Joker

Team Members
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Supervisor
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Project Outline and Workflow

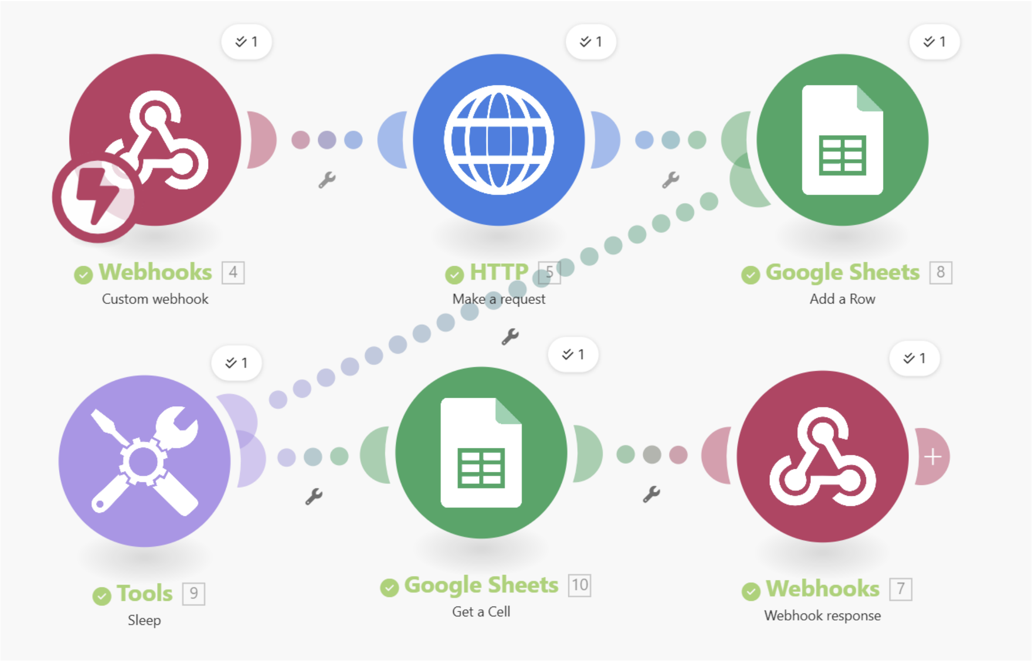
Joker

In today’s fast-paced digital world, moments of simple joy and spontaneous laughter are becoming rare.

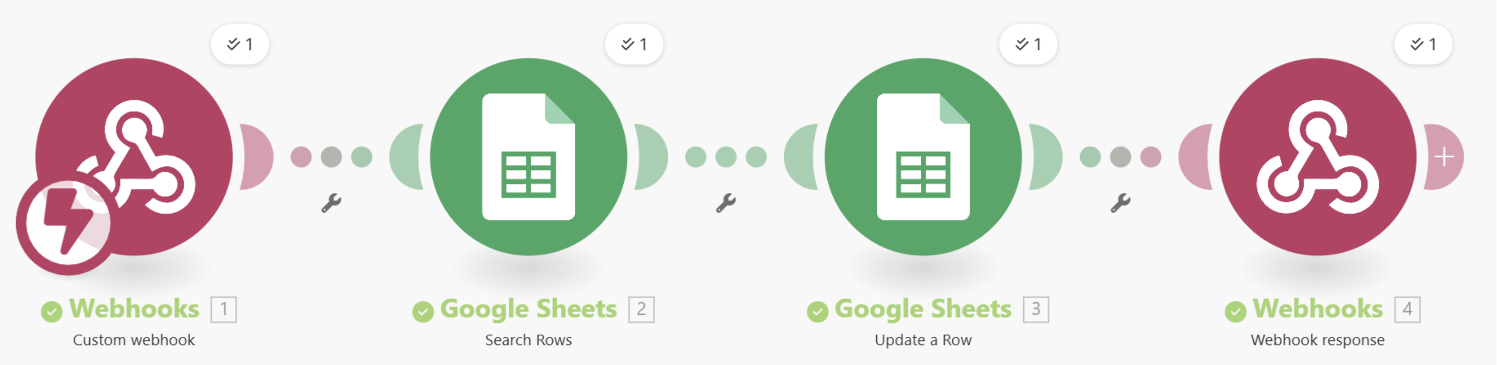
Joker is an IoT-based smart humor companion that delivers an interactive and tangible humor experience through physical input, context-aware feedback, and real-time translation.

By reacting with sound and motion based on user ratings, Joker transforms passive entertainment into an emotionally engaging interaction.

