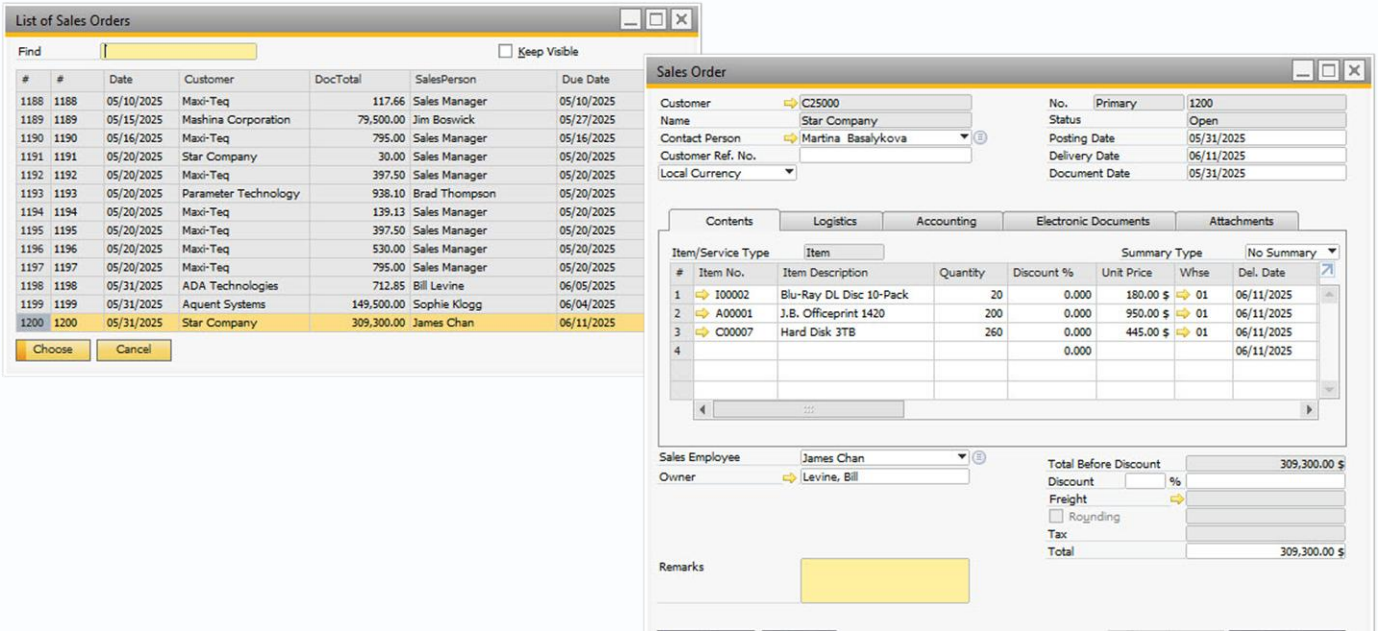
   - SAP Business One Database and Authorized Username, and Password (SBODemoUS)
   - Enabling Service Layer: <SERVER Name>:400001/ServiceLayerController





