FANBASE ANALYZER AGENT (REDDIT-N8N-GMAIL)

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INTRODUCTION

- The Fanbase Analyzer Agent is an intelligent automation system built using n8n and OpenAI.
- It automatically compares celebrity fanbases by analyzing real-time social media (Reddit) activity.
- The system fetches recent fan posts, processes and cleans data, and uses AI models to determine which fanbase is more active, positive, and engaging.
- A final email report with AI-generated insights and charts is automatically sent to the user — providing a complete, hands-free fan sentiment analysis pipeline.
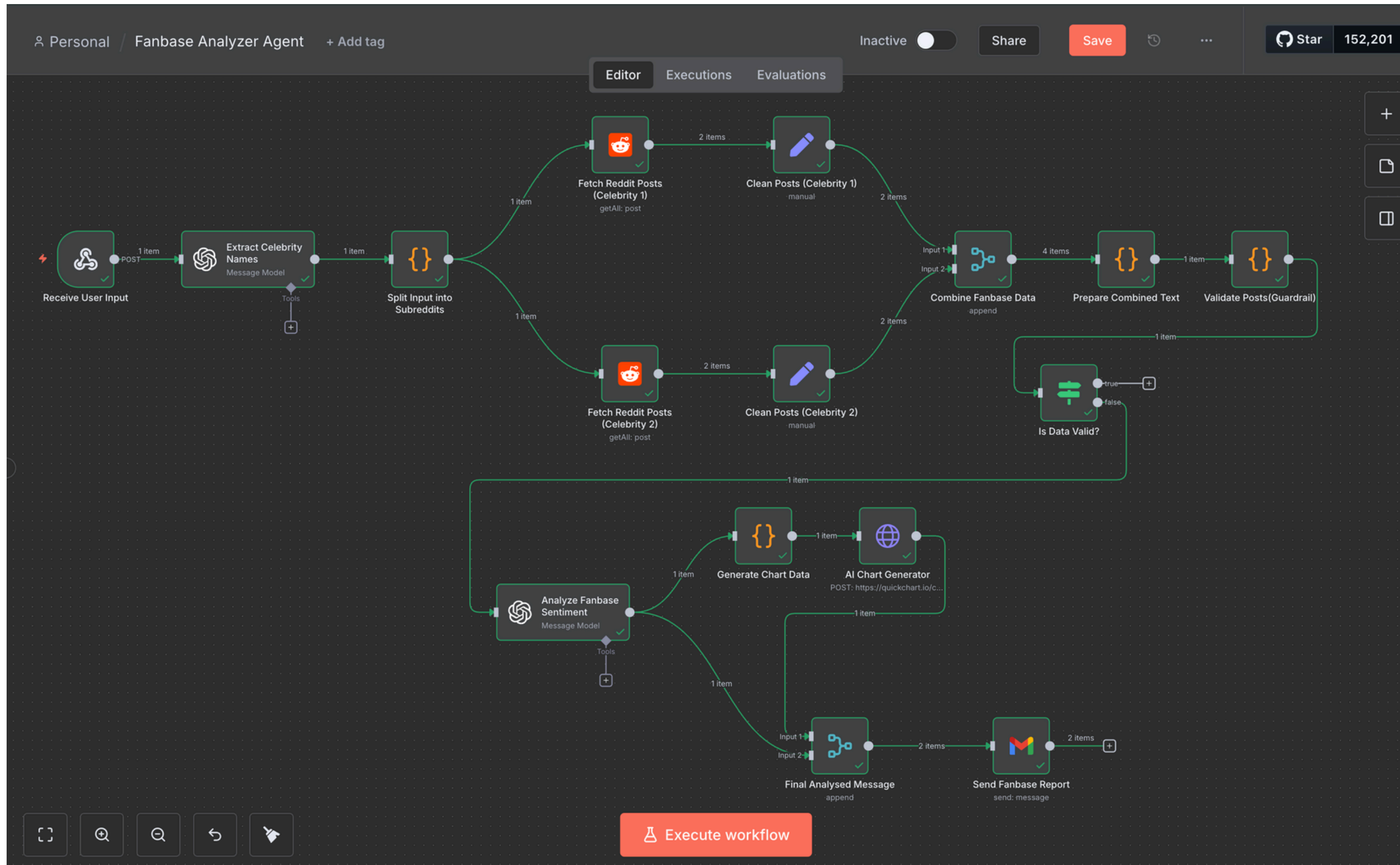
RESOURCE:-Reddit.

