SYNOPSIS -AI-Powered Investment Dashboard: Leveraging Fi Money's MCP Server for Personalized Financial Insight

Mentors –

Mr.Preshit Desai

Remarks

Team Members –

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Date of Submission- _____

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Project Synopsis

0. Cover

- **Project title:** AI-Powered Investment Dashboard: Leveraging Fi Money's MCP Server for Personalized Financial Insight
- **Team name & ID:** Team Winters (T-71)
- **Institute / Course:** GLA University/ B.Tech CS (AIML & IIOT)
- **Version:** v1.0
- **Date:** 28 Aug 2025

Revision history

Version	Date	Author	Change	
v0.1	28 Aug 2025	Ashwani Chauhan	Initial draft	

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1. Overview

• Problem Statement:

Investors often lack personalized, actionable insights for managing their finances efficiently. Traditional dashboards provide generic data without aligning with individual financial goals. This results in suboptimal investment decisions and misses opportunities for portfolio growth.

• Goal:

Build an AI-powered investment dashboard that integrates with Fi Money’s MCP (Multi-Category Portfolio) Server to deliver real-time personalized financial insights, recommendations, and portfolio optimization tailored to each user’s risk profile and investment objectives.

• Non-Goals:

Direct execution of buy/sell transactions in v1.

Full-scale regulatory compliance integration.

Multi-currency or international market support in the first version**.**

• **Value Proposition:**

AI-driven investment guidance that uses Fi Money's robust MCP infrastructure to offer real-time personalized insights, risk analysis, and growth opportunities, enabling users to make informed financial decisions without manual effort.

2. Scope and Control

2.1 In Scope

- Email verified signup/login for users.
- Integration with Fi Money's MCP Server to fetch portfolio data.
- Personalized dashboard showing portfolio overview, asset allocation, and performance insights.
- AI-driven investment recommendations based on user risk profile and goals.
- Basic analytics: ROI trends, risk vs. return, and category distribution.
- Search and filter for different investment instruments (mutual funds, equities, etc.).

2.2 Out of Scope

- Direct execution of buy/sell transactions (no order placement in v1).
- Multi-currency and international market support.
- Advanced tax planning, compliance reporting, and regulatory checks.
- Mobile applications in the first release (web only for MVP).

2.3 Assumptions

- All users have valid Fi Money accounts and consent to API data sharing.
- MCP server provides real-time portfolio data and APIs are stable.
- Pilot version will handle up to 5,000 active users with single-region hosting.

2.4 Constraints

- Development timeline: 10 weeks.
- Hosting on Fi Money's sandbox environment initially (not production).
- Team skill level: Intermediate in React.js, Node.js, TensorFlow/Keras for AI components.

2.5 Dependencies

- MCP server availability and API keys from Fi Money.
- Secure OAuth authentication for user login.
- Cloud storage for reports and historical analytics.
- SMTP service for email verification**.**

2.6 Acceptance Criteria and Sign-Off

- GIVEN a user registers with a valid Fi Money account, WHEN they log in, THEN portfolio data loads within 3 seconds.
- GIVEN a user sets an investment goal, WHEN AI analysis runs, THEN recommendations are displayed within 5 seconds.
- Sign-Off: Mentor approves demo, performance metrics achieved, and all P1 bugs resolved.

Sign-off table

Stakeholder	Role	Decision area	Signature/Approval	Date
Mr. Preshit Desai	Mentor	Scope, final acceptance	-----	28 Aug 2025

3. Stakeholders and RACI

Activity	Responsible (R)	Accountable (A)	Consulted (C)	Informed (I)
Requirements	Kush	Kush	Mentor	Team
Design	Ayush	Kush	Mentor	Team
Implementation	Ayush, Ashwani	Kush	—	Team
Testing	Ashwani	Kush	Mentor	Team
Release	Ashwani	Kush	Mentor	Dept

4. Team and Roles

Member	Role	Responsibilities	Key skills	Availability	Contact
Ayush	Product Lead	Scope, backlog, reviews	Product, APIs	10 hrs/wk	ayush.goswami_cs.aim23 @gla.ac.in
Kush	Tech Lead & Backend	Arch, APIs, security	Node, Express, SQL	10 hrs/wk	Kush.kumar_cs.aim23 @gla.ac.in
Ashwani	Frontend	React UI, state, a11y	React, TS	10 hrs/wk	ashwani.chauhan_cs.aim23 @gla.ac.in
Ashwani	QA & Docs	Test plan, E2E, docs	Playwright, writing		ashwani.chauhan_cs.aim23 @gla.ac.in

