Comparison Report: Form Data Collection Approaches

This report provides a formal comparison between four different approaches for collecting form data in web applications. Each approach is evaluated based on estimated development time, cost, deployment requirements, and security level.

1. Google Sheets + Google Drive Integration

Form data is submitted directly to a Google Apps Script API which writes data to Google Sheets. Uploaded files are stored in Google Drive, and their links are saved in the Sheet.

Factor	Evaluation
Estimated Time	3–4 hours to set up and test.
Cost	Free (requires a Google account).
Deployment	No deployment required; runs on Google's infrastructure.
Security	Moderate. Relies on Google's security but public endpoints can be risky without authentication

Summary: Easiest and cheapest for small-scale or internal use, but limited for sensitive or production data.

2. EmailJS (Client-side Email Service)

The form sends data directly from the client to EmailJS, which then emails the information to the recipient without any backend server.

Factor	Evaluation
Estimated Time	1–2 hours to configure templates and integration.
Cost	Free for limited use; paid plans for higher email volume.
Deployment	No deployment required; works client-side.
Security	Low to Moderate. Public API keys exposed in client code; not ideal for sensitive data.

Summary: Fastest setup for simple forms, but lacks strong security and attachment handling.

3. Node.js API (Custom Backend)

A backend API receives form submissions, processes or stores them, and sends notifications or emails using services like Nodemailer or SendGrid.

Factor	Evaluation
Estimated Time	6–10 hours including routes, email integration, and storage.
Cost	$5–$20/month for cloud hosting (e.g., Vercel, Render).
Deployment	Yes. Requires backend hosting.

Security	High. Full control over validation, keys, and authentication.

Summary: Most flexible and secure; suitable for production and enterprise applications.

4. PHP Script (Form API + Email)

The frontend sends form data to a PHP script that validates, processes, and sends it via mail() or SMTP.

Factor	Evaluation
Estimated Time	3–5 hours to configure script and mail settings.
Cost	Free if PHP hosting is available.
Deployment	Yes. Requires a web server with PHP.
Security	Moderate. Server-side validation possible; secure SMTP recommended.

Summary: Simple and widely supported; good for shared hosting, but less modern and needs careful sanitization.

Overall Comparison Summary

Approach	Estimated Time	Cost	Deployment	Security	Best For
Google Sheets + Drive	3–4 hrs	Free	No	Moderate	Internal or low-risk forms
EmailJS	1–2 hrs	Free / Low	No	Low–Moderate	Simple contact forms
Node.js API	6–10 hrs	$5–$20/mo	Yes	High	Professional or production use
PHP Script	3–5 hrs	Free	Yes	Moderate	Shared hosting or legacy systems