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**需求规格说明文档**

Fof量化投资交易管理系统

**Sep 7，2016**

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# 1. Introduction

## 1.1 Purpose

This document describes the functional requirements of the FOF Quantitative transaction management system, a market making and portfolio management system for advanced derivatives. The software development team's realization and verification of the software system based on this. Unless stated, the requirements of this document are high priority needs.

## 1.2 Document constraint

文档内需求分为高、中、低Priority。

Requirements in the document are divided into high,mediun and low priority.

## 1.3 Range

FOF量化投资交易管理系统旨在为机构和个人投资者的基金组合投资交易提供策略支持，以及风险评估、提示，使其更有效的进行交易并管理风险。本项目通过量化策略确定大类资产配置及量化择基确定小类投资基金，为广大投资者提供基金行情、策略参数、风险控制等全方位服务，帮助投资者有效管理资产，实现最大化收益。

## 1.4 References

1）EEE Standard

2）Advanced derivatives market making and portfolio management system demand Documents 0813

## 1.5 Revision

|  |  |
| --- | --- |
| time | version |
| Sep 7th,2016 | V1.0 |

# 2. Overall Description

## 2.1 Commodity Prospect

### 2.1.1 Background and opportunity

FOF，是Fund of Funds（基金中的基金）的简称，是指专门投资于其他基金的基金，FOF并不直接投资股票或债券，其投资范围仅限于其他基金，通过持有其他证券投资基金而间接持有股票、债券等证券资产，它是结合基金产品创新和销售渠道创新的基金新品种。FOF通过专业机构对基金进行筛选，帮助投资者优化基金投资效果。此外，FOF在选择投资标的时有较大的灵活性，在低迷或波动的市场环境下，FOF的优势愈加明显。

FOF的优势在于：（1）投资FOF等于同时投资多只基金，降低投资者的选择成本，丰富投资者的基金选择；（2）FOF完全采用基金的法律形式，按照基金的运作模式进行操作；FOF中包含对基金市场的中长期投资策略，与其他基金一样，是一种可长期投资的金融工具；（3）挑选单只基金的风险高和难度大，而FOF通过对基金的组合投资，实际上就是帮助投资者一次买“一篮子基金”的基金，通过专家二次精选基金，大幅降低投资基金非系统风险。

### 2.1.2 Business requirements

本项目旨在将量化的方法引入FOF组合中基金组合的选定，根据基金的历史数据计算得出每只公募基金的评级，组建基金池，再根据市场行情和相关风险参数计算权益类基金和固定收益类基金的权重，构建FOF投资组合，并将基金净值和其他行情信息以用户友好的界面呈现给客户，为FOF量化投资提供系统性的支持。

本项目的具体实现目标如下：

建立投资策略库，实现FOF投资的信息化。项目建有基金评价指标体系，定期更新基金排名，组建基金池，结合策略模型，确定基金投资组合，高效简洁地为FOF量化投资系统使用者提供决策支持，实现FOF投资的电子化。

定期检测市场，提示风险，实现收益最大化。系统会定期根据市场的变化，调整基金池及相应的投资权重，同时设定回撤警戒线和止损线，及时向使用者提示风险及异常产品，实现对风险的有效控制。

根据客户的财务状况、风险偏好、投资期限，筛选合适的FOF基金并及时提醒进行交易。即投资者可根据自身对待风险的态度以及资金量和投资期限，自主性在系统内设置相应参数，系统会根据投资者的要求自动筛选出符合条件的FOF基金，即时提醒投资者进行交易。

## 2.2 Commodity function

SF1：对场外基金进行查询和组合

SF2：根据风险变化进行自动对冲交易

SF3：修改参数模型，动态调整对冲策略

SF4：动态管理客户，掌握客户交易持仓信息和权限管理

SF5：场内期权的动态市场信息查看

SF6：组合信息动态查看

## 2.3 User characteristics

|  |  |
| --- | --- |
| 普通用户 | 整个系统理论上拥有无限多的普通用户，用户可以进行登录，查看管理等简单的操作 |
| 管理员 | 整个系统可以有多个系统管理员，他的工作是每月维护服务器的正常运行，管理客户，对客户进行增删改查，对系统的运行进行评估，根据评估结果对参数模型进行修改，以实现收益最大化。 |

## 2.4 Constraint

CON1: The system will run on the Window X operating system.

CON2: The system will use a graphics interface, nod the web interface.

