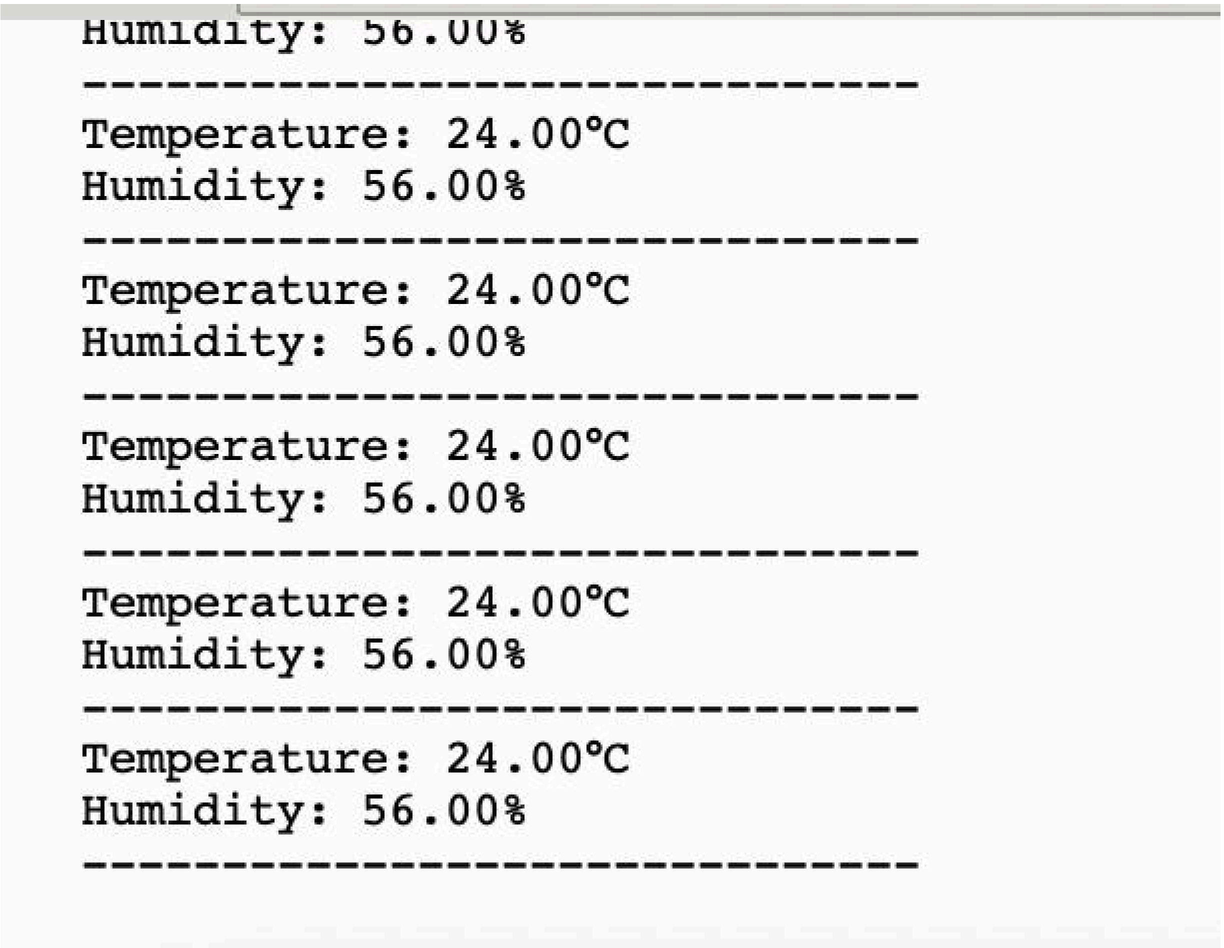
5. Tasks & Checkpoints

Task 1-Sensor Read & Print (10 pts)