Component	Technology Used
MCU	ESP32(Wokwi Simulation)
Middleware	Make.com(Webhook, JSON Parser, HTTP Router)
Database	Google Sheets API(Logging, Sorting, Rating)
Translation	Google Translate API(via Make.com)
Peripherals	ILI9341 TFT LCD (SPI), 4×4 Keypad, Passive Buzzer



Fetching Jokes and Translating



Fetching Jokes and Translating

Google App Script-Ranking Jokes

Member Tasks within Project

Mentioned each member task and role within your project

01

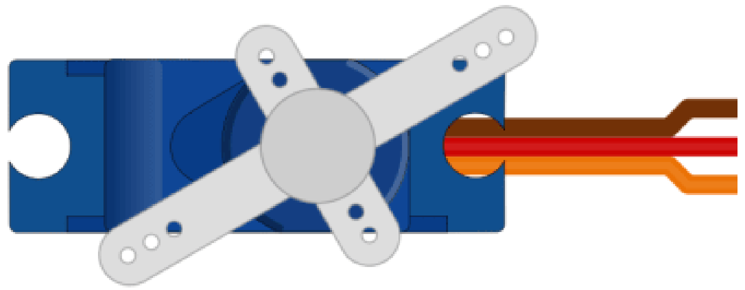
Member-1 Name: 김주현

Category Selection, Korean Translation

02

Member-2 Name: 강정후

Laughing Motion by using Servo and Buzzer

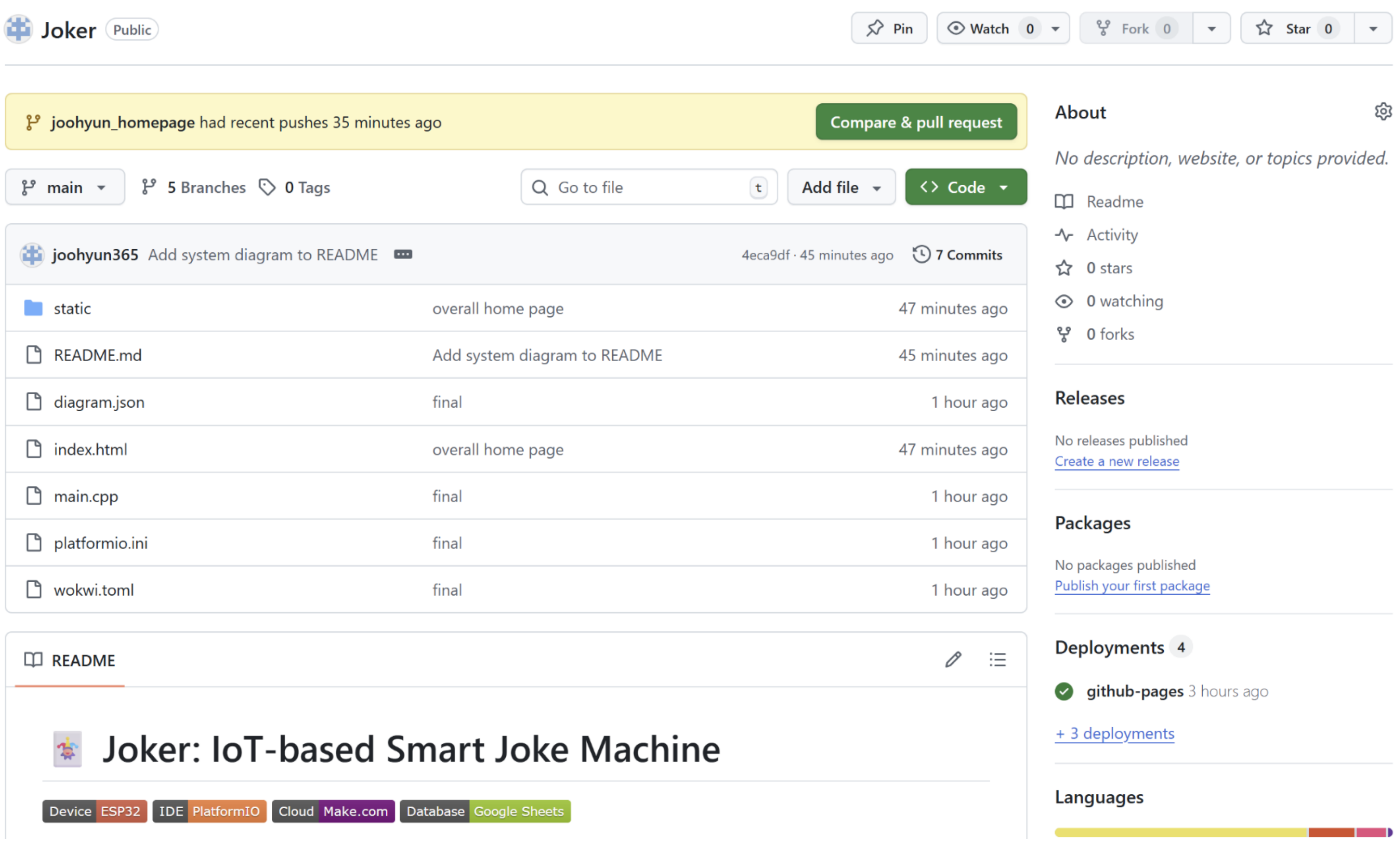