Week	Dates	Milestones	Ayush (Lead/Design/QA)	Kush (Backend)	Ashwani (Frontend)	Deliverables	Status
1	1–7 Sep 2025	Requirements Freeze	Finalize scope, user stories, and risk profile inputs; coordinate with mentor	Define MCP Server API contracts; document data requirements	Create wireframes for dashboard, login, and recommendation UI	Draft SRS (Software Requirements Specification), initial wireframes, API contracts v0	Planned
2	8–14 Sep 2025	Architecture & Setup	Review system architecture; finalize tech stack (React.js, Node.js, TensorFlow/Keras)	Design database schema; set up Node.js backend and MCP API integration	Develop UI kit (components, styles); set up React.js frontend	ERD (Entity-Relationship Diagram), API spec v1, UI kit	Planned
3	15–21 Sep 2025	Authentication Module	Identify risks; unblock dependencies (OAuth, SMTP)	Implement user signup/login APIs with OAuth; connect to SMTP for email verification	Build login/signup screens; integrate with backend APIs	Auth module (signup/login), smoke tests	Planned
4	22–28 Sep 2025	Portfolio Integration	Sync with team; review MCP data integration	Develop portfolio data fetching APIs; connect to MCP Server	Implement portfolio overview UI (charts for asset allocation, performance)	Portfolio dashboard shell, API integration tests	Planned
5	29 Sep–5 Oct 2025	Feature Set A (Recommendations)	Define AI model inputs; cut scope if needed	Implement AI recommendation engine (TensorFlow/Keras); integrate with	Build recommendation UI (display risk-based suggestions)	Feature A demo (personalized recommendations), CRUD tests for portfolio data	Planned

				portfolio data			
6	6–12 Oct 2025	Feature Set B (Analytics & Search)	Define KPIs; monitor performance	Develop search/filter APIs for investment instruments; analytics APIs (ROI, risk vs. return)	Build search UI and analytics dashboard (ROI trends, category distribution)	Feature B demo (search + analytics), performance tests	Planned
7	13–19 Oct 2025	Hardening & Testing	Mitigate risks; oversee bug fixes	Fix backend bugs; optimize API performance	Fix frontend bugs; ensure accessibility compliance	Regression test suite, test report, bug fix log	Planned
8	20–26 Oct 2025	Release Preparation	Prepare release checklist; get mentor sign-off	Write release notes; deploy to Fi Money sandbox	Polish UI; ensure <3s portfolio load time	v1.0 release, user manual, presentation slides	Planned
9	27 Oct–2 Nov 2025	User Testing & Feedback	Coordinate user testing; document feedback	Monitor API stability; address critical bugs	Fix UI issues based on feedback	User testing report, updated bug log	Planned
10	3–9 Nov 2025	Final Release & Demo	Prepare demo; get final mentor approval	Finalise backend; ensure API uptime	Finalize frontend; ensure recommendation load <5s	Final v1.0 release, demo, mentor sign-off	Planned

6. Users and UX

6.1 Personas

- New Investor Sam: A novice investor who wants to view and manage their portfolio with minimal steps; values simplicity and clear guidance.
- Goal-Oriented Investor Bella: An experienced investor who seeks personalized recommendations and quick access to analytics; values speed and precision.

6.2 Top User Journeys

- New Investor: Home → Login → View Portfolio → Explore Recommendations → Save Investment Goal.
  KPI: Complete portfolio view in ≤ 4 steps, completion rate ≥ 80%.
- Goal-Oriented Investor: Home → Search Investments → Filter by Category (e.g., mutual funds, equities) → View Recommendation Details → Review Analytics.
  KPI: Search performance (p95) ≤ 1s, click-through rate (CTR) to recommendations ≥ 15%.

6.3 User Stories

- As a New Investor, I want to view my portfolio in under 2 minutes after logging in, so I can quickly understand my financial status.
  GIVEN I am logged in with a valid Fi Money account, WHEN I access the dashboard, THEN I see my portfolio overview (asset allocation, performance) and a link to explore recommendations.
- As a Goal-Oriented Investor, I want to search and filter investment options, so I can find opportunities aligned with my goals.
  GIVEN I am on the search page, WHEN I apply filters (e.g., risk level, category), THEN I see relevant investment options within 1 second.

6.4 Accessibility & Localization

- Support keyboard-only navigation for core flows (login, portfolio view, search, recommendations).
- Ensure AA contrast ratio for all UI elements to meet accessibility standards.
- Language: English only (no localization required).
- Right-to-left (RTL) support not required.

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7. Market and Competitors

7.1 Competitor Table

Competitor	Product	Target Users	Key Features	Pricing	Strengths	Weaknesses	Our Differentiator
Wealthfront	Robo-Advisor Platform	Retail investors	Automated investing, portfolio rebalancing, tax-loss harvesting	0.25% AUM fee	User-friendly, strong automation	Limited personalization for complex goals	AI-driven insights tailored to Fi Money users' risk profiles
Zerodha Coin	Mutual Fund Platform	Indian investors	Direct mutual funds, portfolio tracking	Free (brokerage fees apply)	Low cost, large fund selection	Basic analytics, no AI recommendations	Real-time personalized recommendations via MCP Server
Groww	Investment App	Young Indian investors	Portfolio tracking, mutual funds, stocks	Free (transaction fees apply)	Simple UX, broad market access	Limited risk-based insights	Deep integration with Fi Money's MCP for seamless portfolio data

7.2 Positioning

- Unique Angle: Trust and speed for Fi Money users seeking personalized investment insights within a secure, integrated platform.
- Measurable Delta: Median portfolio load time ≤ 3s and recommendation delivery ≤ 5s vs. 10–15s on general investment platforms.

