

Procurement Request Automation System

1. Overview / Summary

The **Procurement Request Automation System** automates the entire process of requesting, reviewing, and approving procurement items within an organization.

Using **Google Sheets**, **Apps Script**, and **Gmail**, this system enables employees to submit requests directly from a Google Sheet. The script generates unique **Request IDs**, triggers email notifications to the approver, and allows the approver to **Approve**, **Decline**, or **Hold** the request directly from their email — with real-time updates reflected back in the sheet.

If a request is put **On Hold**, the system automatically generates a **Re-send link** for re-submission.

2. Goals & Objectives

Primary Goals

- To eliminate manual email and tracking processes for procurement approvals.
- To ensure real-time synchronization between requesters, approvers, and Google Sheets.
- To enable one-click actions (Approve / Decline / Hold) directly from Gmail.

Success Criteria

- 100% automated approval workflow (no manual updates).
- Request IDs auto-generate in sequential order.
- Email triggers correctly display actions and tables.
- Approval actions instantly update the sheet's status.

3. Target Users & Personas

User Type	Description	Key Actions
Requester (Employee)	Submits new item requests	Adds new row in Sheet → Clicks “Submit Request”
Approver (Manager/Procurement Head)	Reviews & approves via email	Approves, Declines, or Holds requests
Admin	Oversees system	Monitors Sheet, tracks Request IDs, validates flow

4. User Journey

- **Requester** enters Item details in the sheet:
 - Item Name
 - Description
 - Quantity
 - Priority
- Clicks **Submit Request** → triggers script.
- Script **generates unique Request ID** and marks the request as **Submitted (Pending)**.
- System **sends email** to approver with action buttons.
- **Approver** clicks **Approve / Decline / On Hold** from email.
- Google Apps Script updates the status in the Sheet.
- If “On Hold,” the sheet auto-generates a **Re-send button/link**.
- **Requester** clicks “Re-send” → Email re-triggers to approver.

5. Automation Logic / Bot Behavior

Bot Task	Trigger	Action	Result
Generate Request ID	On Submit	Creates sequential ID PR_FYZ_24-25_001	Unique tracking per request
Email Notification	On Submit	Sends formatted HTML email with action buttons	Approver receives actionable email
Approval Handler	Approver clicks URL	doGet() identifies action param and updates status	Sheet updated automatically
Re-send Handler	On Hold	Adds “↺ Re-send” hyperlink	Allows requester to re-trigger
Follow-up Mail	On any action	Sends confirmation to requester	User notified of status

6. Core Features

Feature	Description	Automation Role
Request Submission	Adds a procurement request	Bot validates submission & generates ID
Preview Dialog	Shows item summary before submit	Confirms final submission
Email Notification	Sends formatted table email	Bot handles dispatch
Approval Buttons	Approve / Decline / Hold	Direct Gmail actions trigger backend updates
Re-send Logic	Auto link on “Hold”	Bot injects link formula
Status Updates	Auto status change in sheet	Managed via doGet() function
Follow-up Mail	Sends confirmation	Keeps requester informed

7. Technical Requirements

Component	Technology	Description
Platform	Google Workspace (Sheets + Gmail)	Frontend interface & storage
Script	Google Apps Script (V8)	Core automation & backend logic
Data Store	Google Sheet	Acts as database
Communication	Gmail (HTML emails)	Email-based interaction
Frontend	Sheets UI Modal	Used for preview & confirmation

8. Integrations

Integration	Purpose
Gmail API / MailApp	Sends HTML formatted approval emails
Google Apps Script HTML Service	Renders modal previews and confirmation dialogs
doGet() Web App Endpoint	Handles approval URLs in emails
Session.getActiveUser()	Captures logged-in requester email
Google Sheets API	Updates and retrieves request data dynamically

9. Logic and Data Flow

Input:

- User fills: Item, Description, Quantity, Priority


Process:

- Validate submission
- Generate Request ID
- Save requester email and mark as “Submitted”
- Send formatted email to approver

Output:

- Email delivered with Approve/Decline/Hold
 - Click updates sheet instantly
 - Requester receives confirmation mail
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10. UI/UX Requirements

UI Component	Description
Modal Dialog	Shown before submitting (preview table + confirm/cancel buttons)
Sheet Columns	Structured with headers (Request Date, Item, Quantity, Priority, etc.)
Action Buttons	Visible in email as colored buttons
Re-send Link	Inserted as clickable hyperlink “  Re-send”
Status Icons (optional)	Could be added for better visual feedback

11. Acceptance Criteria

Scenario	Expected Result
User submits a new request	Request ID generates, status = Pending
Approver clicks Approve	Sheet updates, requester gets “Approved” mail
Approver clicks Decline	Sheet updates, requester gets “Declined” mail
Approver clicks On Hold	Sheet updates, “Re-send” button appears
Requester clicks Re-send	Email re-triggers, status resets to Pending

12. Error Handling / Edge Cases

Scenario	Behavior
Duplicate submission	Alert shown "Request already submitted."
Missing WEB_APP_URL	Script throws descriptive error
No row found for Request ID	"✗ Request ID not found." message in doGet
Empty sheet	Prevents submit action
Email delivery failure	MailApp logs error (handled by Google)

13. Timeline & Milestones

Phase	Description	Status
Phase 1	Sheet column setup + basic script	✔ Complete
Phase 2	Modal dialog + Request ID generator	✔ Complete
Phase 3	HTML Email Template + Approver Links	✔ Complete
Phase 4	doGet() approval handling	✔ Complete
Phase 5	Re-send logic & follow-up	✔ Complete
Phase 6	UI Polish + GitHub image assets	✔ Complete

14. KPIs / Metrics

Metric	Target
Average approval turnaround	< 1 hour
Error-free submissions	100%
Successful email triggers	99%
Sheet-Email sync accuracy	100%
Requester satisfaction (survey)	4.5/5

15. Future Scope

Future Feature	Description
Multi-level Approval	Add 2-step chain (Manager → Director)
Slack/Teams Integration	Notify team channels
Analytics Dashboard	Show request statistics
Mobile-friendly UI	Use Google AppSheet for front-end
Auto Purchase Date entry	Track procurement completion

16. Appendix

- **Repository (Assets):**
 - Approved Image: 
 - Declined Image: 
 - On Hold Image: 
 - Resent Image: 
- **Naming Convention:**
PR_FYZ_24-25_001 (Prefix + Fiscal Year + Serial Number)