03

Member-3 Name: 김태연

Rating system and timer

Github



joohyun_homepage had recent pushes 35 minutes ago

joohyun365 Add system diagram to README 4eca9df · 45 minutes ago 7 Commits

static	overall home page	47 minutes ago
README.md	Add system diagram to README	45 minutes ago
diagram.json	final	1 hour ago
index.html	overall home page	47 minutes ago
main.cpp	final	1 hour ago
platformio.ini	final	1 hour ago
wokwi.toml	final	1 hour ago

Joker: IoT-based Smart Joke Machine

About

No description, website, or topics provided.

Readme
Activity
0 stars
0 watching
0 forks

Releases

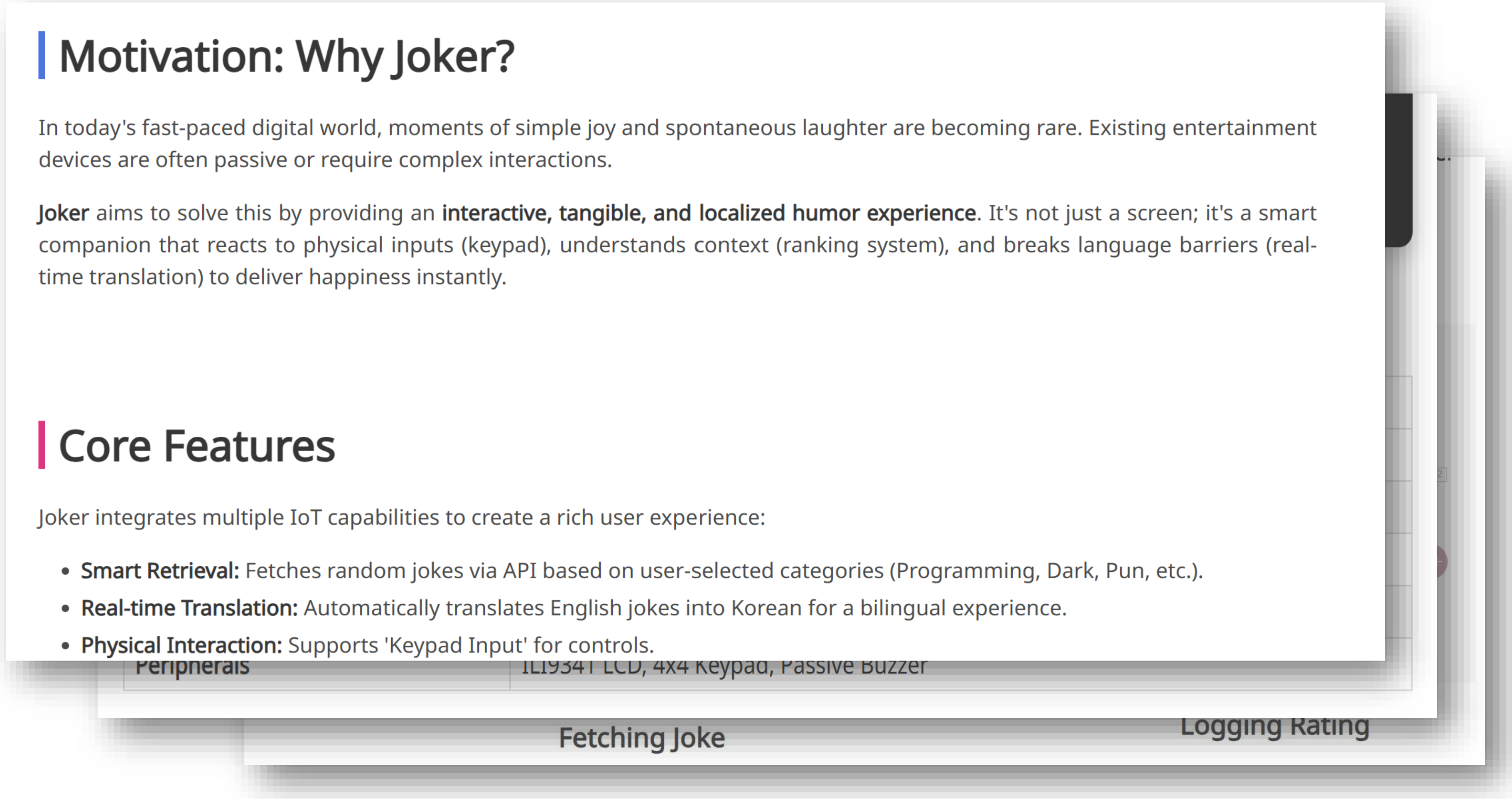
No releases published
Create a new release

