

Submission — Tushar Singh

Executive Summary

This submission covers the implementation of Task 1 (Email Automation Agent + Tracking Dashboard) for the AveoEarth onboarding assignment. It includes a working FastAPI backend integrated with PostgreSQL and Redis, and a Next.js frontend for upload and dashboard visualization. All components are containerized using Docker and orchestrated via docker-compose.

Repository & Demo Links

- GitHub Repo: onboard-tushar
- Demo Video: *[Insert YouTube or Google Drive Link]*
- Contact: tusharsingh1616@gmail.com

Screenshots & Dashboard Preview

Screenshot 1 — *[Insert Description]*

[Image Placeholder]

Screenshot 2 — *[Insert Description]*

[Image Placeholder]

Screenshot 3 — *[Insert Description]*

[Image Placeholder]

Task 1 Summary — Email Automation Agent + Tracking + Dashboard

This system enables uploading recipient lists via CSV/XLSX, sending personalized HTML email campaigns, and tracking opens and clicks using pixel-based and redirect-based tracking mechanisms. Reminder emails are automatically triggered for users who open but do not click within 3 days.

Key APIs implemented:

- /api/upload — Upload CSV/XLSX and preview records.
- /api/campaigns/{campaign_id}/start — Start campaign sending.
- /api/campaigns/{campaign_id}/status — Retrieve metrics.
- /r/{campaign_id}/{recipient_id} — Track CTA click & redirect.
- /pixel/{campaign_id}/{recipient_id}.png — 1x1 tracking pixel for open detection.
- /api/campaigns/{campaign_id}/export — Export full campaign dataset.

Metrics shown on dashboard include Total Sent, Delivered, Opened, Clicked, CTR, and Reminder Sent Count, along with time-series trends and recipient tables.

Task 2 Summary — Blockchain & Cryptocurrency Strategy Proposal

Document attached in repository as 'Task2_Blockchain_Strategy.pdf'. It outlines:

- Blockchain-based Carbon Credit System: Secure credit creation, trading, and retirement.
- Aveo Coin (ICO): Sustainable Proof-of-Stake consensus mechanism and ecosystem roadmap.

Task 3 Summary — Technical Notes and Deep-Dive

Includes a 3-page cheat-sheet comparing SSG, SSR, ISR in Next.js and advanced FastAPI topics such as dependency injection, async design, WebSocket usage, and JWT-based auth. A small sample app demonstrates API integration between FastAPI and Next.js, with test coverage via

pytest and HTTPX.

Component	Tech Stack / Tools
Frontend	Next.js (React, TailwindCSS)
Backend	FastAPI, Celery, Redis, PostgreSQL
Mail	SendGrid API (templated HTML emails)
Deployment	Docker, docker-compose, AWS/GCP compatible
Testing	pytest, HTTPX

Conclusion

This submission demonstrates a production-ready design for email campaign automation with full tracking and dashboard visibility, alongside blockchain sustainability planning and deep technical readiness for Next.js and FastAPI.