*TOOLS:-*n8n-OpenAI

*OUTPUT:-*Gmail

N8N-WORKFLOW

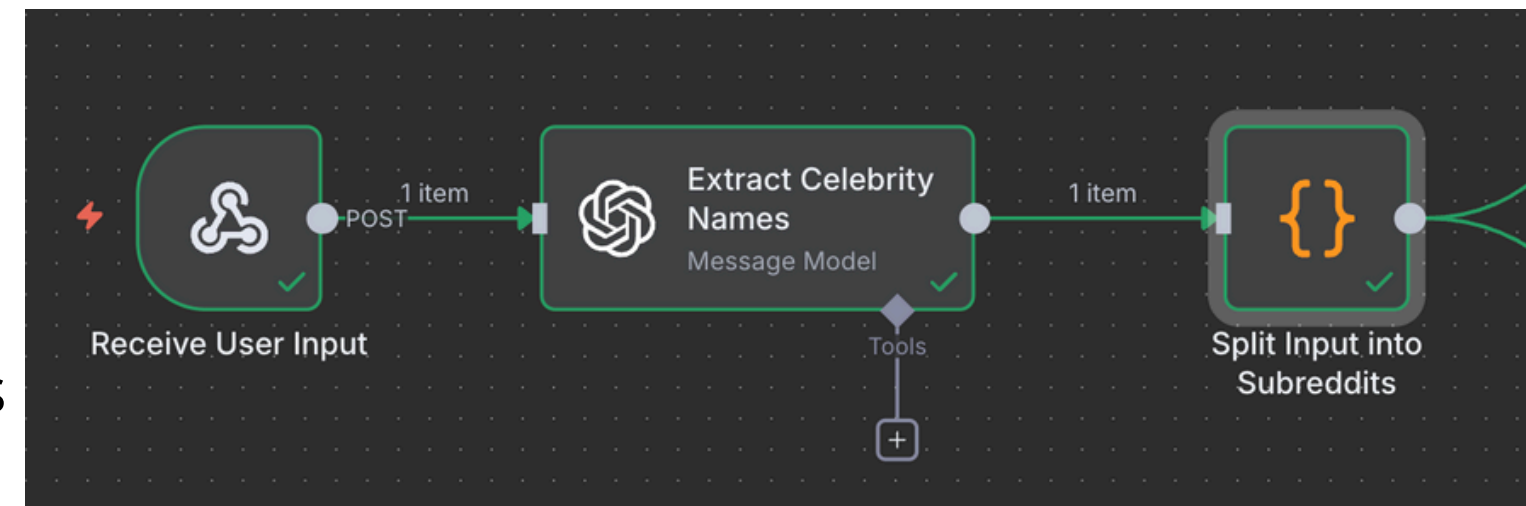# GIVING INPUT TO WORKFLOW DYNAMICALLY BY USER

RECEIVER USER INPUT:

It s Actually Webhook which gives a url to give the input it listens to the test url until the input is given and then the information is given to GPT model to extract the Sub-reddits from the given input by webhook.

GPT-MODEL:

The Input is Given to GPT-MODEL and it extracts the Subreddits form it.It separates the subreddits as subreddit1 and subreddit2(in JSON Format.)

```
[
  {
    "index": 0,
    "message": {
      "role": "assistant",
      "content": "{\"subreddit1\":\"ViniciusJr\",\"subreddit2\":\"LamineYamal\"}",
      "refusal": null,
      "annotations": [
      ]
    },
    "logprobs": null,
    "finish_reason": "stop"
  }
]
```

JavaScript Code:

