RFID System Database Structure (for HR Integration)

1. rfid_cards (Main Card Table)

This table stores the current status and owner of each RFID card.

Fields:

- rfid_id: Unique RFID tag ID

- current_staffid: The employee currently assigned to this card

- status: RECEIVED / RETURNED / MISSING

- issued_at: Time the card was issued

- updated_at: Last update time

Used to determine who is using which card during scanning.

2. rfid_card_history (Card Assignment History)

This table keeps a record of which employees have used a card in the past.

Fields:

- rfid_id: RFID tag ID

- staffid: Employee who used the card

- assigned_at: When the card was assigned

- returned_at: When the card was returned (NULL if still assigned)

Used by HR to trace card usage history.

3. staff_list / staff_list_test (Employee Master Data)

This table contains core employee information.

Fields include:

- staffid: Employee ID (primary key)

- staffname: Name

- factory: M1 / M2 / M3

- status_rfid: Whether the employee is currently assigned an RFID card

Used to cross-reference employee information if needed during scanning.

System Workflow

1. When a card is scanned, system looks up rfid_cards to get current_staffid.

2. If needed, staff_list provides full employee details.

3. If card ownership changes, rfid_cards is updated and a new record is inserted into rfid_card_history.

4. Cards marked as MISSING or RETURNED are excluded from scanning use.

Notes for HR System Integration

- Assign card to new employee --> update rfid_cards + insert into rfid_card_history

- Employee returns card --> update rfid_cards.status + rfid_card_history.returned_at

- Mark card as lost --> rfid_cards.status = 'MISSING'

Only basic employee information (staff_list) needs syncing from HR to RFID system.

Card assignment logic is fully handled by the RFID system.