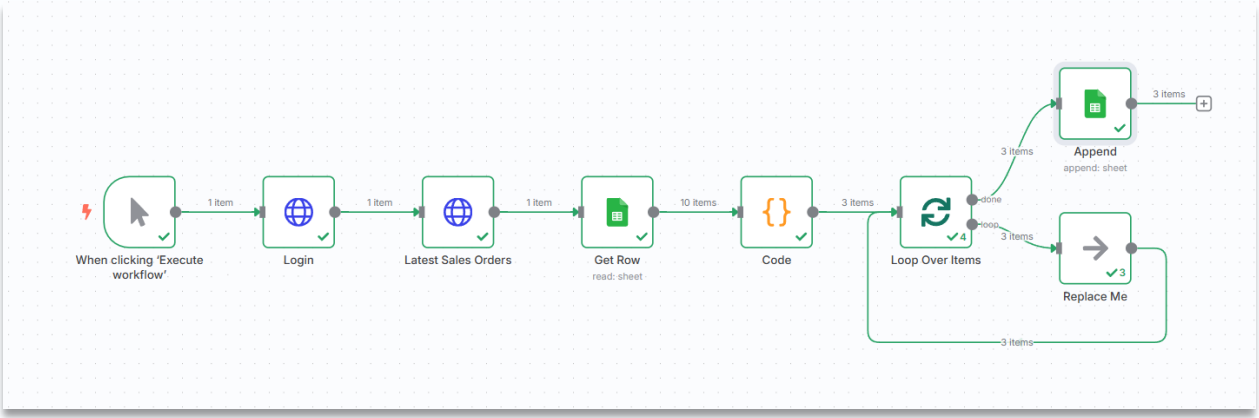
Security consideration: For a production environment, it is crucial to manage sensitive information like usernames, passwords, and API keys securely. Instead of writing them directly in the workflow nodes, use n8n's built-in Credentials Manager to store and access them safely.

3. **Check SAP Business One data:** Check list of latest sales orders [31-May-2025]



4. **Create automated workflow:** In order to automate fetching data of latest Sales Orders via SAP Business One Service Layer these steps should be followed. Also, Scheduled triggers can be implemented for regular updates.

- Creating connection to SLD
- Querying required data like TOP Sales Orders
- Creating connection to the Google sheets.



Tips: for data retrieval from SAP, we need to specify and execute OData query via Service Layer to retrieve required sales order data from the SBO database.

For example:

```
https://<SERVER Name>:50000/b1s/v1/Orders?$select=DocEntry,... <Required
Columns>&$orderby=DocEntry desc&$top=10
```

The *$top=10* parameter is suitable for this demo. However, in a live environment, if more than 10 orders are created between workflow runs, some orders will be missed. A more robust method is to filter orders based on their *creation or update timestamp*. This ensures you fetch all new records since the last successful run.

5. **Google Sheets Data Synchronization:** Data Retrieval from the designated Google Sheet Requires Google Sheet ID and specific sheet. In the next steps duplicate checking should happen. Filter new sales orders by comparing against existing Google Sheet data line by line to prevent duplicates (Implemented using JavaScript in n8n).
    - Access the Code Snippet on GitHub: Link

DocEntry	DocDate	DocDueDate	CardCode	CardName	DocTotal	SalesPerson
1188	2025-05-10	2025-05-10	C20000	Maxi-Teq	$ 117.66	Sales Manager
1189	2025-05-15	2025-05-27	C42000	Mashina Corporation	$ 79,500.00	Jim Boswick
1190	2025-05-16	2025-05-16	C20000	Maxi-Teq	$ 795.00	Sales Manager
1191	2025-05-20	2025-05-20	C25000	Star Company	$ 30.00	Sales Manager
1192	2025-05-20	2025-05-20	C20000	Maxi-Teq	$ 397.50	Sales Manager
1193	2025-05-20	2025-05-20	C23900	Parameter Technology	$ 938.10	Brad Thompson
1194	2025-05-20	2025-05-20	C20000	Maxi-Teq	$ 139.13	Sales Manager
1195	2025-05-20	2025-05-20	C20000	Maxi-Teq	$ 397.50	Sales Manager
1196	2025-05-20	2025-05-20	C20000	Maxi-Teq	$ 530.00	Sales Manager
1197	2025-05-20	2025-05-20	C20000	Maxi-Teq	$ 795.00	Sales Manager

Scalability Note: The current method of fetching all existing rows from Google Sheets to check for duplicates works perfectly for small to medium datasets. For very large-scale operations with tens of thousands of records, this could slow down the workflow. In such cases, consider using a database or a more optimized API call to check for existing *DocEntry* values.