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8. Objectives and Success Metrics

- O1 Onboarding: Median signup + email verification time < 60s by 15 Oct 2025.
  KPI: Median seconds to complete signup and verification.
- O2 Portfolio Load Performance: p95 portfolio data load time ≤ 3s by 20 Oct 2025.
  KPI: p95 milliseconds for portfolio overview display.
- O3 Recommendation Completion: ≥ 80% of users who set investment goals receive personalized recommendations by 20 Oct 2025.
  KPI: Completion rate of recommendation generation.
- O4 Accessibility: Zero AA accessibility issues on core flows (login, portfolio view, recommendations) by release.
  KPI: Number of accessibility violations.

9. Key Features

Feature	Description	Priority	Dependencies	Acceptance Criteria
Auth & Email Verify	**Register/login with email (Fi Money account)**	**Must**	**SMTP, OAuth**	**GIVEN a valid email, WHEN user registers, THEN verification email sent in ≤ 5s; login successful after verification.**
Portfolio Overview	**Display portfolio data (asset allocation, performance) from MCP Server**	**Must**	**Auth, MCP Server API**	**GIVEN user is logged in, WHEN dashboard loads, THEN portfolio data displays in ≤ 3s with asset allocation and performance metrics.**
AI Recommendations	**Generate personalized investment suggestions based on risk profile and goals**	**Must**	**Auth, MCP Server, TensorFlow/Keras**	**GIVEN user sets a goal, WHEN AI processes data, THEN recommendations display in ≤ 5s.**

Search & Filters	**Search and filter investment instruments (e.g., mutual funds, equities) by category, risk, or returns**	**Must**	**Portfolio Overview**	**GIVEN a search query, WHEN filters are applied, THEN results display in ≤ 1s (p95).**
Analytics Dashboard	**Show ROI trends, risk vs. return, and category distribution**	**Should**	**Portfolio Overview, MCP Server**	**GIVEN user accesses analytics, WHEN data is loaded, THEN charts (ROI, risk, distribution) display accurately.**
Profile Settings	**Allow users to update risk profile and investment goals**	**Could**	**Auth**	**GIVEN user accesses profile, WHEN settings are updated, THEN changes are saved and reflected in recommendations.**

10. Architecture

10.1 High Level

- Clients: React Single Page Application (SPA) for web-based dashboard.
- Services: Auth service (OAuth), Portfolio service (MCP Server integration), AI Recommendation service, Analytics service.
- Data Stores: MySQL (user data, goals), Cloud storage (historical analytics, reports).
- Integrations: Fi Money's MCP Server (portfolio data), SMTP (email verification), OAuth (secure login).

10.2 API Spec Snapshot

Endpoint	Method	Auth	Purpose	Request Schema	Response Schema	Codes

/api/auth/register	POST	—	Create account	{ email, password }	201 { userId }	201, 400
/api/portfolio	GET	JWT	Fetch portfolio data	—	200 { assets[], performance, allocation }	200, 401, 404
/api/recommendations	POST	JWT	Generate AI recommendations	{ riskProfile, goals }	201 { recommendations[] }	201, 400, 401
/api/search	GET	JWT	Search investments	{ query, category, page }	200 { items[], total }	200, 400

10.3 Config and Secrets

- Use .env for local configuration, ignored by Git.
- Rotate SMTP and MCP API credentials each term.
- Restrict access to CI secrets (e.g., API keys, OAuth tokens).

11. Data Design

11.1 Data Dictionary

Entity	Field	Type	Null?	Allowed Values	Source	Notes
User	id	UUID	No	—	System	Primary key
User	email	String	No	RFC 5322	User	Unique, Fi Money account email
Portfolio	id	UUID	No	—	System	Primary key
Portfolio	assets	JSON	No	—	MCP Server	Asset allocation data

Portfolio	performance	JSON	No	—	MCP Server	ROI, returns data
Goal	id	UUID	No	—	System	Primary key
Goal	riskProfile	String	No	low, medium, high	User	Influences recommendations
Goal	target	Decimal(10,2)	No	≥ 0	User	Investment goal amount

11.2 Schemas and Migrations

- ERD included in Appendix; migrations versioned in source control.
- Rollback scripts tested on staging environment.

