

Here's a **comprehensive requirements document** you can send to an AI Agent or a development team to build a **risk-off dashboard** for S&P 500 and 10 selected stocks, with automated data refresh and a clean UI. I've structured it to be **precise, actionable, and ready for implementation**.

Requirements Document: Risk-Off Dashboard Agent

1. Project Overview

Build a **web-based or desktop dashboard** that continuously monitors and visualizes **risk-off indicators** for:

- **S&P 500 index**
- **10 user-selected stocks or ETFs**

The dashboard should:

- Refresh data **automatically every 4 hours**
 - Display risk signals clearly
 - Include **interactive UI** for filtering and sorting
 - Provide **alerts for risk-off triggers**
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2. Core Features

2.1 Data Sources

- **Market Data:**
 - S&P 500 index (current price, 50-day MA, swing lows, volumes)
 - 10 stocks / ETFs (price, volume, swing lows, 50-day MA)
 - VIX index (current and historical)
- **Optional Macro Data:** News headlines / macro shocks (Yes/No flag)
- Data Sources Examples: Yahoo Finance API, Alpha Vantage, Quandl, Finnhub, or broker API (Schwab, Interactive Brokers, etc.)

2.2 Risk-Off Indicators

For each asset:

1. **Index / Stock closes below 50-day moving average for 2 consecutive periods**
2. **Break of most recent swing low on above-average volume**
3. **VIX jump >20% in last 3 periods (applies to index)**
4. **Macro shock detection** (e.g., major economic or geopolitical news)

The dashboard should compute **Exit Signal Count** and **Recommended Action**:

- 0 signals → Hold
 - 1 signal → Tighten Stops (for high-beta assets)
 - 2+ signals → Exit
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2.3 UI Requirements

- **Dashboard Layout:**
 - Top section: **S&P 500 Risk-Off indicators**
 - Main section: **Table of 10 selected stocks** with columns:
 - Symbol, Current Price, 50-Day MA, Swing Low, Current Volume, Avg Volume, Exit Signal Count, Action
 - Visual indicators:
 - **Red** = Exit
 - **Yellow** = Tighten Stops
 - **Green** = Hold
 - Optional charts: Price trends, 50-day MA, VIX trend
 - **Filtering & Sorting:** Sort by Action, symbol, or Exit Signal Count
 - **Responsive design:** Desktop + mobile friendly
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2.4 Automation & Refresh

- Auto-refresh **every 4 hours**: fetch new data and update signals
 - Option for **manual refresh** button
 - Store historical data for trend analysis
 - Optional email or SMS alerts if Exit Signal Count ≥ 2 for any asset
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2.5 Technology Stack (Suggested)

- **Backend**: Python (FastAPI/Flask) or Node.js
 - **Data fetching**: REST APIs, WebSocket for real-time updates if available
 - **Database**: SQLite / PostgreSQL / MongoDB to store historical data
 - **Frontend**: React / Angular / Vue.js + Chart.js or Recharts for visualizations
 - **Deployment**: Cloud (AWS/GCP/Azure) or locally with scheduling (cron jobs)
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2.6 Security & Access

- Optional authentication for dashboard access
 - Secure API keys for market data
 - HTTPS for all frontend/backend communication
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3. Functional Requirements Table

Feature	Description	Priority
Data Fetch	Pull latest S&P 500, 10 stock prices, volumes, MA, VIX	High
Risk Calculation	Compute Exit Signal Count & Action per row	High
Auto-Refresh	Refresh data & calculations every 4 hours	High
Table View	Show all columns and signals for stocks	High
Conditional Formatting	Highlight Action column (Red/Yellow/Green)	High
Charts	Price + MA trend, VIX trend chart	Medium

Feature	Description	Priority
Filtering/Sorting	By Action, symbol, Exit Signal Count	Medium
Alerts	Optional email/SMS for 2+ signals	Medium
Historical Data	Store for trends & charts	Medium
Authentication	Optional login for access	Low

4. Non-Functional Requirements

- **Performance:** Dashboard must load <3 seconds for 11 assets
 - **Reliability:** Automatic 4-hour refresh must run even if the user is offline
 - **Scalability:** Add more stocks or indices without code changes
 - **Maintainability:** Modular code for easy updates to risk formulas or data sources
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5. Deliverables

1. **Web-based dashboard** with auto-refresh
 2. **Backend scripts** fetching and storing data
 3. **Automated calculation of risk-off signals**
 4. **Visual charts and color-coded risk indicators**
 5. **Documentation** for setup, usage, and adding new assets
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6. Optional Enhancements

- Real-time WebSocket updates for price moves
 - Customizable refresh interval
 - Interactive charts with zoom/hover info
 - Integration with broker platform for alerts or trades
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architecture and data flow diagram for your Risk-Off Dashboard. It shows:

- **Data Sources:** Market APIs (S&P 500, stocks, ETFs, VIX) and News APIs (macro events)
- **Backend Server & Risk Analysis Module:** Calculates Exit Signal Count and Risk Indicators, stores data in Historical Database
- **Dashboard UI:** Displays tables, charts, color-coded actions
- **Auto Refresh:** Updates every 4 hours
- **Alert System:** Optional email/SMS notifications
- **User Access & Security:** Login/authentication for dashboard access