6. **Dynamic Sales Analysis in Google Sheets:** Append new, unique sales orders to the specified Google Sheet. Automated appending of new Sales Orders with duplicate prevention logic. (Implemented using JavaScript in n8n). It should check the previous records and add just new submitted sales orders. Utilization of custom Google Sheets queries for daily/periodic sales performance metrics and interactive date-based reporting.

DocEntry	DocDate	DocDueDate	CardCode	CardName	DocTotal	SalesPerson
1188	2025-05-10	2025-05-10	C20000	Maxi-Teq	$ 117.66	Sales Manager
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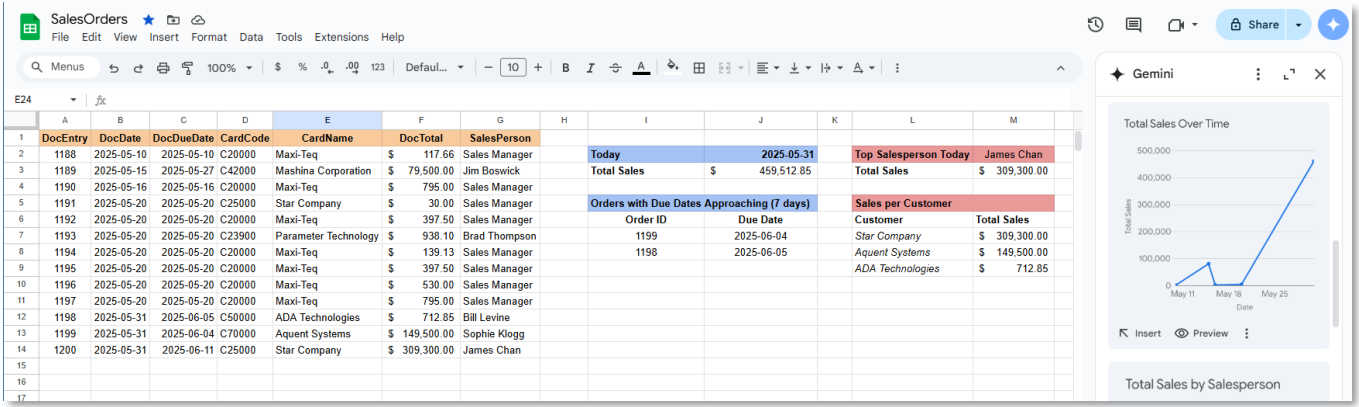
1197	2025-05-20	2025-05-20	C20000	Maxi-Teq	$ 795.00	Sales Manager
1198	2025-05-31	2025-06-05	C50000	ADA Technologies	$ 712.85	Bill Levine
1199	2025-05-31	2025-06-04	C70000	Aquent Systems	$ 149,500.00	Sophie Klogg
1200	2025-05-31	2025-06-11	C25000	Star Company	$ 309,300.00	James Chan

Alternatively, insights can also be explored by using Gemini and writing prompts in the Google Sheets directly.



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Today	2025.05.31
Total Sales	$ 459,512.85

Top Salesperson Today	James Chan
Total Sales	$ 309,300.00

Orders with Due Dates Approaching (7 days)

Order ID	Due Date
1199	2025-06-04
1198	2025-06-05

Sales per Customer

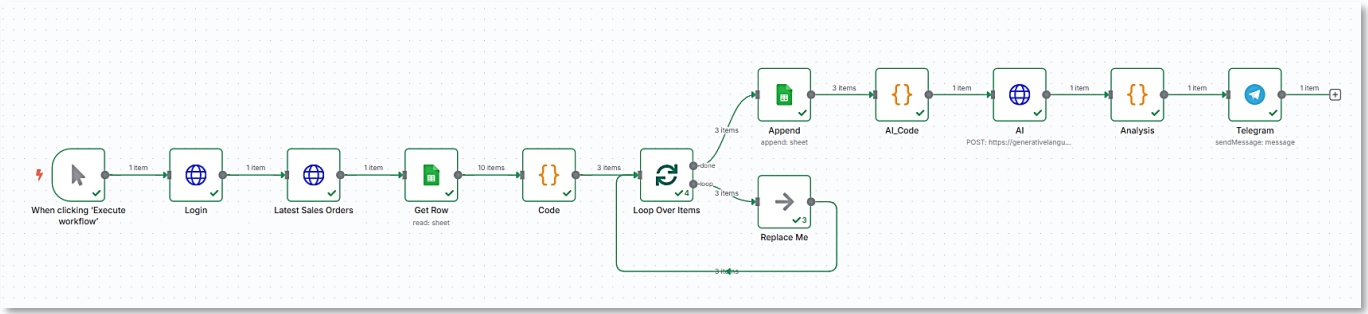
Customer	Total Sales
Star Company	$ 309,300.00
Aquent Systems	$ 149,500.00
ADA Technologies	$ 712.85

