Effort Estimation Task

IDENTIFYING FUNCTIONAL POINTS:

External Inputs (EI):

1. User Registration & Login (Authentication UI + Backend Auth)
2. Wallet Management (Deposit, Withdrawal, Payment Forms)
3. Trading (Buy/Sell order forms, Portfolio update input)
4. Admin Inputs (User management, Reports entry)
5. AI Preferences/Query input (user triggers AI recommendation request)

External Outputs (EO):

1. Registration/Login confirmation
2. Wallet update confirmation (deposit/withdrawal)
3. Trade confirmation (buy/sell success/failure)
4. AI Recommendations output
5. Reports/logs for admin
6. Email/Notification confirmations

User Inquiries (EQ):

1. Portfolio Viewing (user checks holdings, charts)
2. Transaction History (wallet history search)
3. Market Data Search (stock/currency lookup)
4. AI Recommendation Retrieval

Internal File (ILF):

1. User Database (accounts, profiles)
2. Wallet/Payments Database (balance, history)
3. Trading Database (orders, portfolios)
4. Admin/Logs Database (reports, user mgmt)

External Interface (EIF):

1. Market Data API (currency/stock data)
2. Payment Gateway API (Stripe/PayPal etc.)
3. Email/Notification Service API

4. AI Model Integration API

FUNCTION, TYPE ,COMPLEXITY AND WEIGHT TABLE

Function	Type	Complexity	Weight
User Registration/Login	EI	Low	3
Wallet Inputs (Deposit/Withdraw)	EI	Average	4
Trading Orders (Buy/Sell)	EI	High	6
Admin Inputs (Mgmt/Reports)	EI	Average	4
AI Request Input	EI	Average	4
Registration/Login Confirmation	EO	Low	4
Wallet Confirmation	EO	Average	5
Trade Confirmation	EO	High	7
AI Recommendation Output	EO	High	7
Reports/Logs	EO	Average	5
Email/Notifications	EO	High	7
Portfolio Viewing	EQ	Average	4
Transaction History Search	EQ	Average	4
Market Data Search	EQ	Average	4
AI Recommendation Retrieval	EQ	Average	4
User Database	ILF	Average	10
Wallet Database	ILF	Average	10
Trading Database	ILF	High	15
Admin/Logs Database	ILF	Average	10
Market Data API	EIF	High	10
Payment Gateway API	EIF	High	10

Email/Notification Service	EIF	Average	7
AI Model API	EIF	High	10

Functional Points Calculations:

EI = 3 + 4 + 6 + 4 + 4 = 21
EO = 4 + 5 + 7 + 7 + 5 + 7 = 35
EQ = 4 + 4 + 4 + 4 = 16
ILF = 10 + 10 + 15 + 10 = 45
EIF = 10 + 10 + 7 + 10 = 37
UFP = 21 + 35 + 16 + 45 + 37
UFP = 154

General System Characteristics (GSC)

GSC Factor	**Rating**	**Justification**
Data Communications	4	Uses APIs (market, payments, email) over HTTPS
Distributed Processing	4	Multiple components (frontend, backend, APIs, AI)
Performance	4	Real-time trading & wallet updates
Heavily Used Configuration	3	Multiple concurrent users
Transaction Rate	4	High frequency of trades and wallet updates
Online Data Entry	4	Users perform all tasks online
End-User Efficiency	4	Trading dashboard, charts
Online Update	4	Real-time wallet and trading updates
Complex Processing	4	Trading engine + AI integration
Reusability	3	APIs reusable for mobile app

Installation Ease	2	Web deployment on cloud
Operational Ease	3	Automated logs, CI/CD
Multiple Sites	4	Cloud-based, global users
Facilitate Change	4	Modular MERN + APIs

Sum of GSC = 53

CAF = 0.65 + (0.01 × 53) = **1.18**

5. Adjusted Functional Points

AFP = UFP × CAF = 154 × 1.18 = **182 FP**

6. Effort Estimation

- Productivity = 10 hours per FP
- Effort = 182 × 10 = 1820 hours
- Industry Standard Person-Month = 160 hours

= 1820 ÷ 160 = 11.37 ≈ **12 Person-Months**

7. Conclusion

For the FinVerse Web App, the total effort required ≈ 1820 hours (12 PM).

With a team of 5 members, each working part-time (~36 hrs/month as students),

this could extend to ~50–55 student months of distributed effort.