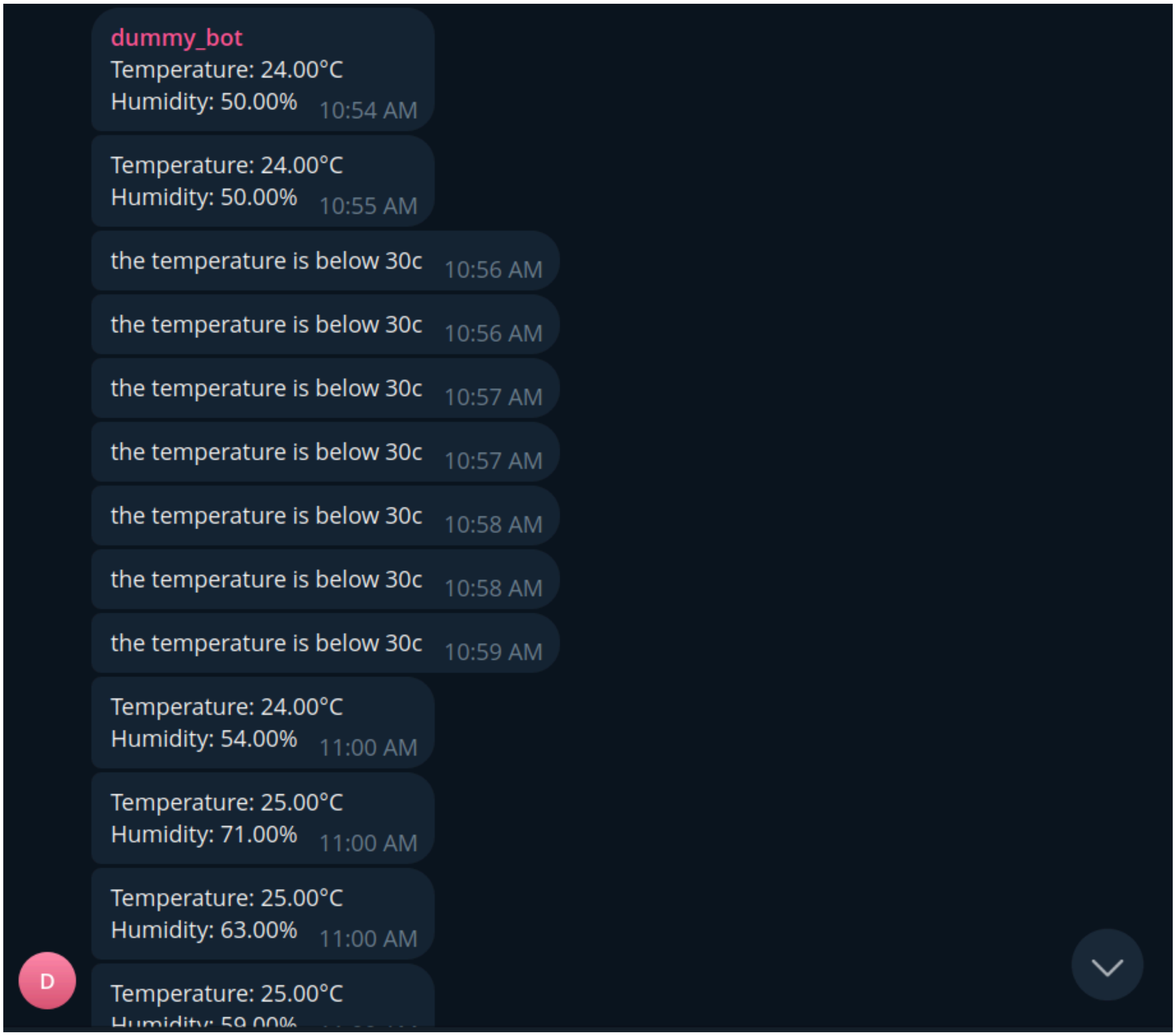
- Read DHT22 every 5 seconds and print the temperature and humidity with 2 decimals.
- Evidence:



```
Humidity: 56.00%
-------------------------------
Temperature: 24.00°C
Humidity: 56.00%
-------------------------------
Temperature: 24.00°C
Humidity: 56.00%
-------------------------------
Temperature: 24.00°C
Humidity: 56.00%
-------------------------------
Temperature: 24.00°C
Humidity: 56.00%
-------------------------------
Temperature: 24.00°C
Humidity: 56.00%
-------------------------------
```