This Node converts the Json to Javascript data and gives only the subreddits.And These subreddits are further given to reddit nodes to fetch the data.

```
    "subreddit1": "ViniciusJr",
    "subreddit2": "LamineYamal"
```

GIVING INPUT TO WORKFLOW DYNAMICALLY BY USER

RECEIVER USER INPUT:

```
(base) masireddysushanthreddy@MASIREDDYs-MacBook-Air ~ % curl -X POST http://localhost:5678/webhook-test/fan-compare \
  -H "Content-Type: application/json" \
  -d '{"input":"Vinicius Jr vs Lamine Yamal","email":"yourname@gmail.com"}'
{"message":"Workflow was started"}%
(base) masireddysushanthreddy@MASIREDDYs-MacBook-Air ~ %
```

It's a Curl Command and given in the terminal

http://localhost:5678/webhook-test/fan-compare. Its the WEB-URL given by WebHook node
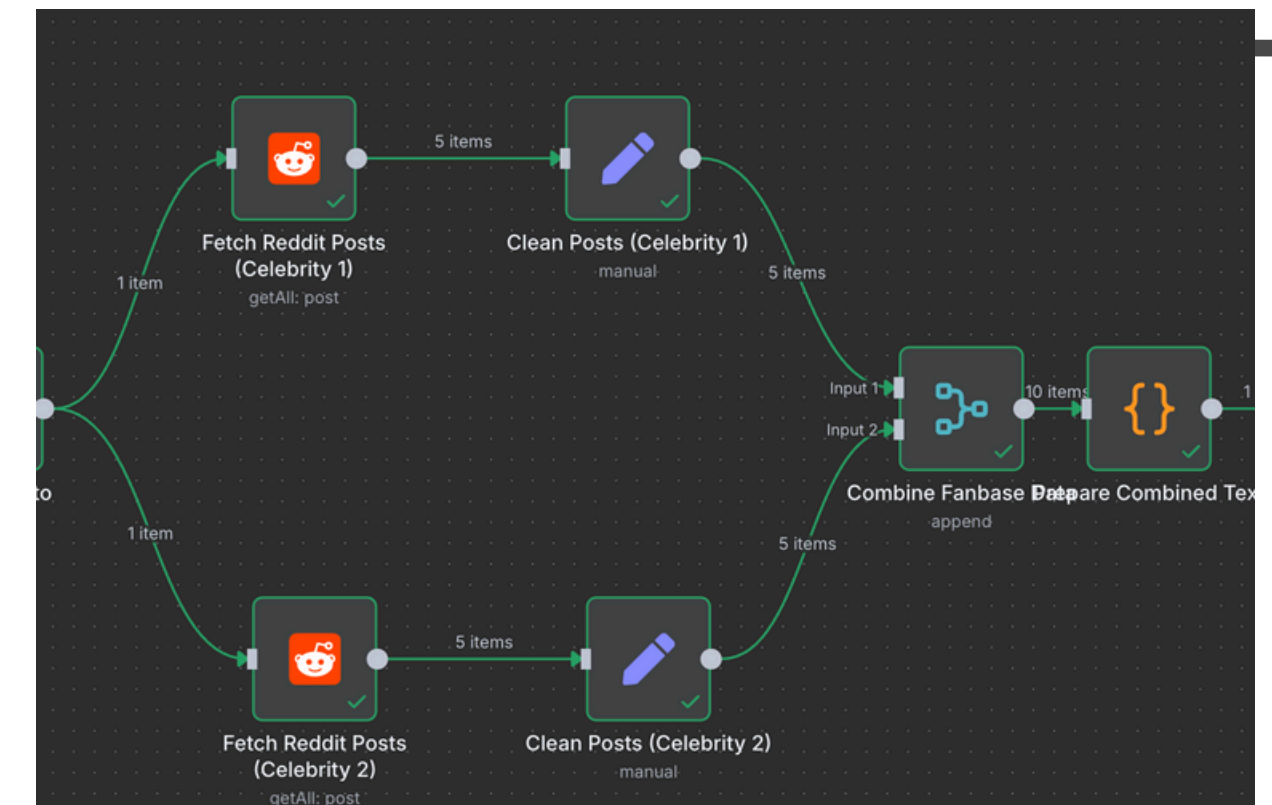
The content type is JSON

And Finally give the fan base analysis input and also give the email address where the output is to be sent.