Packages

No packages published
Publish your first package

Deployments 4

github-pages 3 hours ago
+ 3 deployments



Motivation: Why Joker?

In today's fast-paced digital world, moments of simple joy and spontaneous laughter are becoming rare. Existing entertainment devices are often passive or require complex interactions.

Joker aims to solve this by providing an **interactive, tangible, and localized humor experience**. It's not just a screen; it's a smart companion that reacts to physical inputs (keypad), understands context (ranking system), and breaks language barriers (real-time translation) to deliver happiness instantly.

Core Features

Joker integrates multiple IoT capabilities to create a rich user experience:

- **Smart Retrieval:** Fetches random jokes via API based on user-selected categories (Programming, Dark, Pun, etc.).
- **Real-time Translation:** Automatically translates English jokes into Korean for a bilingual experience.
- **Physical Interaction:** Supports 'Keypad Input' for controls.

Peripherals	ILI9341 LCD, 4x4 Keypad, Passive Buzzer

Github Code URL: https://github.com/joohyun365/Joker

Project Page URL: https://joohyun365.github.io/Joker/

Project Video Demo

Member-1 Task Details

01

Member-1 Name: 김주현

🌐 Server-Side Translation Pipeline

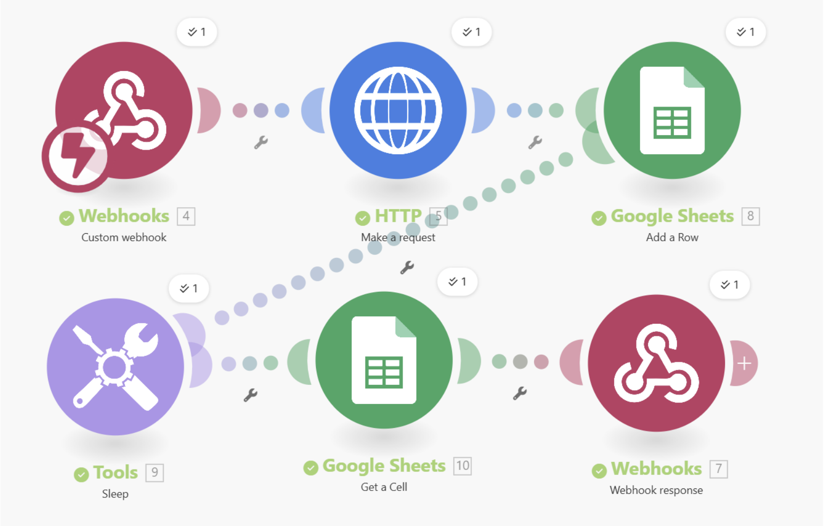
- **Feature:** Implemented a dual-output system displaying English text on the LCD and Korean translation on the Serial Monitor simultaneously.
- **Tech:** Integrated Google Sheets translation functions within the server-side proxy pipeline, enabling multi-language support without consuming local ESP32 memory resources.