CON3: The project will developed by continuous integration method.

CON4: In the develop cause, the developer should submit the software requirements documentation, design description document and test report

## 2.5 Hypothesis and dependence

AE1:Users must be the Fof professional manager.

# 3. Detailed requirements description

# 3.1 External interface requirements

### 3.1.1 User Interface

Details see Prototype Iterative Document .

### 3.1.2 Hardware Interface

None

### 3.1.3 Software Interface

None

### 3.1.4 Communication interface

客户端与服务器采用 RMI 的方式进行通信

**CI1**：主服务器需要向连接到服务器的客户端推送的数据包括下列内容，他们的详尽内 容参见数据需求：

用户的账户信息；

用户的组合信息；

用户的持仓记录；

持仓记录波动信息；

参数信息；

**CI2：**客户端需要向主服务器发送的请求包括下列内容：

登录请求；

登录用户名密码信息；

各个基金查询请求；

构建组合请求；

组合数据信息查询请求；

风险控制信息查询请求；

修改参数请求；

## 3.2 Functional requirements

### 3.2.1 管理员和普通用户登录

### 3.2.1.1 Characteristic description

当普通用户需要账号时，向管理员提供用户名和密码；已有账号的普通用户或管理员可进行登陆。普通用户和管理员统称使用者。Priority：低

Stimulus/response sequence

Stimulus：使用者输入账号密码

Response：系统记录账号密码

Stimulus：使用者输入登录命令

Response：系统验证用户的账号密码，显示验证结果

### 3.2.1.2 Related functional requirements

|  |  |
| --- | --- |
| User.Login | 系统允许使用者进行登陆 |
| User.Login.input | 使用者输入账户密码，系统记录账户密码 |
| User.Login.Commit | 使用者输入登录的命令，系统验证密码，并返 回结果 |
| User.Login.yes | 如果使用者输入正确的账号密码进行验证，系 统进去正式任务 |
| User.Login.no | 如果使用者输入错误的账号密码进行验证，系 统提示密码或者账号错误 |
| User.End | 系统允许使用者结束任务 |

### 3.2.2 User view all the fund market data

### 3.2.2.1 The feature description

When user need to check all the fund market data after verification, system should display all the fund market data.

Priority: medium priority

Stimulus/response sequence

Stimulus：User choose the type of fund market which he/she wants to check.

Response：System allows user choose the fund market type and records the choose information.

Stimulus：User choose the type of fund profit which he/she wants to check.

Response：System allows user choose the type of fund profit and records the choose information.

### 3.2.2.2 Related functional requirements

|  |  |
| --- | --- |
| User.Market | System allows user check the fund market data. |
| User.Market.ChooseMarketType | User chooses the market types which system contains(Fund Basis Type、Fund Market Type),system record the market type user choosed. |
| User.Market.ChooseProfitType | User choose the profit type(Stock Open-End Fund、Bond Open-End Fund、Mixed Open-End Fund、Principal Guaranteed Open-End Fund、Index Open-End Fund、Money Market Fund、QDII Fund、LOF Fund、ETF Fund、Equity Fund、Other Fund) of the fund he/she wants to check. The system records revenue categories to select information, and display the corresponding fund market information (Fund name, fund code, the current net value, per cent, recent one month gains, recent three months gains, recent half a year gains, recent one year gains, recent three years gains, recent five years gains, since the establishment of gains, annual income, net chart, earnings charts) |
| User.Market.End | System allows end users to view market mandate of the Fund. |

### 3.2.3 User to view a single fund specific data

### 3.2.3.1 The feature description

Users select a single fund needs to view, the system shows details of the Fund.

Priority：medium priority

Stimulus/response sequence

Stimulus： The user chooses to view brief information of the Fund want to see.

Response： The system gets user-selected information, shows the Fund's recent trend of net worth and income trends of the time, and in contrast to fund index and market index data.

Stimulus：Users select the Fund needs to view details

Response：The system gets user-selected information, show all detail data of the Fund.