11.3 Privacy, Retention, Backup/DR

- PII: User name, email.
- Retention: Delete accounts after 12 months of inactivity.
- Backup/DR: Nightly backups; Recovery Time Objective (RTO): 4 hours; Recovery Point Objective (RPO): 24 hours**.**

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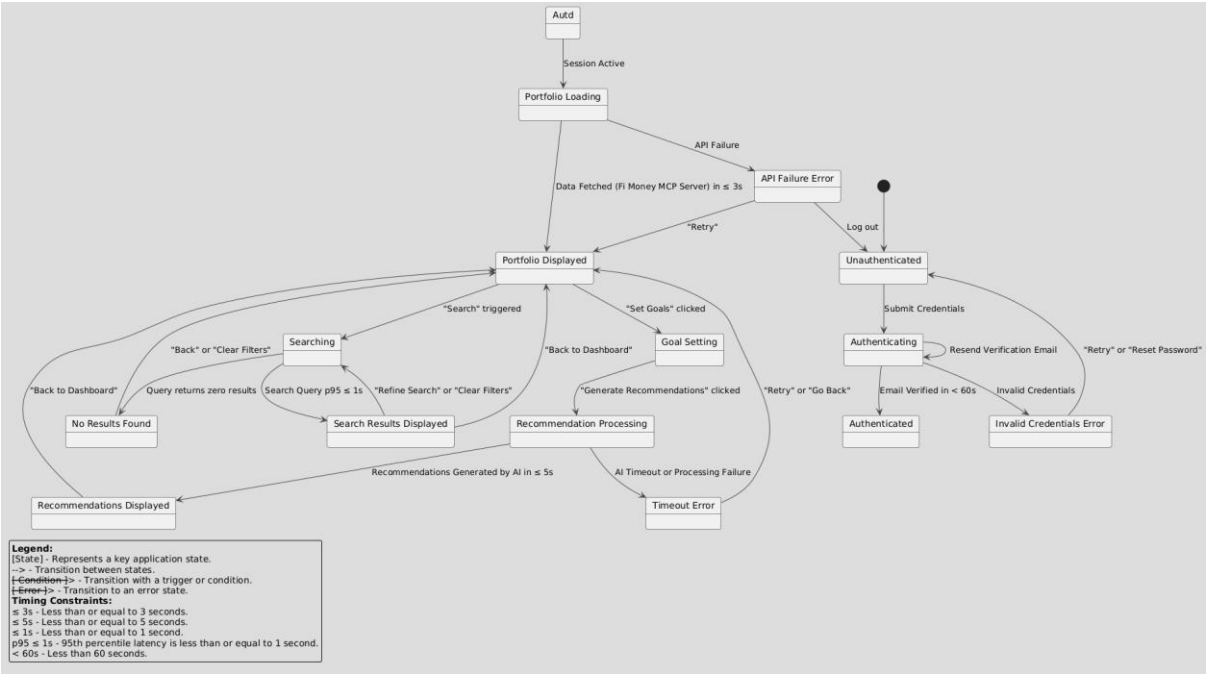
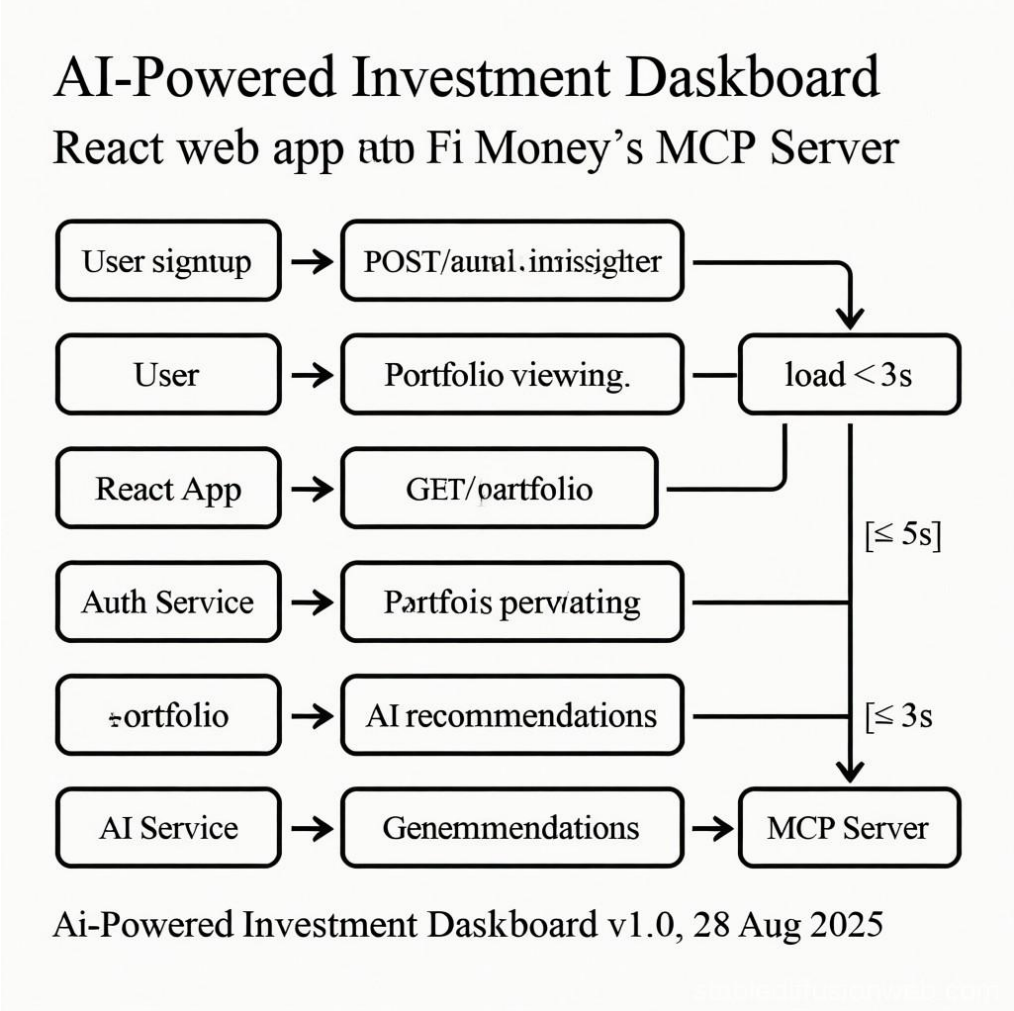
12. Technical Workflow Diagram

