

End-of-Month Automation System

Category: Finance and receivables automation

Problem: Month-end invoicing and email sending required hours of manual attachment, validation, and archiving.

What I Built: Built a guided monthly flow with auto sheet creation, folder management, invoice emailing, and structured archiving.

Tools Used: Google Sheets, Google Apps Script, Google Drive API, Gmail API

Output: Automated monthly invoice sending workflow with audit tracking

End-of-Month (EOM) Automation System

Google Sheets + Drive + Gmail API

Quick backstory

This started because the month-end kept eating time in a way that felt unnecessary.

Invoices were being prepared in Drive, lists were being checked in Sheets, debtor info lived in another spreadsheet, and the actual sending was still a manual “open email, attach files, double-check, send, archive” loop. It worked, but it was repetitive, easy to mess up, and mentally tiring.

So I built a system inside the tools the team already uses, Google Sheets, Drive, and Gmail, so EOM becomes a guided flow instead of a stressful checklist.

The Problem

Every end of month looked something like this:

- Manually create a new monthly report sheet
- Copy data from one sheet to another
- Cross-check names against a separate debtor file
- Create folders for each client
- Upload invoices into the correct folders
- Draft emails one by one
- Attach PDFs manually
- Move files to archive folders after sending
- Double-check nothing was missed

If you handle 40 to 80 clients, that easily becomes 4 to 6 hours of repetitive admin work. And the bigger risk is not time. It is human error.

- Sending to the wrong client

- Missing an attachment
- Forgetting to archive
- Overwriting a previous month's sheet
- Missing someone with an outstanding balance

It works. But it is fragile.

The System I Built

Instead of treating EOM as a checklist, I turned it into a guided workflow inside Google Sheets.

Step 1: Create the Monthly “As Of” Sheet

With one menu click:

- A new monthly sheet is created from a template
- It is automatically named, for example “As of Jan 2026”
- It is placed in the correct position in the spreadsheet
- It will not create duplicates
- It stops if the sheet already contains data

This removes structural errors before the real work even starts.

Step 2: Auto-Build the EOM Debtor List

The system:

- Pulls names from the main Private Clients sheet
- Deduplicates intelligently
- Prioritizes records with notes
- Cross-checks against a separate Aged Debtors spreadsheet
- Keeps only clients with outstanding balances

- Sorts the list and hides unused rows

What used to be manual filtering across spreadsheets now takes seconds.

Step 3: Built-In Drive Sidebar for Folder Management

Inside the spreadsheet, I added a custom EOM sidebar.

Users can:

- See all client folders under the main Drive directory
- View file counts per folder
- Select a folder and upload multiple invoice files directly
- Get upload progress and clear status messages
- Avoid switching between Drive and Sheets

It turns Drive into an operational dashboard instead of a file dump.

Step 4: One-Click Invoice Sending

From a dedicated control sheet:

- A checkbox triggers email sending
- The system collects all PDFs from the client's folder
- Builds a consistent subject and message body
- Uses the company Gmail alias and signature
- Sends properly encoded attachments via Gmail API
- Archives and renames files automatically
- Logs a timestamp for audit tracking

No manual drafting. No attachment mistakes. No forgotten archive step.

The Tools Used

- Google Apps Script
- Gmail API with raw MIME construction
- Google Drive API
- Google Sheets automation
- Custom HTML and CSS sidebar interface

All built directly inside the client's Google Workspace environment.

No external software. No subscription tools.

The Measurable Result

Before automation:

- 4 to 6 hours of manual EOM processing for 50 to 80 clients
- High cognitive load
- Multiple cross-check steps
- Attachment and duplication risks

After automation:

- 30 to 60 minutes total review time
- 70 to 85 percent reduction in manual effort
- Zero duplicate monthly sheets
- Controlled email format
- Automatic file archiving
- Clear audit timestamps

That is roughly 40 to 60 hours saved per year for a small clinic or service-based business.

And that is only for EOM.

Why This Matters Beyond EOM

The same structure can be reused for:

- Automated follow-up emails
- Payment reminders
- Bulk but controlled email marketing sends
- Renewal notices
- Contract expiry alerts
- Document collection workflows
- Staff onboarding checklists
- Recurring monthly reporting

Anything that follows a predictable monthly cycle can be turned into a guided system like this.

If a business is already operating inside Google Workspace, this kind of internal automation can quietly remove hours of admin work every month without changing platforms.

It is not about adding more tools.

It is about making the tools you already use work properly.