### 3.2.3.2 Related functional requirements

|  |  |
| --- | --- |
| User.SingleFund | System allows user to choose which fund he/she wants to view. |
| User.SingleFund.ChooseSimple | User select the fund he/she wants to view |
| User.SingleFund.ExhibitionSimple | System shows the user the selected Fund trend and profit trend in recent days, and in contrast to fund index and market index data. |
| User.SingleFund.ChooseDetail | Users select a Fund, and view details. |
| User.SingleFund.ExhibitionDetail | System show user by selected Fund of detailed information (fund name, and fund code, and established date, and fund company, and fund manager, and established scale, and management fee, and investment type, and compared benchmark, and scale; returns rate index: recent one month, and recent three months, and recent six months, and near one year, and near three years, and near five years, and since established, and years of returns, returns rate index; rating information: Returns index e, and risk index R, and conditions index D, and Ranking indicator (RI=R\*E\*D), the number of rating stars; performance evaluation : return characteristics:Alpha, average yields, the geometric average rate of return, risk and return values; recent million image, asset allocation chart (heavily invested in bonds, heavily invested in equities, industry configuration) |
| User.SingleFund,End | System allows end users to view single branch the mandate of the Fund. |

### 3.2.4 Users create FOF combinations

### 3.2.4.1 The feature description

System allows users to build a fund portfolio of users according to their own preference, and combined historical data of the back-test results are given.

Priority: high

Stimulus/response sequence

Stimulus : Users input creating FOF combinations command

Response : The system allows the user to build a fund portfolio, and allows the user to select the Fund strategy and risk appetite

Stimulus : The user chooses fund strategy and risk appetite

Response : The system record the user's choice, and generate the corresponding mix and combine the information displayed to the user

Stimulus : Users choose to generate combinations

Response : System displays historical data back to the data generated by the combinations.

Stimulus : Users confirm to generate the combination

Response : System records the combination, and display the composition is generated successfully.

### 3.2.4.2 Related functional requirements

|  |  |
| --- | --- |
| User.Combination | System allows users to generate combinations |
| User.Combination.StrategyInput | Users select a Fund generated policy, the system records user’s choice. |
| User.Combination.RiskInput | Users select the portfolio risk appetite, system records user’s choice |
| User.Combination.Produce | System generates combinations according to user policies and user’s risk appetite. |
| User.Combination.Exihition | System will display the information of combinations to users. |
| User.Combination.Continue | Continue to generate combinations of commands entered by the user, the system will produce combined history back-test data displayed to the user |
| User.Combination.Completed | Users confirm the funds generated by the combination, the system records generated by the combination. |
| User.Combination.Cancel | System allows the user to cancel generating combination-production process. |

### 3.2.5 User view FOF combination real-time monitoring data

### 3.2.5.1 The feature description

User can view the current fund market real time data, and view the details of a Fund.

Priority: high

Stimulus/response sequence

Stimulus : Users choose real-time monitoring data performance benchmarks.

Response : Shows the performance benchmarks market under the Fund's real-time data

Stimulus : Users select a fund to view the details of the Fund.

Response :System records the user selects funds and show detailed data of the Fund

Stimulus : Users can choose to display data rehabilitation process, select the length of time and cycles

Response : The System show data based on user-selected to the user.

### .2.5.2 Related functional requirements

|  |  |
| --- | --- |
| User.Monitor | Real-time information system allows the user to view the Fund market |
| User.Monitor.DatumInput | Users select the performance benchmark that needs to view data (Fund Index of Shanghai composition, Fund Index of Shenzhen composition、 Fund300) , The system shows corresponding data (Including funds, fund name, update the code date and predict change, forecasting price, forecast, position number, position of net cost market value, position, date of latest weight, profit/loss, floating profit and loss rate, cumulative profits and losses, the total floating profit/loss rate, the realized profit and loss) to the user. |
| User.Monitor.FundDetail | Users select a Fund, the system shows the net value of the Fund performance data (NET line, containing the Fund benchmarks and Fund 300 two baselines) |
| User.Monitor.DataType | Data system allows the user to select the desired view type(Rehabilitation, units, cumulative) And display data |
| User.Monitor.DateRange | System allows users to select the time range displayed data(One month, three months, six months, one year, three years, five years and so far this year, the establishment date) And display data |
| User.Monitor.DateUnitType | System allows the user to select Statistical period (day, week, month, quarter, year) And display data |
| User.Monitor.End | System allows the user to exit monitoring |

### 3.2.6 Users view FOF combination analysis of profit and loss data

### 3.2.6.1 The feature description

Users will need to view the construction of the combined profit and loss information, the system should show the building fund portfolio profit and loss information.

Priority: high

Stimulus/response sequence

Stimulus : Users select profit and loss analysis of performance benchmarks that show data.

