

Investor Risk Profiling Agent - Summary

1. Problem Statement

You are building an AI-driven investor profiling agent for UBS using OpenAI (via API), with LangChain and an MCP server.

The goal is to interactively profile investors who may not be self-aware about their investment traits and categorize them

into one of six risk categories (A to F). The solution must strictly separate conversational logic from risk scoring logic,

and ensure full explainability for each parameter inferred.

2. Solution Approach

Overall Architecture:

- Agent's job: Extract/infer key parameters
- Rule engine's job: Score and classify risk profile (A-F)

Agent Responsibilities:

- Load structured user data (master, trade history, behavior)
- Identify missing/uncertain parameters and ask contextual follow-up questions
- For each parameter, return both value and reasoning

Risk Classification Logic:

- Define rule-based scoring with weights and thresholds
- Rule engine outputs category + reasoning, completely auditable and LLM-independent

3. Implementation Plan

Phase 1: Data & Parameter Setup

- Define parameter schema (volatility_tolerance, loss_reaction, etc.)

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- Prepare structured input JSON format
- Create scoring mappings

Phase 2: Agent Design

- Use LangChain/OpenAI to build agent with prompt templates or function calling
- Return parameter, value, and reasoning in JSON
- Track parameter state in memory

Phase 3: Rule-Based Risk Scoring Engine

- `score_risk_profile(parameters_dict)` maps total score to category A-F
- Returns structured result with explanation

Phase 4: UI/API Exposure (Optional)

- Streamlit or React UI to guide users
- Show live explanations and session logs

Optional Enhancements:

- Multi-agent orchestration
- Graphical explanations
- Continuous learning and advisor feedback loop