GIVING SUBREDDITS TO REDDIT TO FETCH DATA

The Two Reddit Nodes Get the Sub-reddits(i.e..Celebrity 1 and Celebrity 2).Now it fetches the Data.And this data is edited and merge output information together.

Now this output is given to a java script code to get the javascript version

```
[
  {
    "combinedText": "Fan Group: viniciusjr\nTitle: We hit 100 members!\nText: undefined\n\n----------------------\n\nFan Group: viniciusjr\nTitle: DISCUSSION - Sub improvement ideas\nText: undefined\n\n----------------------\n\nFan Group: viniciusjr\nTitle: #todoscomvinijr\nText: undefined\n\n----------------------\n\nFan Group: viniciusjr\nTitle: Who knows what brand is his jacket?\nText: undefined\n\n----------------------\n\nFan Group: viniciusjr\nTitle: Everyone needs to stop this racism towards vini\nText: undefined\n\n----------------------\n\nFan Group: LamineYamal\nTitle: 10\nText: undefined\n\n----------------------\n\nFan Group: LamineYamal\nTitle: ⚡\nText: undefined\n\n----------------------\n\nFan Group: LamineYamal\nTitle: Lamine yamal's new siginature boots leaked\nText: undefined\n\n----------------------\n\nFan Group: LamineYamal\nTitle: Share your views on his story\nText: undefined\n\n----------------------\n\nFan Group: LamineYamal\nTitle: r/ofcoursethatsasub\nText: undefined"
  }
]
```

This the final output of the combined text into javascript.

GIVING THE INPUT DATA TO GPT TO ANALYSE THE FANBASE

This is the core intelligence of the workflow where **OpenAI GPT-4.1**-Mini analyzes Reddit fan posts.

The node takes combined and cleaned text from both celebrity fanbases as input(The merged data).

The prompt instructs the model to evaluate positivity, engagement, and provide a summary comparison.

The output includes:
Positivity and engagement scores for both celebrities
Overall winner (which fanbase is more active and positive)
3-line summary and 5-point detailed analysis

Analyze Fanbase Sentiment   🧪 Execute step

INPUT   Schema Table JSON

Parameters   Settings   Docs ⧉

OUTPUT ✓ ⓘ   Schema Table JSON ✎

1 item

- ⫸ Is Data Valid?   1 item
  - ☑ valid   true
  - AB combinedText   Fan Group: viniciusjr\n Title: We hit 100 members!\n Text: undefined\n \n -------------------\n \n Fan Group: viniciusjr\n Title: DISCUSSION - Sub improvement ideas\n Text: undefined\n \n --------------\n \n Fan Group: viniciusjr\n Title: #todoscomvinijr\n Text: undefined\n \n -------------\n \n Fan Group: viniciusjr\n Title: Who knows what brand is his jacket?\n Text: undefined\n \n ---------------\n \n Fan Group: viniciusjr\n Title: Everyone needs to stop this racism towards vini\n Text: undefined\n \n Fan Group: LamineYamal\n Title: 10\n Text: undefined\n \n ------------------\n \n Fan Group: LamineYama...

- ⟩ {} Validate Posts(Guardrail)   1 item
- ⟩ {} Prepare Combined Text   1 item
- ⟩ ⊱ Combine Fanbase Data   10 items
- ⟩ ✎ Clean Posts (Celebrity 1)   5 items
- ⟩ ✎ Clean Posts (Celebrity 2)   5 items
- ⟩ Fetch Reddit Posts (Celebrity 1)   5 items
- ⟩ Fetch Reddit Posts (Celebrity 2)   5 items
- ⟩ {} Split Input into Subreddits   1 item
- ⟩ Extract Celebrity Names   1 item

Credential to connect with

OpenAi account   ✎

Resource

Text

Operation

Message a Model

Model

From list ⌄   GPT-4.1-MINI

Messages

Prompt   ▢ ⋮   Fixed Expression

🔧   Here are some recent Reddit posts about tw

Parameter: "messages.values[0].content" has an expression

fx   {{ $json.combinedText }}

Your primary task is to analyze and compar
e the *fanbase sentiment and engagement*

Here are some recent Reddit posts about two celebrities: ...