Response : Shows the performance benchmarks under the build a fund portfolio profit and loss information, and allows the user to select the starting and ending times.

Stimulus : Users select the view information the start date and due date

Response : System records the start date and due date selected by the user, and display the corresponding time period information

### 3.2.6.2 Related functional requirements

|  |  |
| --- | --- |
| User.ProfitLoss | System should allow users to view the construction of the combined profit and loss information |
| User.ProfitLoss.DatumInput | Users select the baseline information (Shanghai Stock Exchange Fund index, Shanghai composite Index, Fund 300 ) , System shows corresponding profit and loss information (including total returns, and relative total returns, and maximum gains, and maximum gains days, and maximum gains recovery during, and years of average returns, and years of average excess returns, and down risk, and years of fluctuations rate, and track errors, and related coefficient, and Alpha, and Btea, and Sharpe, and reynor, and ensen, and R2, and half variance, and Sortion equivalent of recently 3 months, and recently 6 months, and since this year,and select period and The 4 phases of the different values of the selection range, range refers to the user set the start date and end date for the time range between) |
| User.ProfitLoss.DateChoose | User to select a time range to view profit and loss information(User-selected view the start date, end date) , The system updates all values under the corresponding selection |
| User.ProfitLoss.End | The task system allows users to end the task of analysis of profit and loss information. |

### 3.2.7 Users view FOF portfolio return statistics

### 3.2.7.1 The feature description

System should allow users to view the build combination return statistics.

Priority: high

Stimulus/response sequence

Stimulus : View returns statistical information entered by the user

Response : System shows users build composite. Returns statistical information and allows the user to select a date range, a performance benchmark

Stimulus : Users choose to view performance benchmarks

Response : Shows the corresponding performance benchmark return statistics

Stimulus : Users select the time range to view return statistics

Response : Display returns statistical information for the corresponding time period of the system

Stimulus : Users choose to view return statistics survey cycle

Response : Shows the corresponding cycles return statistics

### 3.2.7.2 Related functional requirements

|  |  |
| --- | --- |
| User.Return | System should allow the user to view the build composite return statistics |
| User.Return.DatumInput | Users select the view you want return statistics for performance benchmarks (Shanghai Stock Exchange Fund index, Shanghai composite Index, Fund 300 ) , The system shows the corresponding statistical returns information (Including reward charts; relative incline, relative decline, flat, totaling, cycle number, percentage, mean, standard deviation, maximum and average sequences; relative returns, portfolio returns benchmark returns, the date, gain first gain, gain second gain, gain third gain). |
| User.Return.TimeCycle | Users select the view you want return statistical information statistical cycle (day, week, month, quarter, year) , The system according to the user chooses to update data. |
| User.Return.DateRange | Returns statistics information users choose to view the start date and due date, the system according to the user chooses to update data. |
| User.Return.End | Return system allows users to end viewing statistics information task. |

### 3.2.8 用户查看FOF组合业绩归因数据

### 3.2.8.1 The feature description

当完成制定并生成组合后，一个经过验证的普通用户可以开始查看业绩归因数据。Priority：高

Stimulus/response sequence

Stimulus：用户发出查看业绩归因数据命令

Response：系统进入业绩归因界面

Stimulus：用户选择开始日期、结束日期和资产类型

Response：系统展示从开始日期到结束日期，该资产类型的所有基金数据

### 3.2.8.2 Related functional requirements

|  |  |
| --- | --- |
| User.PerformanceAttribution.Input  User.PerformanceAttribution.Input.Show | 系统允许用户进行键盘输入  用户提出查看业绩归因请求时，系统要显示业绩归因数据，详见User.PerformanceAttribution.Input.Show.Change |
| User.PerformanceAttribution.Input.Show.Change | 用户输入开始时间、结束时间、资产类型请求时，系统要显示对应情况下的所有基金数据信息（最大序列，标准偏差，周期数，平均序列，平均值，百分比，相对下跌值，相对上涨值，平盘值，合计值，相对回报，基金回报，发生日期） |