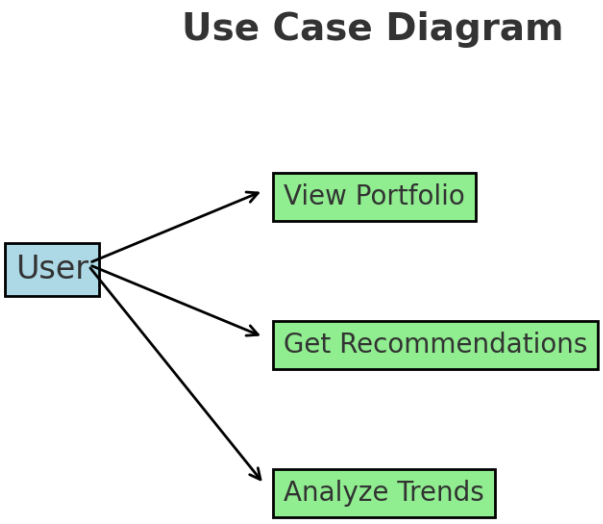
i. State Transition Diagram



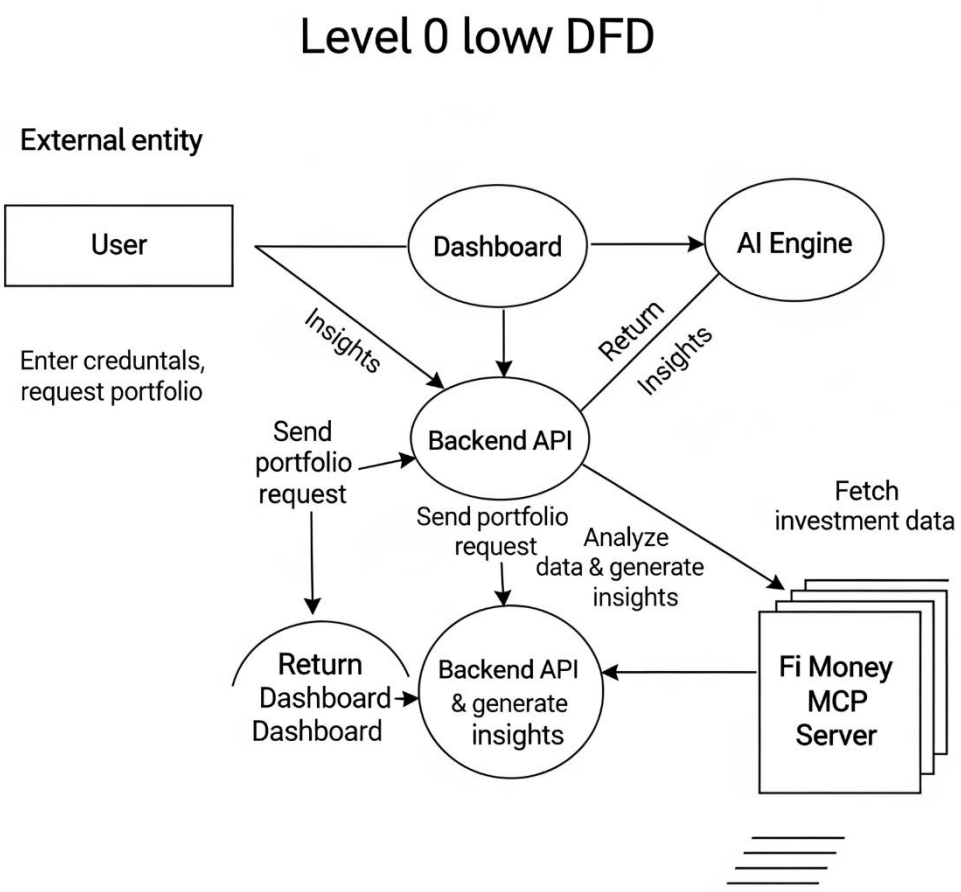
ii. Sequence Diagram



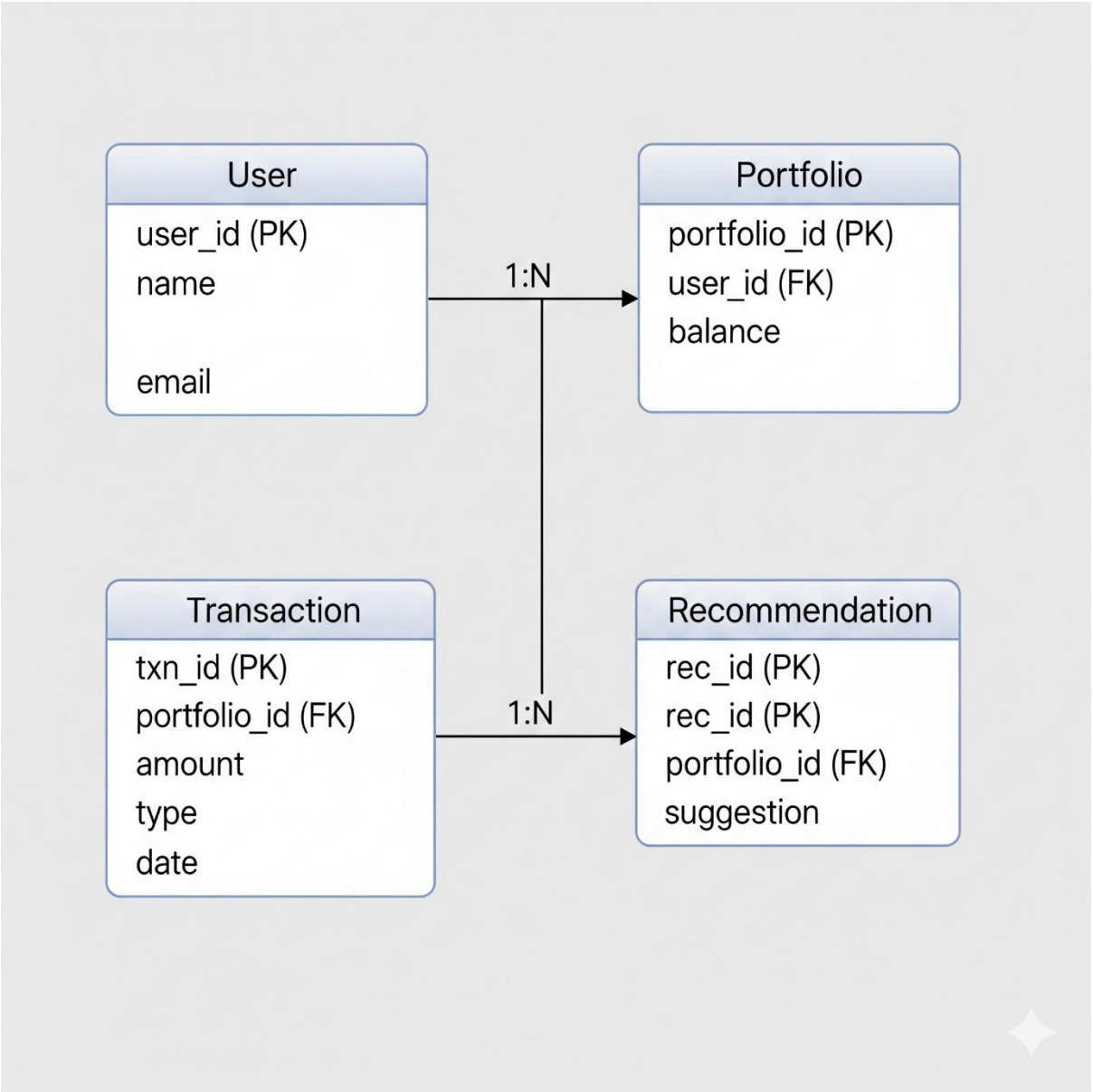
iii. Use Case Diagram



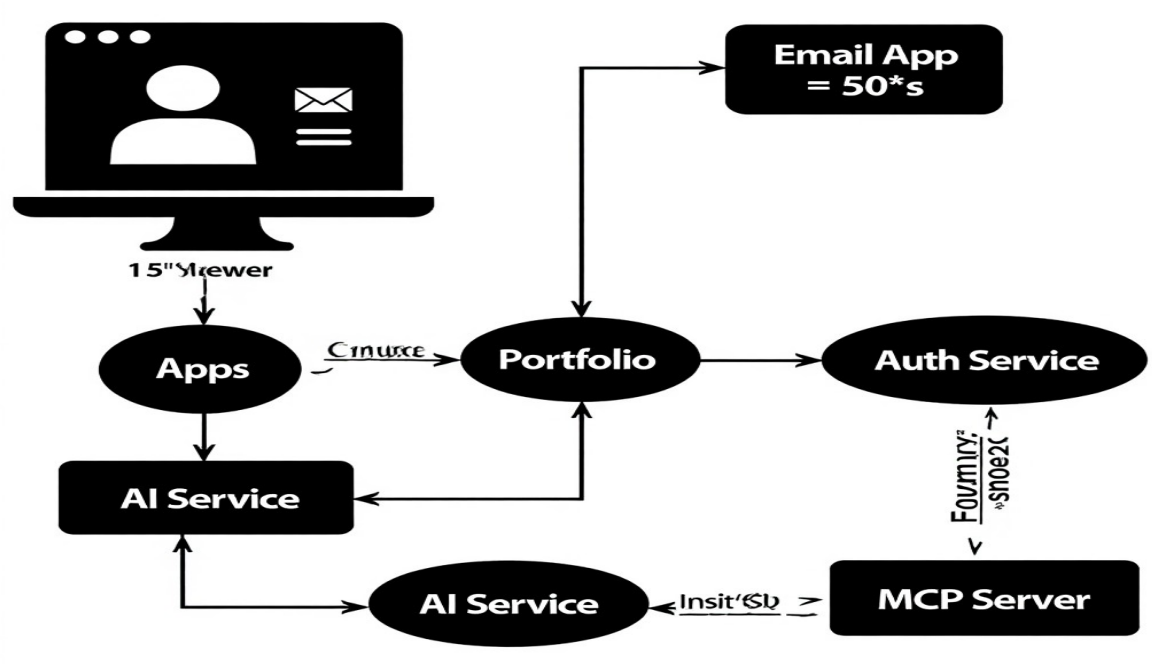
iv. Data Flow Diagram



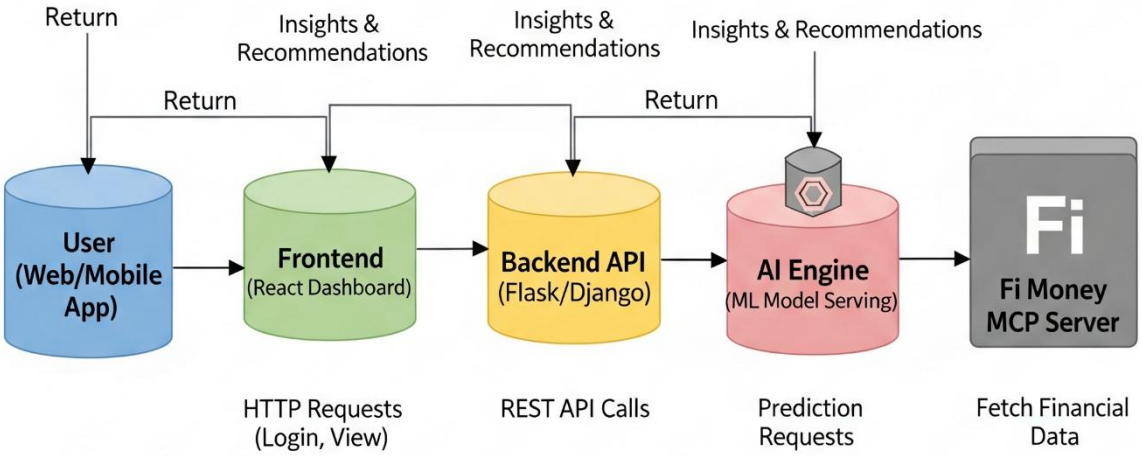
v. ER Diagram


User
user_id (PK)
name
email
1:N
Portfolio
portfolio_id (PK)
user_id (FK)
balance
Transaction
txn_id (PK)
portfolio_id (FK)
amount
type
date
1:N
Recommendation
rec_id (PK)
rec_id (PK)
portfolio_id (FK)
suggestion

vi. Technical Workflow Diagram



vii. Work Architecture Diagram



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13. Quality: NFRs and Testing

13.1 Non-Functional Requirements

Metric	SLI	Target (SLO)	Measurement

Availability	Uptime %	≥ 99.0%	Uptime monitor
Latency	p95 portfolio load	≤ 3,000 ms	Application Performance Monitoring (APM)
Latency	p95 recommendation generation	≤ 5,000 ms	APM
Error Rate	5xx %	≤ 1%	Logs
Security	Open critical CVEs	0	Security scanner

13.2 Test Plan

Area	Type	Tools	Owner	Coverage Target	Exit Criteria
Backend	Unit	Jest	Kush	70%	No P1/P2 defects
UI	End-to-End (E2E)	Playwright	Ashwani	60%	Pass rate ≥ 95%
API	Integration	Postman/Newman	Team	All critical scenarios complete	All critical tests pass
AI Model	Functional	TensorFlow/Keras test suite	Kush	80%	Recommendations align with risk profiles

13.3 Environments

- Dev → Staging → Sandbox: Deploy to Fi Money's sandbox environment for v1.0; use feature flags for AI recommendations and search filters.
- Dark Launch: Test portfolio data fetching and AI recommendations in staging before sandbox release.

