

Project Specification: All-in-One Email Marketing Platform

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1 Team Roles

Member	Responsibility
Abderrahmane Hafdane	Email Verification & Backend API
Imad	Email Finder & Backend API
Said	Email Sending & SMTP Backend API

2 Project Overview

2.1 Overview

We are developing an all-in-one email marketing platform that combines three core services:

- **Email Verification** – Verify email addresses for validity and deliverability.
- **Email Finder** – Extract professional emails based on keywords, roles, and companies.
- **Email Sending** – Send personalized cold emails with tracking and automation.

Users can:

- Choose individual services (verification, finding, or sending).
- Opt for the all-in-one package (find → verify → send in one click).
- Manage campaigns in a unified workspace.
- Leave reviews and track performance.

2.2 Project Objectives

- Create a unified platform for all email marketing steps.
- Simplify the prospecting and email sending process.
- Provide analytics and performance tracking tools.
- Ensure compliance with email regulations (GDPR, CAN-SPAM).
- Offer an intuitive and efficient user interface.

3 Core Features & Workflows

3.1 Landing Page Elements

- Service Descriptions
- Pricing Plans (Free trial, pay-per-use, subscription models)
- User Reviews & Testimonials
- Signup/Login (OAuth + Email)

3.2 Email Verification Service

Workflow:

1. Upload CSV or manually enter emails.
2. Start Verification (checks SMTP, domain validity, disposable status).
3. Download Results (CSV with Email, Status, Risk Score).

Features:

- Bulk verification (up to 10,000 emails per batch).
- Real-time API for developers.
- Spam trap detection.

3.3 Email Finder Service

Workflow:

1. Enter Keywords (e.g., "HR managers in tech startups").
2. Start Searching (scrapes LinkedIn, company websites).
3. Download Results (CSV with Email, Name, Role, Company, LinkedIn).

Features:

- AI-powered search refinement.
- Export to CRM (HubSpot, Salesforce).
- Role-based filtering (CEO, Marketing, HR).

3.4 Email Sending Service

Workflow:

1. Connect Email Account (Gmail, Outlook or SMTP).
2. Configure Message (Subject, Body, Attachments, Personalization).
3. Upload Recipients (or use found/verified emails).
4. Start Sending (with open-rate tracking).

Features:

- Cold email automation (drip campaigns).
- A/B Testing (subject lines, CTAs).
- Unlimited sending (premium users).
- Anti-spam compliance (auto-throttling, warm-up).

3.5 All-in-One Campaign (Full Automation)

Workflow:**1. Setup:**

- Define target audience (keywords, filters).
- Write email template (personalized with {First Name}).
- Configure sending settings (daily limits, follow-ups).

2. Launch:

- Finds emails → Verifies them → Sends emails (fully automated).

3. Monitor:

- Dashboard with metrics (delivery rate, opens, replies).
- Pause/Resume campaigns.

Features:

- Unlimited campaigns (enterprise users).
- AI-generated email content (optional).
- Blacklist management (avoid spam traps).

4 Technical Architecture

4.1 Frontend Stack

- **Framework:** React.js (TypeScript).
- **State Management:** Redux Toolkit.
- **UI Library:** Material-UI + TailwindCSS.
- **Main Pages:**
 - Landing Page
 - Dashboard
 - Authentication
 - Service-Specific UIs

4.2 Backend Stack

- **Framework:** Flask (Python).
- **API Type:** RESTful.
- **Authentication:** JWT (Flask-JWT-Extended).
- **Algorithms:** All algorithms have been created from scratch using Python.
 - Email Verification: SMTP checks, regex validation, domain validation, and disposable email detection.
 - Email Finder: Web scraping (BeautifulSoup/Scrapy), natural language processing (NLP) for keyword extraction.
 - Email Sender: SMTP client (smtplib) with rate limiting, email template personalization, and tracking.