### 3.2.9 用户查看FOF组合资产配置数据

### 3.2.9.1 The feature description

当完成制定并生成组合后，一个经过验证的普通用户可以开始查看资产配置数据。Priority：高

Stimulus/response sequence

Stimulus：用户发出查看资产配置数据命令

Response：系统进入资产配置界面并展示资金走势数据表格

Stimulus：用户选择复权单位净值、显示单位

Response：系统展示权益类基金净值表现折线图

### 3.2.9.2 Related functional requirements

|  |  |
| --- | --- |
| User.AssetAllocation.Input  User.AssetAllocation.Input.Show | 系统允许用户进行键盘输入  用户提出查看资产配置请求时，系统要显示资产配置数据（基金代码、YTD、3月、6月、1年、2年、3年、5年、总回报、年化回报），详见User.AssetAllocation.Input.Show.Change |
| User.AssetAllocation.Input.Show.Change | 用户输入复权单位净值或显示单位请求时，系统要显示对应权益类基金净值表现折线图 |

### 3.2.10 用户查看FOF组合持仓变动数据

### 3.2.10.1 The feature description

当完成制定并生成组合后，一个经过验证的普通用户可以开始查看持仓变动数据。Priority：高

Stimulus/response sequence

Stimulus：用户发出查看持仓变动数据命令

Response：系统进入持仓变动界面

Stimulus：用户发出查看持仓变动数据请求

Response：系统展示持仓变动数据表格

### 3.2.10.2 Related functional requirements

|  |  |
| --- | --- |
| User.ChangePosition.Input  User.ChangePosition.Input.Show | 系统允许用户进行键盘输入  用户提出查看持仓变动请求时，系统要显示持仓变动数据（操作日期，调仓日期，证券代码，证券简称，买入数量，买入价格，卖出数量，卖出价格） |

### 3.2.11 用户查看FOF组合绩效评估数据

### 3.2.11.1 The feature description

当完成制定并生成组合后，一个经过验证的普通用户可以开始查看绩效评估数据。Priority：高

Stimulus/response sequence

Stimulus：用户发出查看绩效评估数据命令

Response：系统进入绩效评估界面

Stimulus：用户发出查看风险收益指标请求

Response：系统展示风险收益指标数据表格

Stimulus：用户发出查看投资风格分析请求

Response：系统展示风投资风格分析数据表格

### 3.2.11.2 Related functional requirements

|  |  |
| --- | --- |
| User.PerformanceEvaluation.Input  User.PerformanceEvaluatio.Input.Show | 系统允许用户进行键盘输入  用户提出查看绩效评估请求时，系统要显示绩效评估数据，详见User. PerformanceEvaluation.Show |
| User.PerformanceEvaluation.Show.RiskPremium  User.PerformanceEvaluation.Show.InvestmentStyle | 用户提出查看风险收益数据请求时，系统要展示风险收益信息（证券代码，证券简称，alpha值，beta值，sharpe值，treynor值，jensen值，平均收益率，平均风险收益率，收益标准差，年华收益标准差，投资类型，管理公司）  用户提出查看投资风格数据请求时，系统要展示投资风格信息（债券代码，债券简称，投资风格，平均持仓时间，持股市盈率，持股市净率，前10股票占比，前3行业占比，前5行业占比，前10行业占比，投资类型，管理公司） |

### 3.2.12 用户调整FOF组合内基金配比

### 3.2.12.1 The feature description

当完成制定并生成组合后，一个经过验证的普通用户可以调整仓位。Priority：高

Stimulus/response sequence

Stimulus：用户发出调整仓位请求

Response：系统进入调整仓位界面并显示现在的仓位情况

Stimulus：用户提交仓位更改情况

Response：系统保存仓位更改情况，并更新

### 3.2.12.2 Related functional requirements

|  |  |
| --- | --- |
| User.BookAdjusting.Input  User.BookAdjusting.Input.Show  User.BookAdjusting.Input.Submit | 系统允许用户进行键盘输入  用户提出查看仓位情况请求时，系统要显示当前组合中基金仓位情况  用户提出提交仓位变更请求时，系统要更新仓位信息 |

### 3.2.13 Users modify constant parameter information

### 3.2.13.1 The feature description

System should allow users to adjust some parameters of the system.

Priority : high

Stimulus/response sequence

Stimulus : User input change parameter command

Response : The system should show the parameter which the user can modify, and modify interface.

Stimulus : The user modifies the SSE fund index stable value

Response :System verifies the user input. If input is correct, system records user-modified SSE fund index stable value. Otherwise, system prompts this to user.

Stimulus : Users from modifying system of value-at-risk (including moderate risk and high value-at-risk)

Response: :System verifies the user input. If input is correct, system records the value-at-risk. Otherwise, system prompts this to user.