14. Security and Compliance

14.1 Threat Model (STRIDE)

Asset	Threat	STRIDE	Impact	Likelihood	Mitigation	Owner

Auth Tokens	**Theft**	**Spoofing**	**High**	**Medium**	**HTTPS, short TTL (1 hour), token rotation**	**Kush**
User Data	**SQL Injection**	**Tampering**	**High**	**Low**	**Parameterized queries, Web Application Firewall (WAF)**	**Kush**
Portfolio Data	**Unauthorized Access**	**Elevation of Privilege**	**High**	**Medium**	**OAuth-based role checks, MCP Server authentication**	**Kush**

14.2 Authentication/Authorization

- AuthN: Email + password + verification link (via Fi Money account).
- AuthZ: Roles: User (access to own portfolio/recommendations), Admin (for potential future moderation). Role checks enforced at API layer.

14.3 Audit and Logging

- Log user actions: signups, logins, goal updates, recommendation views.
- Retention: 90 days for logs; stored securely in cloud storage.

14.4 Compliance

- Academic project; adheres to GLA University policies.
- No third-party data sharing; user data (email, portfolio) sourced solely from Fi Money's MCP Server with user consent.

15. Delivery and Operations

15.1 Release Plan

- v1.0 Demo: 26 Oct 2025 in Fi Money's sandbox environment.
- Feature Flags: Enable/disable AI recommendations and search filters for controlled rollout.
- Dark Launch: Portfolio data fetching and AI recommendation generation tested in staging.

15.2 CI/CD and Rollback

- CI: Run lint → unit tests → build → dockerize on each commit.
- CD: Deploy to staging on main branch merge; deploy to sandbox after mentor approval.
- Rollback: Revert to previous Docker image tag if issues detected.

15.3 Monitoring and Alerting

Metric	Threshold	Alert To	Runbook
p95 Latency (Portfolio Load)	**> 3,500 ms**	**Ayush (Tech Lead)**	**"Portfolio Latency" runbook**
p95 Latency (Recommendations)	**> 5,500 ms**	**Ayush (Tech Lead)**	**"Recommendation Latency" runbook**
Error Rate	**> 2%**	**Ayush (Tech Lead)**	**"Error Spike" runbook**

15.4 Runbooks

- Portfolio Latency: Check MCP Server API response times → optimize DB queries → scale pods → revert changes.
- Recommendation Latency: Inspect AI model performance → optimize TensorFlow/Keras → revert changes.
- Error Spike: Analyze logs → roll back deployment → create incident report.

15.5 Communication Plan

- Standups: Monday, Wednesday, Friday (15-minute syncs).

- Weekly Status: Email updates to mentor every Friday.
- Demos: Bi-weekly demos with mentor (Weeks 5 and 8); final demo on 26 Oct 2025.

16. Risks and Mitigations

16.1 Risk Heatmap

Risk	Probability	Impact	Score	Mitigation	Owner	Status
Schedule Slip	**Medium**	**High**	**12**	**Scope freeze by Week 1, weekly demos, mentor reviews**	**Ayush**	**Open**
MCP Server Integration Failure	**Medium**	**High**	**12**	**Early API testing (Week 2), fallback mock data**	**Kush**	**Open**
AI Model Accuracy	**Medium**	**Medium**	**9**	**Validate recommendations with test data, iterative tuning**	**Kush**	**Open**
Hosting Costs (Sandbox)	**Low**	**Medium**	**6**	**Monitor usage, optimize cloud storage**	**Ashwani**	**Open**

17. Research and Evaluation

- Market Review: Analyzed Wealthfront, Zerodha Coin, and Groww for onboarding, portfolio display, and recommendation UX.
- Evaluation Plan: Track KPIs (signup time, portfolio load, recommendation completion) weekly; conduct user survey post-release (26 Oct 2025).
- Limitations: No direct buy/sell transactions; single-region hosting in Fi Money's sandbox; limited to 5,000 users for pilot.

18. Appendices

- Glossary: MCP (Multi-Category Portfolio), OAuth, KPI (Key Performance Indicator), SLO (Service Level Objective), p95 (95th percentile latency).
- References: GLA University course handbook, React.js documentation, Node.js/Express documentation, MySQL manual, TensorFlow/Keras documentation.