

RFID login/registration demo

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1. Project Description
2. Protocol Description
 - 2.1 Registration
 - 2.2 Login
 - 2.3 Communication Protocol

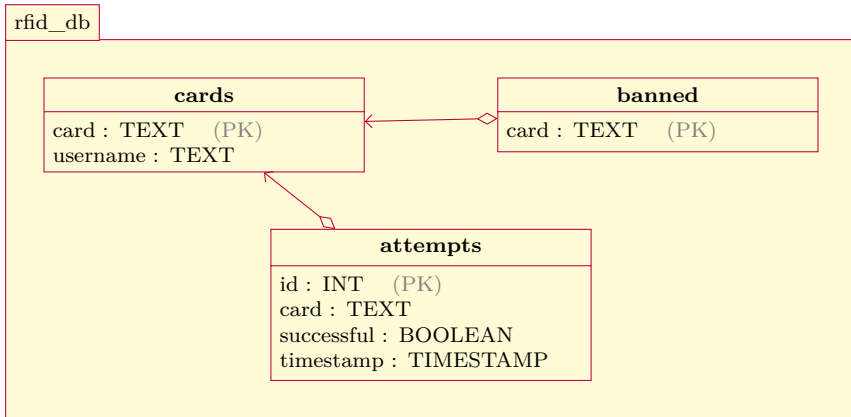
Introduction



- ▶ A robust yet user-friendly registration and login system
- ▶ MQTT-based communication between the Raspberry Pi and Flask server
- ▶ A centralized database for banned users



Database structure





Registration Workflow

- ▶ The user enters a desired username.
- ▶ The Flask server publishes an MQTT message to initiate scanning on the Raspberry Pi.
- ▶ The user has up to three attempts to register. Registration will fail if:
 - ▶ The card or username already exists.
 - ▶ The card is listed in the banned-users database.

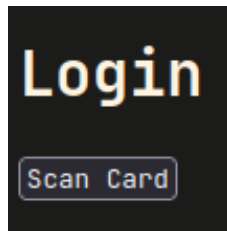
Register

Username: Register



Login Workflow

- ▶ The user presses the scan button to begin authentication.
- ▶ The system verifies that the card:
 1. Is registered in the database.
 2. Is not present in the banned-users list.



RFID Communication Protocol



- ▶ The Flask server starts the sequence by publishing a “start” message via MQTT.
- ▶ The Raspberry Pi subscribes to the corresponding Mosquitto broker topic.
- ▶ A 3-second window opens for the RFID scan.
- ▶ Upon a successful scan, the Raspberry Pi publishes the RFID tag data with QoS=1.

Questions?