Role

User ⌄

Add Message

Simplify Output

⬤ (toggle on)

Tools

+

```json
[
  {
    "index": 0,
    "message": {
      "role": "assistant",
      "content": "Celebrity 1: Vinicius Jr - Positivity: 85% - Engagement: 80%  \nCelebrity 2: Lamine Yamal - Positivity: 75% - Engagement: 65%\n\nWinner: **Vinicius Jr**\n\nSummary (3 lines):  \nVinicius Jr's fanbase exhibits higher positivity and proactive engagement, showing strong emotional investment and community-building activities. Discussions frequently emphasize unity and combating negativity, reflecting a supportive atmosphere. Lamine Yamal's fandom is engaged but comparatively less emotionally charged and interaction-focused.\n\nProfessional Analysis (in point wise):  \n- Vinicius Jr's fan posts reflect a predominantly positive emotional tone with explicit calls to end racism, indicating a protective and passionate community environment.  \n- The presence of community milestones (100 members) and improvement discussions points to active engagement and growth-oriented vibes within Vini's fanbase.  \n- Queries about merchandising details and hashtag campaigns (#todoscomvinijr) suggest a fanbase deeply interested in branding and collective support initiatives, showing multifaceted interaction depth.  \n- Lamine Yamal's fans demonstrate enthusiasm through reactionary posts (e.g., emoji titles, "10") and content sharing, but lack broader engagement themes or community-building elements present in Vinicius Jr's fanbase.  \n- Given both players' rising profiles and recent performances, Vini's fan discussions are also shaped by ongoing social challenges (racism), adding an emotionally charged and socially aware dimension to engagement, slightly elevating their fanbase's cohesion and drive.",
      "refusal": null,
      "annotations": [
      ]
    },
  },
```

💡 I wish this node would...

GIVING THE INFORMATION TO VISUALISE A CHART

After AI analysis, the workflow automatically visualizes and delivers the results.

Generate Chart Data Node:

Extracts positivity and engagement scores from the AI output.