Task 2-Telegram Send (15 pts)

- Implement send_message() and post a test message to your group.
- Evidence:



dummy_bot

Temperature: 24.00°C
Humidity: 50.00% 10:54 AM

Temperature: 24.00°C
Humidity: 50.00% 10:55 AM

the temperature is below 30c 10:56 AM

the temperature is below 30c 10:56 AM

the temperature is below 30c 10:57 AM

the temperature is below 30c 10:57 AM

the temperature is below 30c 10:58 AM

the temperature is below 30c 10:58 AM

the temperature is below 30c 10:59 AM

Temperature: 24.00°C
Humidity: 54.00% 11:00 AM

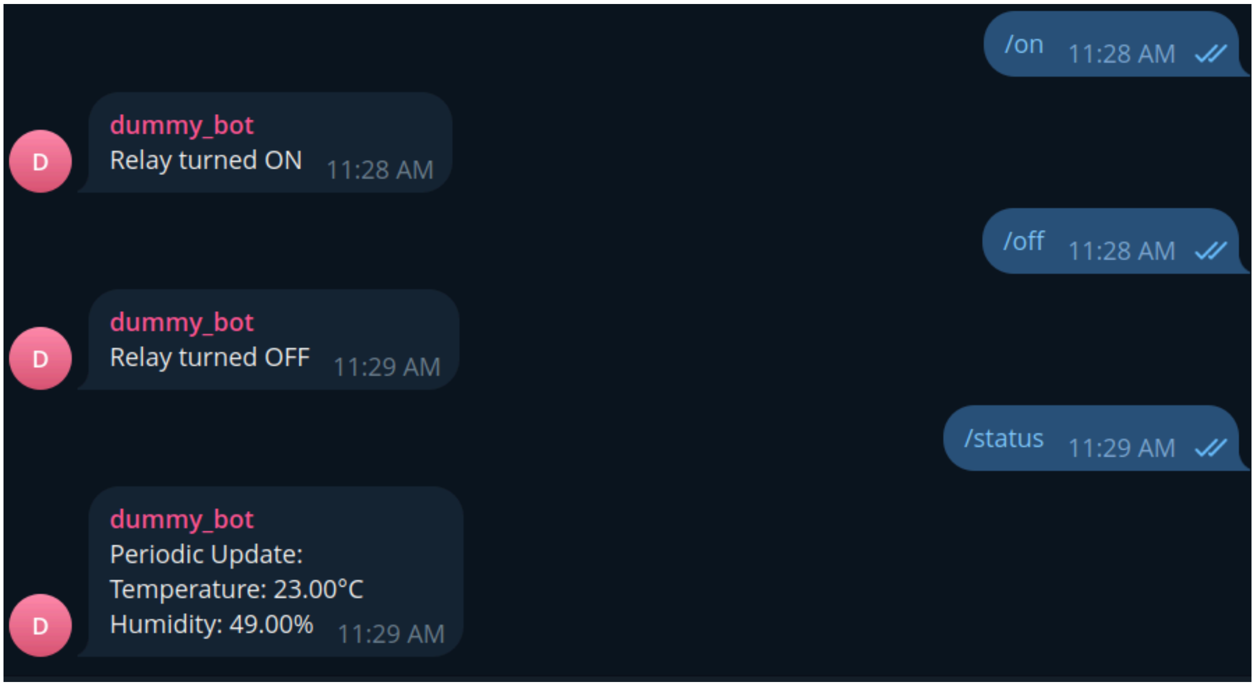
Temperature: 25.00°C
Humidity: 71.00% 11:00 AM

Temperature: 25.00°C
Humidity: 63.00% 11:00 AM

Temperature: 25.00°C
Humidity: 59.00%

Task 3-Bot Command (15 pts)

- Implement /status to reply with current T/H and relay state.
- Implement /on and /off to control the relay.
- Evidence: chat screenshot showing all three commands working.