4.3 API Endpoints

Authentication:

- POST /api/auth/register
- POST /api/auth/login

Email Verification:

- POST /api/verify/upload
- GET /api/verify/status/{job_id}
- GET /api/verify/results/{job_id}

Email Finder:

- POST /api/finder/search
- GET /api/finder/results/{job_id}

Email Sender:

- POST /api/sender/connect
- POST /api/sender/send

Campaign (All-in-One):

- POST /api/campaign/create
- GET /api/campaign/status/{campaign_id}

4.4 Data Storage (MVP Phase)

- users.json (credentials & preferences)
- campaigns/{user_id}.csv (tracks campaigns)
- emails_found/{user_id}.csv (scraped emails)
- verification_results/{user_id}.csv (verification logs)

4.5 Deployment

Local Machines:

- **Frontend:** npm run build → Serve via NGINX
- **Backend:** Gunicorn + Flask (gunicorn app:app)
- **Network:** Use Ngrok for temporary public URLs

5 Event Management & Workflow Logic

5.1 Single Service Flow

- User selects a service
- Inputs parameters
- Clicks "Start" → Backend processes
- Results stored → User downloads

5.2 All-in-One Flow

- User sets up campaign
- Clicks "Start Campaign" → Triggers:
 - Finder → Extracts emails
 - Verifier → Filters invalid emails
 - Sender → Sends emails (with delays)
- Real-time dashboard updates

5.3 Error Handling

- Rate Limits: Queue tasks if exceeded
- Bounced Emails: Auto-retry or mark invalid
- Spam Complaints: Pause and notify

5.4 Data Flow Example

- User form → /api/campaign/create
- **Backend:**
 - Finder → saves to CSV
 - Verifier → tags valid/invalid
 - Sender → sends emails (1/10 sec)
- React polls for updates
- Results saved to CSV/JSON

6 Roadmap

Short Term (MVP):

- Landing Page
- Email Verification
- Email Finder (basic)
- Email Sender (SMTP only)
- Workspace Dashboard

Mid Term (3-6 Months):

- LinkedIn Scraper
- AI-Powered Email Writer
- CRM Integrations
- Unlimited Sending Mode

Long Term (1 Year):

- Full Cold Email Automation
- Team Collaboration
- Compliance Tools

7 Development Schedule

Current Phase: We have completed the development of all Python algorithms for email verification, email finding, and email sending. We are now in the phase of creating the platform that utilizes these algorithms and preparing for deployment.

- **Day 1-2:** Develop the frontend interface for user interaction with the services.
- **Day 3:** Integrate the frontend with the backend APIs.
- **Day 4:** Implement the unified workspace dashboard.
- **Day 5:** Conduct comprehensive testing of the platform.
- **Day 6:** Finalize deployment setup and configurations.
- **Day 7:** Deploy the platform and perform post-deployment checks.

7.1 Platform Details

Workspace:

- A unified workspace where users can choose to use individual services (Email Verification, Email Finder, Email Sending) or opt for the all-in-one package.
- Users can manage their campaigns, configure messages, and track performance all in one place.

Service-Specific Workflows:

- **Email Verification:**
 - Users can upload a CSV file of emails or manually enter emails.
 - Click "Start Verifying" to verify the emails.
 - Results are provided in a downloadable CSV file with email status and risk score.
- **Email Finder:**
 - Users can enter keywords and a description of what they want to search for.
 - Click "Start Searching" to find emails based on the input criteria.
 - Results are provided in a downloadable CSV file with email, role, and company information.
- **Email Sending:**
 - Users can connect their email account (Gmail, Outlook, or SMTP).
 - Configure the message (subject, body, attachments, personalization).
 - Upload recipients or use found/verified emails.
 - Click "Start Sending" to send the emails with tracking.

All-in-One Package:

- Users can set up their message configuration (subject, file attachment, letter) in the workspace.
- Set up email account credentials for sending emails.
- Click "Start Campaign" to automate the process:
 - Email Finder finds emails.
 - Email Verifier verifies the existence of emails.
 - Email Sender sends the emails.
- All of this is done in one click.
- Long-term goal: Add an option to start unlimited campaigns that send emails without stopping.

8 Error Handling

- SMTP Failures: 3 retries → mark failed
- Rate Limits:
 - Finder: 100 searches/day
 - Sender: 50 emails/hour
- CSV Corruption: Validate before processing