Another solution can be utilization of custom Google Sheets queries for daily/periodic sales performance metrics and interactive date-based reporting. (Optionally, insights can also be explored using Gemini in Google Sheets directly).

```
=IFERROR(INDEX(QUERY(A2:G, "SELECT Col7, SUM(Col6) WHERE Col2 >= DATE '"&TEXT(DATE(YEAR(TODAY()),
MONTH(TODAY()), 1),"yyyy-mm-dd")&"' AND Col2 <= DATE '"&TEXT(EOMONTH(TODAY(), 0),"yyyy-mm-dd")&"' AND
Col7 IS NOT NULL GROUP BY Col7 ORDER BY SUM(Col6) DESC LIMIT 1"), 2, 1), "No Sales")
```

7. **AI-Powered Sales Insights:** Prepare and structure the relevant sales data and construct a detailed prompt for the AI model (Implemented using JavaScript in n8n). Generation of analytical summaries from sales data using AI (e.g., Google Gemma via API). It is also possible to change the steps like just getting the analysis from AI and calculate what happened on the data inside the code.

   Access the AI Prompt Builder Script on GitHub: Link



In this tutorial Google open-source gemma-3n-e4b-it model used as an API to send the prepared prompt and generate insights.

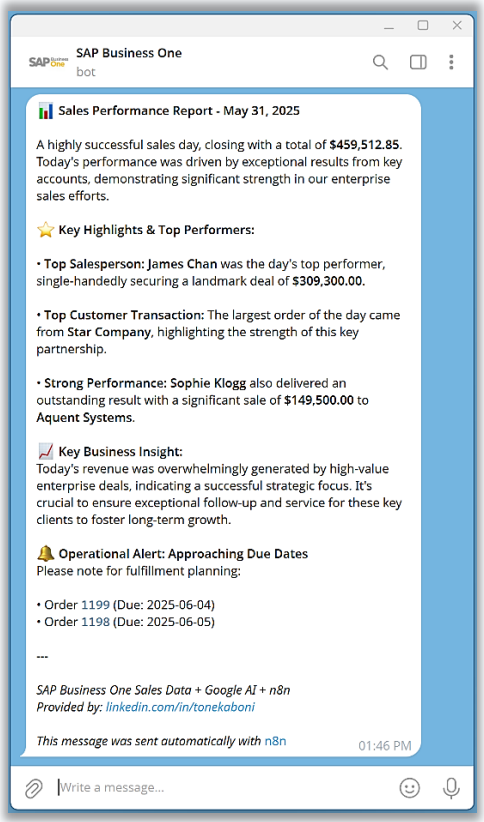
Gemma

8. **Automated Reporting to Telegram:** at the final step, the output needs to be formatted into a suitable message, and send it via a Telegram Bot to specified telegram user.

   Requirements:

   - Requires a Telegram Bot via the @BotFather
   - User Telegram ID
   - Delivery of AI-generated sales summaries to users via the Telegram Bot.

Final message sent with n8n via telegram bot to the specified user:



Prepared by:

Amirhossein Tonekaboni
SAP Business One Consultant

Linkedin.com/in/tonekaboni/

JavaScript codes developed with assistance from Google Gemini.