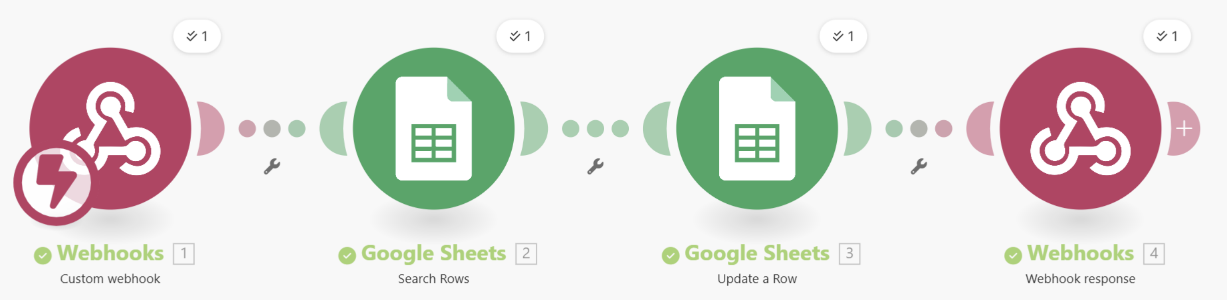
✅ Dynamic Category Selection

- **Feature:** Developed an interactive menu interface using a 4x4 Keypad to filter content.
- **Tech:** Mapped physical key inputs to dynamic API query parameters (e.g., ?category=Programming), allowing users to customize data fetching in real-time.

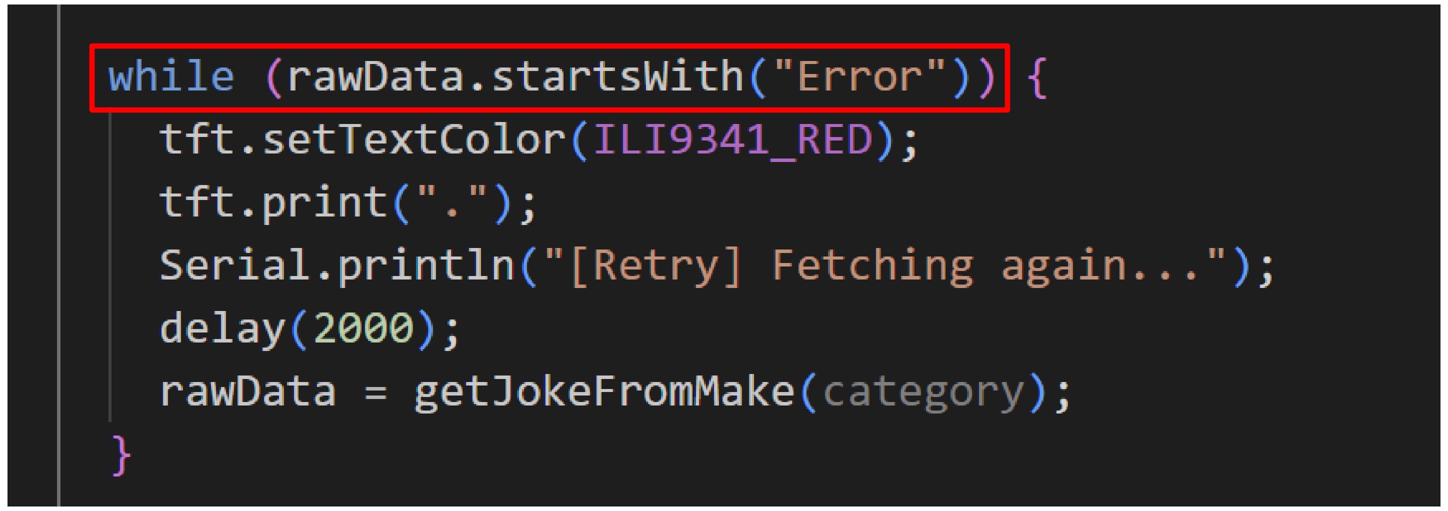
🛡️ Robust Proxy Architecture & Fault Tolerance

- **Solution:** Overcame ESP32 hardware limits (Stack Overflow) by offloading JSON parsing and SSL tasks to a Make.com proxy.
- **Stability:** Engineered an infinite retry mechanism that detects network failures (Error response) and automatically re-attempts connections, ensuring continuous system availability.





Project Page: https://joohyun365.github.io/IoT-Project-Joker-B/



```
while (rawData.startsWith("Error")) {
  tft.setTextColor(ILI9341_RED);
  tft.print(".");
  Serial.println("[Retry] Fetching again...");
  delay(2000);
  rawData = getJokeFromMake(category);
}
```

Repeat until success

Member-2 Task Details

02

Member-2 Name: 강정후

Discuss the member task and role in the project

🎭 Physical Reaction Design

- Designed and implemented laughing motion feedback using servo motors and buzzer
- Mapped user ratings (1–5) to different sound patterns and motion intensity