Stimulus : Users from modifying system risk-free interest rate

Response : :System verifies the user input. If input is correct, system records the risk-free interest rate. Otherwise, system prompts this to user.Stimulus : Users from modifying system risk-free interest rate

Response : :System verifies the user input. Risk-free interest rate after the system records user

Stimulus : The user modify the holding period of the system, the window period is the time period

Response : :System verifies the user input. If input is correct, system records the holding period of the system and the window period. Otherwise, system prompts this to user.

### 3.2.13.2 Related functional requirements

|  |  |
| --- | --- |
| User.ParameterChange | System should allow the user to modify some parameters of the system to show the current parameter value, and modify the interface |
| User.ParameterChange.SSEFundIndexStable | SSE fund index stable value entered by the user, the system verifies it and records the SSE fund index stable value user input |
| User.ParameterChange.RiskValue | User input required value-at-risk (high risk or low risk value), the system verify it and records user input value-at-risk |
| User.ParameterChange.NoRiskProfitRatio | User input required for the risk-free interest rate, the system verify it and records user input of the risk-free interest rate |
| User.ParameterChange.DateRange | Users enter the desired time period (window or hold period), the system verify it and records user-input time period |
| User.ParameterChange.End | In any of the above steps, the system allows the user to exit the parameters modification tasks |

### 3.2.14 Users view information risk control

### 3.2.14.1 The feature description

Risk control system should allow users to view control information.

Stimulus/response sequence

Stimulus : See the risk control command entered by the user

Response : System shows recently risk control information

Stimulus : Users select a recent time to view details

Response : System shows user-selected risk control shows more information (such as historical yield closing line, historical profit ratio line chart)

### 3.2.14.2 Related functional requirements

|  |  |
| --- | --- |
| User.RiskControl | System should allow users to view the system risk control information |
| User.RiskControl.Enter | Users choose to view system risk control information, system shows the most recent period of risk control information Entries (including Date, net worth, total return and risk information) |
| User.RiskControl.ChooseItem | Users select the risk control item which they want to see,system shows entry risk controls for more information (including historical price line, and historical profit ratio line chart) |

### 3.2.15 用户搜索查看基金

### 3.2.15.1 The feature description

用户想要搜索某一只特定股票的信息，一个经过验证的普通用户开始进行搜索。Priority：中

Stimulus与Response序列

Stimulus：用户输入基金部分代码

Response：系统展示相关基金列表

Stimulus：用户发出查看具体基金请求，并且请求正确

Response：系统展示该基金具体信息界面

Stimulus：用户发出查看具体基金请求并输入不完整信息

Response：系统显示错误提示

### 3.2.15.2 Related functional requirements

|  |  |
| --- | --- |
| User.Search.Input  User.Search.Input.key | 系统允许用户进行键盘输入  用户提出输入基金请求，系统返回相关基金列表，详见User.Search.Key |
| User.Search.Key.invaild  User.Search.Key.vaild | 用户输入的基金代码与名称信息不完整，系统返回错误提示  用户输入完整代码与名称信息或者选中具体的基金，系统展示该基金详细信息界面 |

