Halal Investment Research Copilot – Project Charter

1. Executive Summary

Build a cloud-hosted, read-only decision-support platform that screens Indian and GCC equities and mutual-fund schemes for Shariah compliance, explains the reasoning in plain language, and surfaces basic performance analytics—without executing trades or giving personalised advice. The goal is to reach break-even (≈ 350 paid users) within six months while avoiding SEBI IA/RA licensing by limiting functionality to factual data and education.

2. Objectives & Success Metrics

Objective	KPI	Target (6 months)
Launch MVP	Time-to-production	≤ 6 weeks
User acquisition	Registered users	≥ 5000
Paid conversion	Pro subscribers	≥ 350
Data accuracy	Ratio calc errors	< 1%
System reliability	95th %tile API latency	< 800ms

3. Scope

3.1. In-Scope (MVP)
- Shariah-compliance screening based on AAOIFI ratios.
- Plain-English "Explain Why" panel citing numeric sources.
- Daily Movers dashboard with halal badge & filters.
- Basic performance snapshots (CAGR, 1-Y/3-Y returns, SD).
- Watch-list & rule-based alerts (compliance flip, price triggers).
- Education hub with static articles & glossary.
- Public REST API for `halal-score` endpoint.

3.2. Out-of-Scope (MVP)
- KYC, account opening, trade execution.
- Personalised buy/sell/hold recommendations.
- Portfolio P&L, tax reports.
- Derivatives, crypto, or fixed-income instruments.

4. Functional Requirements

1) **Search & Screening:** Symbol lookup, compliance verdict, ratio table, explainer.
2) **Daily Movers Board:** Top gainers/losers with halal filter, CSV export (Pro).
3) **Performance Snaps:** Chart historical price vs benchmark; download image.
4) **Watch-List & Alerts:** CRUD watch-list; alert quota per plan.
5) **Education Hub:** Markdown CMS rendered in-app; searchable FAQ.
6) **Admin Console:** Upload AAOIFI threshold changes; view audit logs.

5. Non-Functional Requirements

1) **Security:** HTTPS everywhere, JWT auth, RLS in Postgres.
2) **Compliance:** Immutable filing storage for 7 yrs; standard disclaimer on every screen.
3) **Performance:** 95th percentile < 800 ms for `/halal-score`.
4) **Scalability:** Autoscale GPU inference node to zero when idle.
5) **Observability:** Prometheus metrics; Sentry for errors; daily data-quality checks.

6. Regulatory & Compliance Considerations

1) Operate strictly as a **data publisher**, not investment adviser.
2) Display "educational only" disclaimer persistently.
3) No forward-looking statements or personalised advice.
4) Maintain audit trail of source filings and code version.

7. Technology Stack

Layer	Tooling
Backend API	Python 3.10, FastAPI, Pydantic v2
LLM Inference	vLLM + Llama-3-8B-Instruct (GPU)
Data Pipeline	Playwright/Selenium, GROBID-Finance, Pandas
Databases	Postgres + pgvector, TimescaleDB extension
Object Storage	AWS S3 (prod), MinIO (dev)
Front-end	Next.js 14 + shadcn/ui + Tailwind CSS
AuthZ	Supabase Auth (JWT)
Infra & CI/CD	Docker, Helm, GitHub Actions, AWS EKS (prod), K3d (dev)
Observability	Prometheus, Grafana, Loki, Sentry

8. MVP Deliverables

1) **Data ingestion service** with 20 NSE-50 equities + 10 MF schemes.
2) **Ratio engine micro-service** with unit tests (≥ 90 % coverage).
3) **LLM Narrator API** with deterministic prompt + citation.
4) **React dashboard:** Search, Result, Daily Movers, Watch-list.
5) **Alert engine with** SES email integration.
6) **API docs** (OpenAPI-3) + Postman collection.

9. Milestones & Timeline

Week	Sprint Goal	Key Outputs
0	Project kickoff	Charter finalised, repo & CI skeleton
1	Ingestion + ETL POC	Crawls 1 equity + 1 MF → DB
2	Ratio engine	AAOIFI calc service + tests
3	LLM Narrator	RAG prompts tuned, REST endpoint
4	Front-end MVP	Search → Results flow; deploy dev URL
5	Alerts & polish	Watch-list, emails, responsiveness
6	Beta launch	10 pilot users, feedback loop, backlog groom

10. Roles & Responsibilities

Role	Person	Responsibilities
Product Owner	Hamza Aziz	Vision, backlog priority, domain expertise
Tech Lead	Hamza Aziz	Architecture, code review, infra
AI Consultant	ChatGPT	Design docs, code snippets, troubleshooting
Front-end Dev	*TBD*	Next.js components, UX polish
QA	*TBD*	Test cases, data-quality checks

11. Risks & Mitigations

Risk	Likelihood	Impact	Mitigation
Parsing failures due to scanned PDFs	Medium	Medium	Fallback to Textract OCR; manual queue
LLM hallucination	Medium	High	Strict RAG + numerical citation tests
Regulatory change (AAOIFI thresholds)	Low	Medium	Store thresholds in DB, configurable UI
GPU cost spike	Medium	Low	Use on-prem DGX for inference off-hours

12. Assumptions

1) NSE/BSE filings remain publicly accessible.
2) Llama-3-8B inference fits in a single A10 GPU with vLLM.
3) Users accept standard "educational use only" disclaimer.

13. Glossary

1) **AAOIFI:** Accounting and Auditing Organization for Islamic Financial Institutions.
2) **RAG:** Retrieval-Augmented Generation.
3) **CAGR:** Compound Annual Growth Rate.

14. Immediate Next Steps

1) Set up GitHub repo with branch protection & CI scaffold.
2) Kick off Week-1 sprint: ingestion + ETL POC.

Document version 0.1 – generated 21 Jul 2025