🔊 Implementation Result

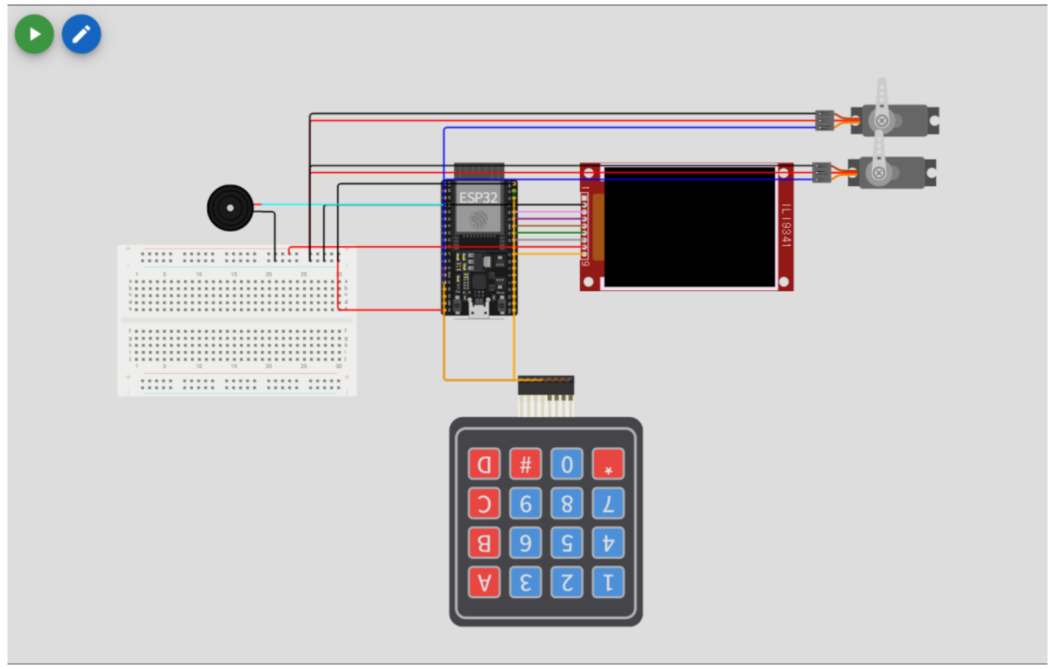
- Buzzer-based laughter successfully implemented
- Different ratings trigger clearly distinguishable audio reactions
- Provides immediate and intuitive emotional feedback to the user

⚠️ Technical Issue & Decision

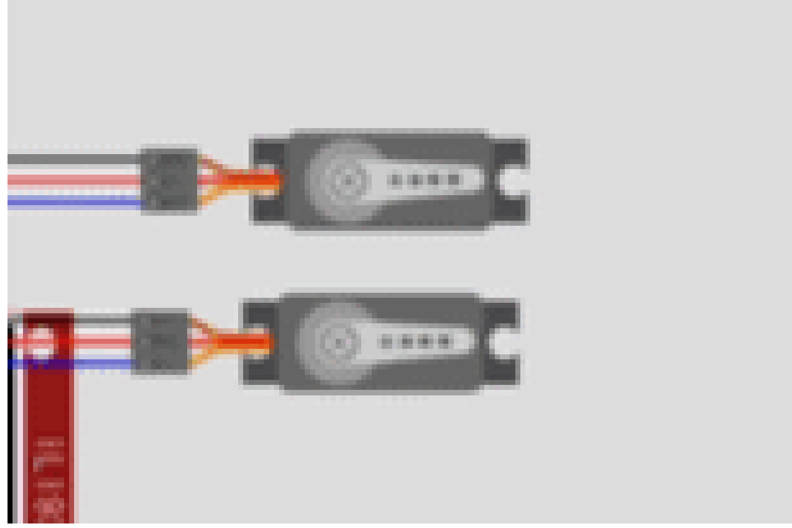
- When servo motors were connected, unexpected and non-deterministic communication errors occurred
- The issue affected network stability and cloud communication
- Due to time and system reliability constraints, servo motors were removed in the final version

✅ Final Choice

- Prioritized system stability and core functionality
- Final system uses buzzer-only laughing feedback



Project Page: https://kjhu1211-cpu.github.io/IoT-000B/



Member-3 Task Details

03

Member-3 Name: 김태연

Discuss the member task and role in the project

👑 Rating system

1. Enter a score from 1 to 5 using the keypad
2. Record in Google Sheet using proxy pipeline
3. Automatically sort rankings using triggers
4. Pass it back to esp32 through proxy

⌚ Last Time updated

- Shows the time elapsed from the moment a joke is selected on the menu screen
- Record the time when the joke was fetched using millis()