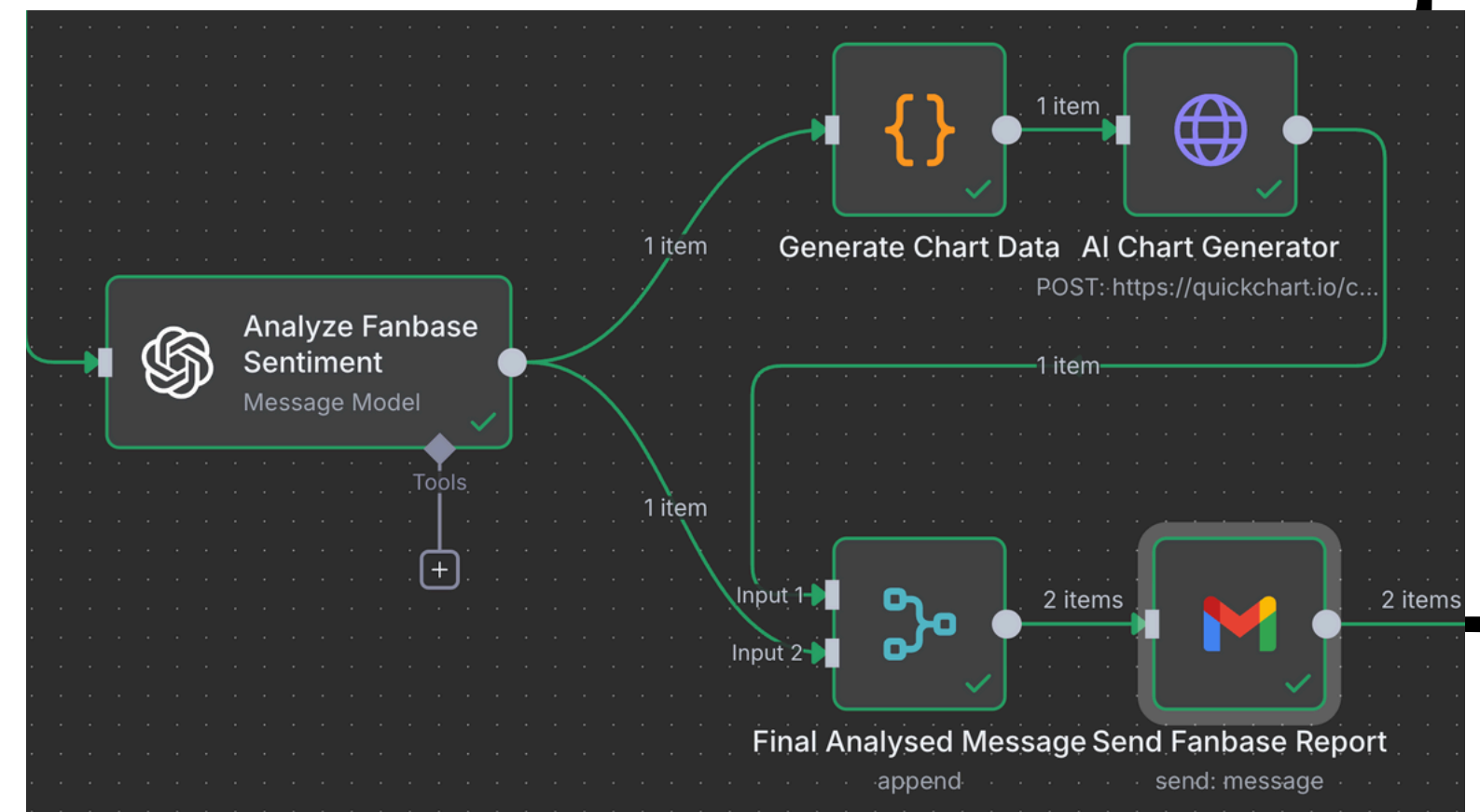Structures them into chart-friendly JSON format.

AI Chart Generator (HTTP Request Node):

Sends the formatted data to QuickChart API to create a bar chart.

The chart compares both fanbases' positivity and engagement visually.

Final Analysed Message (Merge Node):

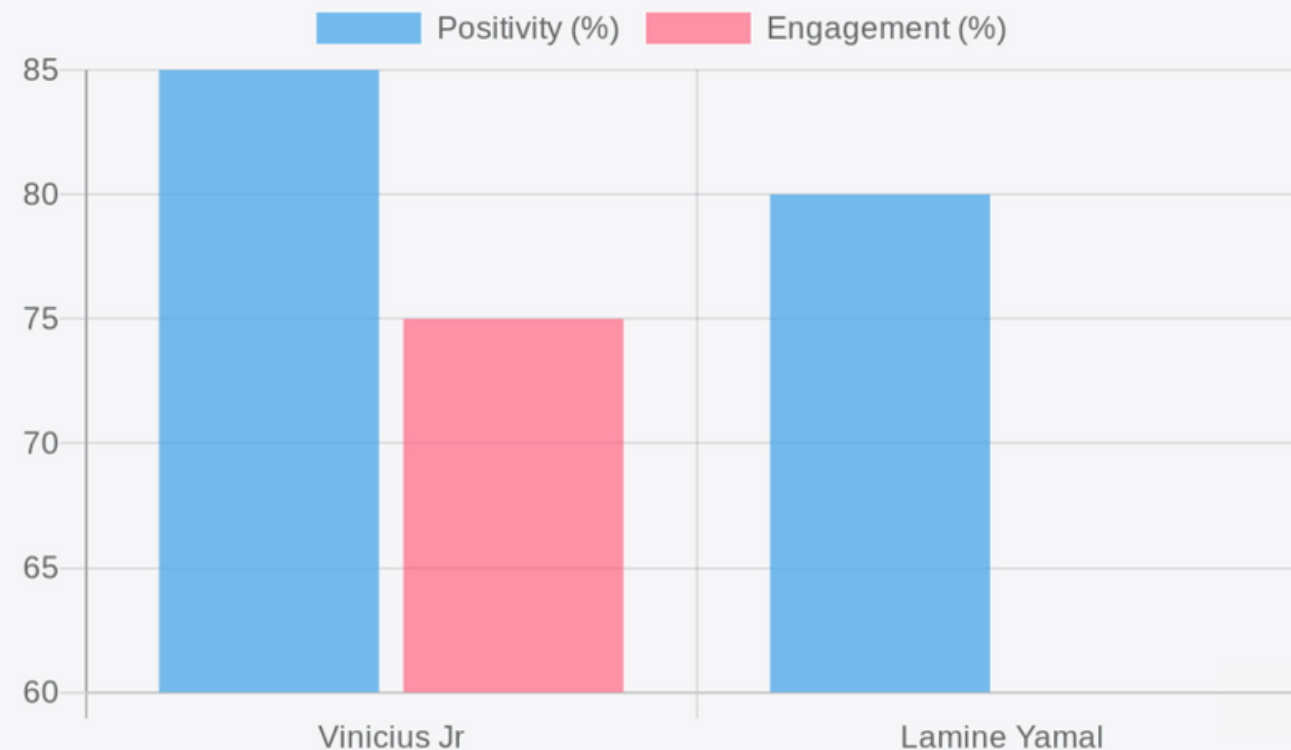Combines text summary and chart URL into one unified report.

