**FUNCTIONAL REQUIREMENTS DOCUMENT**

**Project Name:** Stock Market Management & Risk Analysis

**1. Introduction**

This document outlines the functional and non-functional requirements for the Stock Market Management and Risk Analysis project. The system will provide users with a robust toolset to analyze market trends, identify potential risks, and make informed investment decisions.

**2. Functional Requirements**

**2.1 Stock Data**

**Requirement**: Users should be able to find trending stocks, stock by id and all available stocks  
**Details**:

* **Trending Stocks**: Users can find the trending Stocks directly in the platform, by providing easy access to the user.
* **Stocks Available**: The platform provides a comprehensive list of all available stocks, allowing users to browse and explore different stock options.
* **Specific Stocks:** The platform allows users to search for specific stocks by their IDs, names, or other relevant criteria, and providing detailed information about each stock, including its current price, trading volume, and other key metrics.

**2.2 Portfolio**

**Requirement**: Users should be able to create, view, update, and delete portfolios, as well as manage stocks, assess risks and check portfolio performance within a portfolio.  
**Details**:

* **Create Portfolio**: Users can create a new portfolio by providing a name and other relevant details.
* **View Portfolio**: Users can view a list of all their portfolios, including the portfolio name, creation date, and other relevant information.
* **Update Portfolio**: Users can update an existing portfolio by changing its name, description, or other details.
* **Delete Portfolio**: Users can delete a portfolio, which will remove all associated stocks and transactions.
* **Risk Assessmen**t: Analyzes user portfolios and market data to identify potential risks, such as market volatility, credit risk, and liquidity risk.
* **Portfolio Performance:** Analyzes user portfolio and validates performance of the portfolio.

**2.3 User**

**Requirement**: Users should be able to register, log in, and view their profile information.  
**Details**:

* **Register**: Users can create a new account by providing required information such as username, password, email, and other details.
* **Log In**: Users can log in to their account using their username and password.
* **View Profile**: Users can view their profile information, including their username, email, and other relevant details.

**2.4 News Section**

**Requirement**: A section for news updates is required.  
**Details**:

* **News Data**: Provide a centralized area for news, updates, and announcements relevant to stocks.

**2.5 Video Resources**

**Requirement**: Users should be able to search for stock-related videos to enhance their stock market analysis and risk management experience.

**Details**:

* **Video Search**: Users can search for videos related to specific stocks, companies, or market trends using keywords, tags, or categories.

**3. Non-Functional Requirements**

**3.1 Usability**

**Requirement**: The stock market analysis and risk management platform must be user-friendly and intuitive for all users.

**Details**:

* **Intuitive Interface**: Designed for ease of use, ensuring both novice and experienced investors can navigate effortlessly through the platform's features, including video search and analysis tools.
* **Personalized Experience**: Offers customizable dashboards and layouts to cater to individual user preferences and investment strategies.

**3.2 Performance**

**Requirement**: The platform must perform efficiently under all conditions, ensuring timely and accurate analysis and risk management.  
**Details**:

* **Real-Time Data Processing**: Handles large volumes of real-time market data, news, and analytics to provide users with up-to-date insights and recommendations.
* **Fast Search and Retrieval**: Enables quick search and retrieval of relevant videos, news, and analysis to support timely investment decisions.
* **Low Latency**: Ensures minimal delay between user input and system response, even during peak usage periods.

**3.3 Reliability**

**Requirement**: The platform should ensure maximum uptime and dependability, even in the face of market volatility and high user activity.  
**Details**:

* **High Availability**: Robust infrastructure to minimize downtime, particularly during critical market events and trading hours.
* **Fault Tolerance**: Designed to withstand hardware or software failures, ensuring continuous operation and data integrity.
* **Regular Backups**: Schedules regular backups of user data and analysis to prevent data loss in the event of system failures.

**3.4 Scalability**

**Requirement**: The platform must be scalable to accommodate growth in user base, data volume, and analytical complexity.  
**Details**:

* **Horizontal Scaling**: Capable of adding more servers or nodes to handle increased user traffic and data processing demands.
* **Vertical Scaling**: Supports upgrading of existing infrastructure to improve processing power, memory, and storage capacity.
* **Cloud-Based Architecture**: Leverages cloud computing to provide on-demand scalability and flexibility.

**3.5 Security**

**Requirement**: The platform must ensure the confidentiality, integrity, and availability of user data and analysis.  
**Details**:

* **Data Encryption**: Encrypts user data, both in transit and at rest, to protect against unauthorized access and data breaches.
* **Access Control**: Implements role-based access control, ensuring that users only have access to features and data relevant to their needs and permissions.
* **Regular Security Audits**: Conducts regular security audits and penetration testing to identify and address vulnerabilities.

**3.5 Interoperability**

**Requirement**: The platform must integrate seamlessly with other financial systems, tools, and platforms.  
**Details**:

* **API Integration**: Provides APIs for integration with popular financial platforms, such as trading platforms, portfolio management tools, and financial news services.
* **Data Import/Export**: Supports import and export of data in various formats, including CSV, JSON, and XML, to facilitate integration with other systems.
* **Third-Party Integration**: Allows integration with third-party services, such as news providers, data analytics firms, and risk management platforms.

**4. Tech Stack**

**1. Front End**

* HTML
* CSS
* JavaScript
* TypeScript
* Angular

**2. Back End**

* Java
* Spring Boot

**3. Database**

* MySQL