

Project Report: Leave Request Approval Automation Using Google Forms, Google Sheets & n8n

1. Introduction

Manual leave management processes often lead to inefficiencies, delays, and errors. The goal of this project was to automate the employee leave request and approval workflow using no-code/low-code tools, ensuring a faster, error-free, and trackable process.

This report documents the complete transformation from a manual approval process to an automated system using Google Forms, Google Sheets, and n8n.

2. Manual Process Overview

Step-by-Step Manual Flow:

1. Employee sends leave request via email or message.
2. Manager manually reviews the request and replies back.
3. HR tracks the request manually in an Excel or Google Sheet.
4. Final status (Approved/Rejected) is communicated to the employee by HR.
5. Follow-ups and escalations are done manually if no timely response is received.

Challenges in Manual Process:

- Delayed approvals due to manual follow-ups.
 - No centralized dashboard or tracker.
 - Repetitive and error-prone data entry by HR.
 - Lack of auditability or request history.
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3. Automation Overview

The automation eliminates all manual steps using the following toolchain: - **Google Forms** – for request submission. - **Google Sheets** – for recording and tracking. - **n8n** – for automation logic, triggers, conditional workflows, and email communication.

The entire flow is event-driven and requires no human intervention post submission.

4. Key Benefits After Automation

- **80% faster processing** of leave approvals.
- **No manual HR intervention** needed.

- **One-click approvals** for managers.
 - **Centralized leave tracker** with real-time updates.
 - **Scalable** to any number of employees or departments.
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5. Stakeholders Benefited

- **Employees** – easy and consistent leave submission.
 - **Managers** – approve or reject with one click.
 - **HR Department** – zero manual work, fully trackable records.
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6. Automation Workflow – Step-by-Step

Step 1: Google Form Setup

- Fields: Name, Email, Department, Start Date, End Date, Reason, Submission Timestamp
- Linked automatically to Google Sheet ("Form Responses 1")

Step 2: Trigger n8n on New Submission

- Use **Google Sheets Trigger Node**
- Trigger: New row added

Step 3: Format and Enrich Data (Set Node)

- Fields added:
- `requestId = leave_{{Employee ID}}`
- `noOfDays = Calculated (End Date - Start Date + 1)`
- `status = "Pending"`
- `submittedDate = Form Timestamp`

Step 4: Append to Leave Tracker

- Use **Google Sheets → Append Row** node
- Append fields to a new sheet: `Leave_Tracker`

Step 5: Identify Manager Based on Department

- Use **Switch Node** or Google Sheet lookup

Step 6: Generate Approve/Reject Links

- Construct webhook URLs using Set/HTTP Request Node
- Example:
 - `https://n8n.example.com/webhook/leave_approval?requestId=123&decision=approve`
 - `https://n8n.example.com/webhook/leave_approval?requestId=123&decision=reject`

Step 7: Send Email to Manager

- Use **Gmail Node**
- Content includes request summary + Approve/Reject links

Step 8: Capture Decision via Webhook

- Use **Webhook Node**
- Extract parameters: requestId, decision

Step 9: Update Leave Tracker Sheet

- Use **Google Sheets → Read and Update Row**
- Match requestId
- Update status and add decision timestamp

Step 10: Notify Employee of Final Status

- Use **Gmail Node**
 - Email includes status (Approved/Rejected) and message
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7. Advantages of the Automated System

- Eliminates manual communication delays.
 - Easy for managers to respond.
 - Fully auditable and trackable in real-time.
 - Reusable template for other workflows (expense approval, travel requests).
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8. Limitations and Considerations

- Requires stable connection to Google services and n8n instance.
 - Email delivery depends on proper configuration of Gmail node.
 - Scalability needs testing for large organizations.
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9. Conclusion

The automation of the leave approval process significantly improves speed, accuracy, and user experience. With minimal setup, organizations can streamline approvals, reduce HR load, and ensure accountability across departments. This workflow is easily extendable to other business functions, proving the power of low-code automation.

End of Report