OUTPUT

📢 **Fanbase Analysis Report**

Celebrity 1: Vinicius Jr — Positivity: 85% — Engagement: 75% Celebrity 2: Lamine Yamal — Positivity: 80% — Engagement: 60% Winner: **Vinicius Jr** Summary (3 lines): Vinicius Jr's fanbase demonstrates higher engagement and positivity through substantive discussions and milestone celebrations. Lamine Yamal's fan activity appears more minimal and emotionally neutral, with less interactive depth. Vinicius Jr's supporters show stronger community-building effort reflecting a more vibrant and cohesive fan environment. Professional Analysis (in point wise): - Vinicius Jr's fan posts include achievements (100 members) and active solicitations for improvement ideas, indicating a proactive and committed fanbase fostering sustained engagement. - Lamine Yamal's posts are brief and symbolic (e.g., "10" and "⚡"), suggesting a more casual or nascent fan interaction lacking detailed conversation or emotional depth. - The positivity in Vinicius Jr's group is buoyed by celebratory and constructive tones, enhancing emotional investment and community bonding. - While both fanbases show enthusiasm, Vinicius Jr's fans engage in content that encourages dialogue and collective growth, marking higher engagement quality. - If relevant, recent strong performances or visibility of Vinicius Jr at a high-profile football event may have contributed to momentum and motivation for active fan participation, indirectly influencing engagement metrics without dominating sentiment.

📊 **Visualization**

Send Fanbase Report (Gmail Node):
Sends an HTML email to the user containing:
1)AI summary
2)Chart visualization
3)Winning fanbase highlight 🏆

CONCLUSION

- The Fanbase Analyzer Agent successfully automates the process of comparing celebrity fanbases using AI and automation.

- It integrates multiple technologies — n8n, OpenAI, Reddit API, QuickChart, and Gmail — into one seamless workflow.

- The system produces data-driven insights on fan positivity, engagement, and sentiment — all in a visual, automated email report.

- This project demonstrates how AI + workflow automation can replace manual analysis with fast, accurate, and explainable results.

FUTURE SCOPE

- Create a web apllication platform for the web URL in place of using Terminal to input the Data.

- Extend analysis to multiple social media platforms (Twitter/X, Instagram, YouTube).

- Store historical results in a database for long-term trend analysis.(By using Google Sheets.)

- Integrate real-time dashboards for continuous fan sentiment tracking.

- Enable multilingual analysis to cover global fan communities.

- Add Slack/Telegram notifications for instant updates.

THANK YOU