### 3.2.16 管理员管理账号信息

### 3.2.16.1 The feature description

管理员想要新添加、删除、修改、查看一个系统使用者，一个经过验证的管理员开始进行账号管理。完成系统使用者的增删改查。Priority：中

Stimulus/response sequence

1.0添加账号

Stimulus：管理员输入使用者登录名、账号名、密码、身份，并确认

Response：系统提示添加成功，保存信息

Stimulus：管理员输入的登录名已存在

Response：系统提示该登录名已存在

2.0删除账号

Stimulus：管理员选择要删除的账号，并确认

Response：系统提示删除成功并保存操作

3.0修改账号信息

Stimulus：管理员修改一条使用者信息，并确认

Response：系统提示修改成功并保存修改

4.0查询账号

Stimulus：管理员进入账号管理界面

Response：系统显示系统使用者信息

### 3.2.16.2 Related functional requirements

|  |  |
| --- | --- |
| Administrator.Account.Input  Administrator.Account.Input.Add  Administrator.Account.Input.Delete  Administrator.Account.Input.Modify | 系统允许管理员进行键盘输入  管理员提出输入新的使用者信息请求时，系统要保存新的使用者信息，详见Administrator.Account.Add  管理员提出删除新的使用者信息请求时，系统要更新使用者列表信息，详见Administrator.Account.Delete  管理员提出修改使用者的信息请求时，系统要保存使用者信息，详见Administrator.Account.Modify |
| Administrator.Account.Add.start  Administrator.Account.Add.valid  Administrator.Account.Add.invalid  Administrator.Account.Add.cancel | 当管理员请求选择添加使用者信息（用户名，登录名，密码，身份）的时候，添加使用者档案操作开始  当管理员请求填写正确格式的员工信息，且信息无遗漏时，系统保存新的使用者信息，并更新数据库  当管理员请求填写使用者信息不正确或者信息有遗漏，系统提示错误信息  当管理员在新建使用者信息的中途选择退出，系统不会保存任何信息 |
| Administrator.Account.Delete.start | 当管理员请求删除使用者信息时，系统删除该职工信息，并更新数据库 |
| Administrator.Account.Modify.start  Administrator.Account.Modify.valid  Administrator.Account.Modify.invalid  Administrator.Account.Modify.cancel | 当管理员请求修改使用者信息且选择修改时，系统开始修改使用者信息任务，并更新数据库。  当管理员填写的信息正确无遗漏时，系统保存修改  当管理员填写的信息不正确或者有遗漏时，系统提示错误  当管理员在修改使用者信息的中途选择退出，系统不会保存任何信息 |

### 3.2.17 管理员查看系统日志

### 3.2.17.1 The feature description

一个经过验证的管理员想要查看系统日志。Priority：中

Stimulus与Response序列

Stimulus：管理员发出查看系统日志请求

Response：系统展示系统日志界面

### 3.2.17.2 Related functional requirements

|  |  |
| --- | --- |
| User.Manager.System\_log.Input  User.Manager.System\_log.Show | 系统允许管理员进行键盘输入  管理员发出查看系统日志请求，系统展示系统日志信息 |

## 3.3非功能需求

### 3.3.1性能需求

系统对性能具有较高的要求，主要如下：

1、发现风险值超出阈值范围后立即进行对冲处理；

2、每 1 秒钟刷新一次数据

### 3.3.2安全性

Safety1:系统应该只允许经过验证和授权的用户访问

Safety2:系统应该按照用户身份验证用户的访问权限

Safety3:系统中有一个默认的管理员账户，该账户值允许管理员用户修改口令

Safety4:系统中不同的用户拥有不同的权限，系统应该对不同权限用户加以管理 Safety5:系统的算法部分，作为客户端的用户和服务端的管理员无法访问，从而避免了预测 核心技术被用户错误操作破坏，保证了系统运行的安全性

### 3.3.3易用性

Usability1：所有查询操作在 3 次鼠标点击之内完成

Usability2：常用操作有相对应的快捷键。

### 3.3.4可靠性

Reliability6:客户端和服务器通信时，如果网络故障，系统不能出现故障

Reliability6.1:客户端应该检测到故障，并尝试重新连接网络3次，每次15秒 Reliability6.1.1:重新连接后，客户端应该继续之前的工作

Reliability6.1.2：如果重新连接不成功，客户端应该等待 5 分钟后再次尝试重新连接。

Reliability6.1.2.1：重新连接后，客户端应该继续之前的工作

## 3.4 Data requirements

### 3.4.1 Definition of data

See also ***Data Structure File***

### 3.4.2 Default data

Default for the following：

1. The time of changing the strategy parameter of fund combination is 15:00.
2. All the stock code and fund code of the system are true codes in stock change.
3. All the raw data is from Wind. If there are any differences between the system data and stock exchange data, please take the stock exchange data as standard.
4. Quote change data must keep the first two digits after the decimal point. If other data has decimals, please keep the first four digits after the decimal point.

### 3.4.3 Data format requirements

Format1**：**Date data format must be：yyyy-mm-dd；

Time data format must be :yyyy-mm-dd HH:mm:ss ;

Format2**：**The type of number must be：Positive integer。

Format3：Stock code and fund code must be six number.Besides,they can include two letters to show the stock exchange.

## 3.5 Other Requirement

### 3.5.1 Requirement of install

OR1：When the system is istalled,it needs to be added initial user accounts。

OR2：The users who want to use the system must accept system train at least three days。

OR3 : The system needs professional persons to be installed and be set parameter.

OR4：Professional technical staff must maintain the system once a month.