👍 Completeness of task

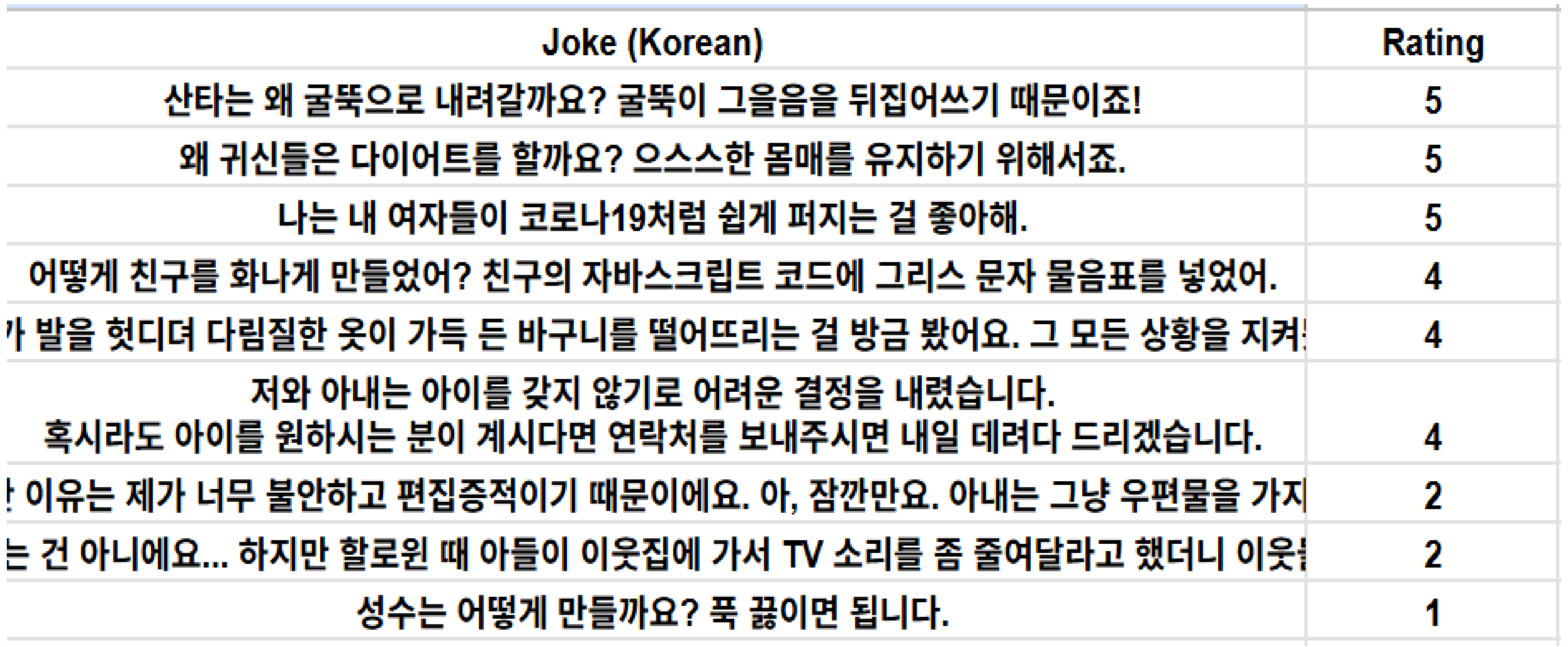
- **Rating system :** Steps 1-3 went well, but a problem occurred in step
- **Timer :** works well