/on 11:28 AM

dummy_bot
Relay turned ON 11:28 AM

/off 11:28 AM

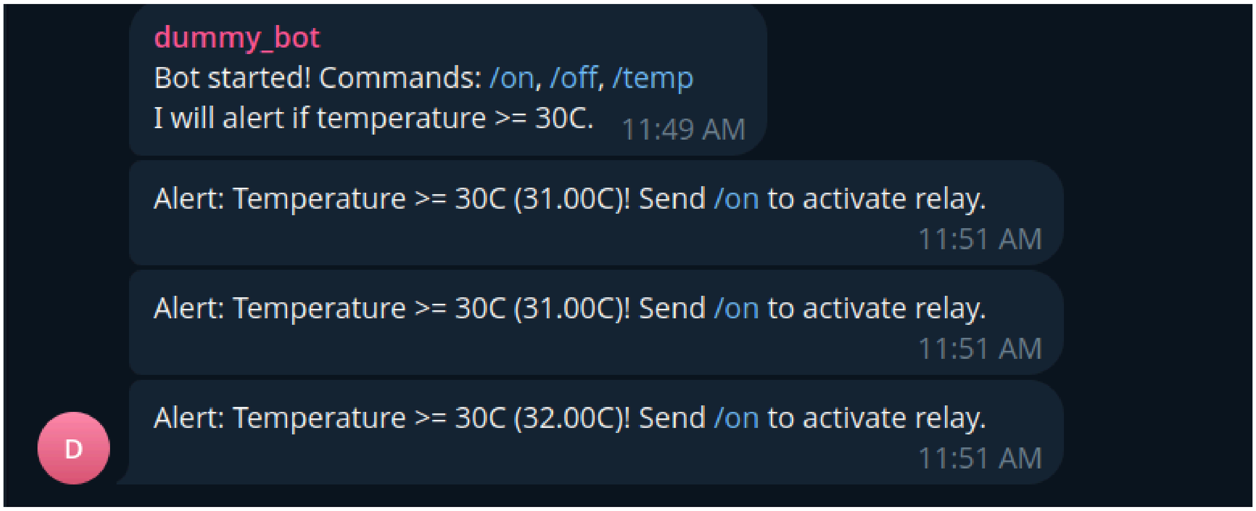
dummy_bot
Relay turned OFF 11:29 AM

/status 11:29 AM

dummy_bot
Periodic Update:
Temperature: 23.00°C
Humidity: 49.00% 11:29 AM

Task 4-Bot Command (20 pts)

- **No messages** while T < 30 °C.



dummy_bot
Bot started! Commands: /on, /off, /temp
I will alert if temperature >= 30C. 11:49 AM

Alert: Temperature >= 30C (31.00C)! Send /on to activate relay. 11:51 AM

Alert: Temperature >= 30C (31.00C)! Send /on to activate relay. 11:51 AM

Alert: Temperature >= 30C (32.00C)! Send /on to activate relay. 11:51 AM

- If **T ≥ 30 °C** and relay is **OFF**, send an alert **every loop** (5 s) until /on is received.
- After /on, **stop alerts**. When **T < 30 °C**, turn relay **OFF automatically** and send a one-time "auto-OFF" notice.
- Evidence: short video (60–90s) demonstrating above behavior.

Task 5-Robustness (10 pts)

- Auto-reconnect Wi-Fi when dropped.

- Handle Telegram HTTP errors (print status; skip this cycle on failure).
- Avoid crashing on DHT OSError (skip cycle).

Task 6-Document(30 pts)

- **README.md** with wiring diagram/photo, configuration steps (token, chat id), and usage instructions.
- Include a block diagram or flowchart of your loop/state.

6. Submission & Academic Integrity

Submit a **private GitHub repo** (add instructor as collaborator). Include:

- Source code (.py files)
- README.md with setup/usage and wiring photo
- **Screenshots** of Telegram chat (/status, alerts)
- **Short demo video** (link) showing behavior under T ≥ 30 °C then cool-down