Automation, Alerts & Report Generation

(Weekly / Monthly Reports – Simple Explanation with Diagrams)

This document explains **how automation works** in your product: - Alerts - Notifications - Weekly reports - Monthly reports

It is written in **simple language**, step by step, with **clear diagrams**, so you can **build it confidently**.

This system works **alongside** the Dashboard Chatbot but also runs **automatically in the background**.

---

1. What Is the Automation System?

The automation system is a **background engine** that: - Runs on a schedule - Checks company data - Detects conditions - Sends alerts or reports automatically

Think of it as:

> **An AI-powered monitoring and reporting assistant**

---

2. Who Uses Automation?

Users

- Company Admins
- Managers
- Founders

What They Want

- Get notified when something goes wrong
- Receive regular performance summaries
- Avoid checking dashboards manually

---

3. Types of Automation (MVP Scope)

1️⃣ Alerts (Event-based)

Triggered when a condition is met.

Examples: - Orders drop below 50/day - Refunds spike by 20%

2️⃣ Reports (Time-based)

Triggered on a fixed schedule.

Examples: - Weekly sales report - Monthly business summary

---

4. High-Level Automation Architecture

```
Scheduler (Cron Job)
        ↓
Load Active Automations
        ↓
Run Queries (Read-only)
        ↓
Analyze Results
        ↓
Condition Met?
↙️   Yes      ↘️   No
Send Email     Stop
```

---

5. Alerts Flow (Step-by-Step)

5.1 Alert Creation (From Dashboard Chat or UI)

User says:

> "Alert me if daily orders drop below 50"

System extracts: - Metric: orders - Time window: daily - Condition: < 50 - Notification: email

Stored as:

```
Alert Rule
----------------
company_id
metric: daily_orders
condition: <
threshold: 50
frequency: daily
active: true
```

5.2 Alert Execution Flow

```
Daily Scheduler
   ↓
Fetch Active Alerts
   ↓
For each alert:
   ↓
Run SQL Query
   ↓
Evaluate Condition
   ↓
If condition true → Send Email
```

5.3 Example Alert SQL

```sql
SELECT COUNT(*)
FROM orders
WHERE created_at::date = CURRENT_DATE;
```

5.4 Alert Notification Example

Subject: ⚠️Daily Orders Alert

Message:

> Orders dropped below 50 today. Only 37 orders were recorded.

---

6. Weekly / Monthly Report Flow

Reports are **scheduled summaries**, not instant alerts.

6.1 Report Creation

User selects: - Report type: Weekly / Monthly - Metrics: orders, revenue, refunds - Recipients

Stored as:

```
Report Config
----------------
company_id
type: weekly
metrics: [orders, refunds]
recipients: [email]
active: true
```

6.2 Report Generation Flow

```
Weekly / Monthly Scheduler
   ↓
Fetch Active Reports
   ↓
Run Predefined Queries
   ↓
Analyze Trends
   ↓
Generate Charts
   ↓
AI Summary
   ↓
Send Email / PDF
```

---

7. Weekly Report Template (Example)

Subject: 🈂️Weekly Performance Report

Includes: - Total orders this week - Comparison vs last week - Trend chart - Top insight

AI Summary Example:

> Orders decreased by 12% compared to last week, mainly due to lower activity on Sunday.

---

8. Monthly Report Template (Example)

Subject: 🆚Monthly Business Summary

Includes: - Key metrics overview - Best & worst performing days - Major spikes or drops - One recommendation

AI Summary Example:

> Refunds increased by 18% this month, mainly driven by Product A. Consider reviewing quality issues.

---

9. Full Automation Diagram (End-to-End)

```
Time Trigger
   ↓
Scheduler
   ↓
Load Company Rules
   ↓
Run SQL Queries
   ↓
Analyze Results
   ↓
AI Explanation
   ↓
Send Email / Notification
```

---

10. Safety & Control

✔️Read-only DB access ✔️Company-scoped rules ✔️Enable / disable anytime ✔️No data modification

---

11. Why This Design Is Important

- Reduces manual monitoring
- Gives proactive insights
- Increases SaaS value
- Makes product "sticky"

---

12. One-Line Summary

> **The automation engine continuously monitors company data, detects important conditions, and delivers AI-generated alerts and reports on a scheduled basis, without manual intervention.**

---

13. Interview-Ready Explanation

You can say:

> “I built an automation system that runs scheduled analytics on company data, triggers alerts based on conditions, and generates weekly and monthly AI-powered reports, all using safe, read-only database access.”

This shows **real enterprise thinking**.