😨 Problems during the process

- Problem with connecting to https in wokwi simulator

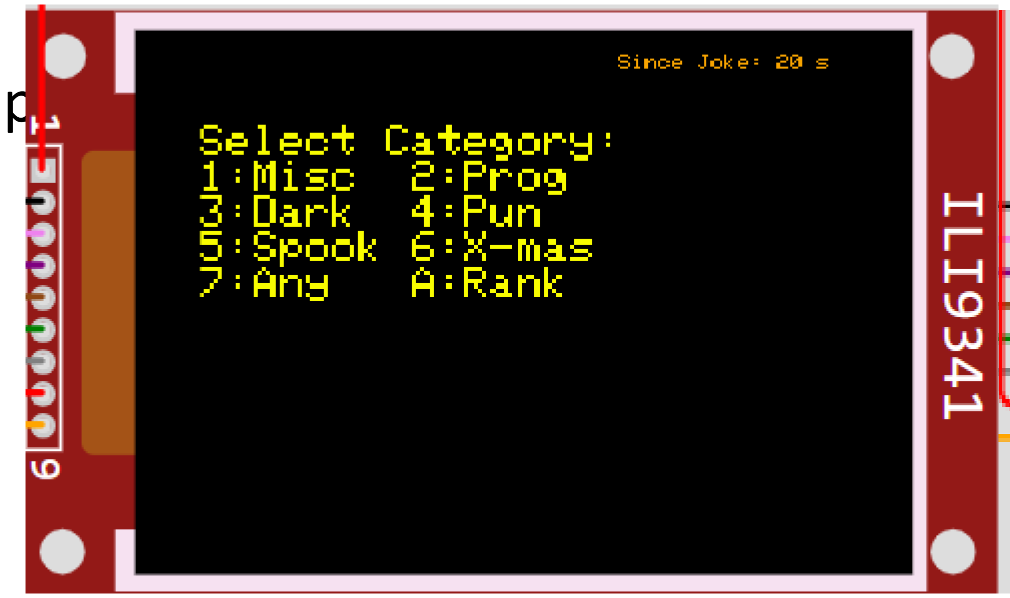
✅ Solution I thought

- Because of a limitation of the wokwi simulator, so use the actual esp32 model to solve the problem



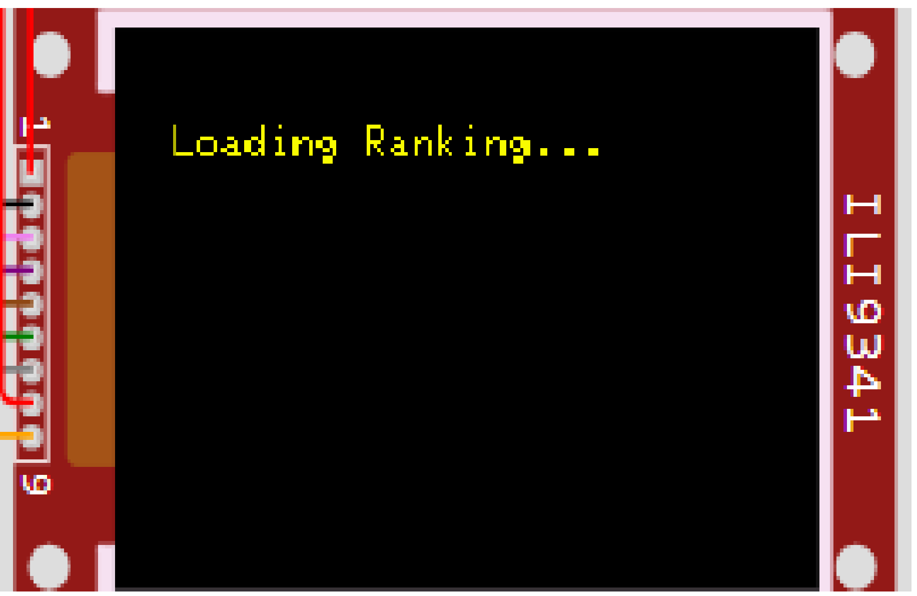
Joke (Korean)	Rating
산타는 왜 굴뚝으로 내려갈까요? 굴뚝이 그을음을 뒤집어쓰기 때문이죠!	5
왜 귀신들은 다이어트를 할까요? 으스스한 몸매를 유지하기 위해서죠.	5
나는 내 여자들이 코로나19처럼 쉽게 퍼지는 걸 좋아해.	5
어떻게 친구를 화나게 만들었어? 친구의 자바스크립트 코드에 그리스 문자 물음표를 넣었어.	4
가 발을 헛디뎌 다림질한 옷이 가득 든 바구니를 떨어뜨리는 걸 방금 봤어요. 그 모든 상황을 지켜	4
저와 아내는 아이를 갖지 않기로 어려운 결정을 내렸습니다. 혹시라도 아이를 원하시는 분이 계시다면 연락처를 보내주시면 내일 데려다 드리겠습니다.	4
이유는 제가 너무 불안하고 편집증적이기 때문이에요. 아, 잠깐만요. 아내는 그냥 우편물을 가지	2
는 건 아니에요... 하지만 할로윈 때 아들이 이웃집에 가서 TV 소리를 좀 줄여달라고 했더니 이웃	2
성수는 어떻게 만들까요? 푹 끓이면 됩니다.	1

Project Page: https://leo3898.github.io/IoT-000B/



```
                    Since Joke: 20 s

Select Category:
1:Misc   2:Prog
3:Dark   4:Pun
5:Spook  6:X-mas
7:Any    A:Rank
```



```
Loading Ranking...
```

Live Demo of the Project

- Show in the class live demo of your Project

Q&A Session