Project

# Progress

Tip: The progress should be based on the project proposal.

Briefly summarise what have you achieved up until now.

Milestones should be kept according to the plan.

***What does back end have done?***

*APIs part:*

About the APIs in back end progress, we have already get the data from GDAX, Binance and Bitstamp through API request methods.

Considering about the public and private data, we have get public data from web socket, such as k-line, depth chart, current price etc. ; for the private data, due to client application’s policy, we cannot become the legal clients of GDAX. So, we use sandbox as private data adding some testing trades and transactions.

*Data Processing part:*

The back-end has completed some charts’ data processors, real-time data acquiring, MongoDB operations APIs and project layers’ definitions. The data processors provide the mature data for the front-end view (depth chart, value and volume chart, exchange rate feed have been finished), such as search data from database, transform data format and filter the data coming from external APIs. The real-data acquiring has been finished, when the server starts to run, the new data will be updated to MongoDB. The insert, search and update functions of MongoDB operations have been completed.

# Deviation to Timeline

Nicholas

Tip: You need to justify any deviation to the original timeline. You should also explain the reason why there are changed to the original project planning.

|  |  |  |  |
| --- | --- | --- | --- |
| Timeline | Planning tasks | Reporting job | Deviation |
| Week 5  13-04-2018 | **Definition:** Proposal Report  **Mission:** Totally familiar with APIs in GDAX, Huobi and Binance; Can store public and private data into the database;  Can run front-end demo successfully;  Proposal Report Due.  **Risk:** Unsuitable API invoking may delay the delivery time. | **Deliverables:** Proposal Report  **Description:** Finish two of three APIs invoking (GDAX and Binance). The frontend framework demo has been finished.  Finish the proposal report | **Front end:** cannot be a real-time and dynamic Candle stick chart;  The demo lack of several basic functions, but only current price and login functions can be come true.  **Back-end:** Huobi website cannot offer the USD exchanging method, only for CNY (Chinese Yuan); |
| Week 6  13-04-2018 | **Definition:** Cooperate work  **Mission:** Front-end and back-end program will cooperate with each other smoothly; the visualization of test data the development of main page (Navigate bar, menu, main page charts, exchange rate feed) should be completed.  **Risk:** None | **Deliverables:** An executable work line between frontend and backend  **Description:** Complete front-end first demo version and the development of main page template. | **Front end:** The home page lack of world map and the information of private data;  Navigation bar does not have two kinds of “Legal currency” and “Cryptocurrency” exchange;  **Back end:** Login function does not connect with back-end database, which cannot store API’s key and secret. (This function aims to provide our users private information from each official exchanging websites.) |
| Week 7  25-04-2018 | **Definition:** Integrate all the parts of project  **Mission:** Complete the integration of different components and subpages, the major functionalities of back-end and front-end should be implemented.  **Risk:** Some parts may not work well, that will cost time to fix it. | **Deliverables:** A project can do the demo  **Description:** Complete the demo project and start to optimize the performance. | Do not finish the whole project on schedule. We can only run some separate pages with different routes. |
| Week 8  09-05-2018 | **Definition:**  **Mission:** All the development of features and functions complete, begin the project beta V1.0 testing process  **Risk:** | **Deliverables:**  **Description:** Testing the website performance by a series of processes | The project has not finished yet. |
| Week 9  11-05-2018 | **Definition:** Progress Report  **Mission:** Progress Report Due. And finish the work that may be delayed.  **Risk:** None | **Deliverables:** Progress Report  **Description:** Finish the progress report | The project has not finished yet. |

**Why does it delay against timeline from the back end to front end?**

**Normal reasons:**

Design thinking:

Layout design:

1. (该段：layout由传统的设计转变为overlay的设计，目的是什么) After decision, we picked the overlay layout as our main theme, which is different from the traditional design. The reason for our choice is that we want to show more and more useful information in our home page. And the overlay can cut some useless information.

(**此处需要一张overlay的截图，侧边栏下拉的感觉，包括右上角的login**)

2. (该段：两种版面的展示“交易比特币”和“以比特币交易”) According to the requirement of assignment, “bitcoin stream”, we changed what we focused on the project. We will finish two parts of this website, which is bitcoin exchange with legal currencies (e.g. BIT/USD, BIT/CNY, BIT/EUR, etc.) and cryptocurrencies exchange with bitcoins (e.g. ETH/BIT, LTE/BIT, BNB/BIT, etc.). Here we want to design it as the first level menu and the second level menu, which can be choose when users move mouse on the first level menu coming out a second menu.

(**此处最好P一张 二级菜单的菜单栏**)

Function design:

1. (该段：各个交易行的Current price换成了Global的版本) The data from four exchange websites was coming from each exchange website, however, for now, it is coming from the global data.

2. (该段：k-line增加算法—--五日线算法 作为预测的一种，我们的亮点) About the k-line (candle stick chart), we want to add some predicting algorithm into it. In the future, it will label some special point in chart, which can mention our users to buy/sell.

Back end:

APIs:

1. Based on the requirement, “bitcoin stream”,

2. Due to comparing different official exchange websites, we pick famous exchange websites, such as Binance, Bitstamp, GDAX and OKEX or Kraken. The reason we give up Huobi.com website is that it can only provide BIT/CNY exchange, rather than BIT/USD.

3. About the new feature, trading world map, we do several research on bitnodes.com, for instance, IP, city name, latitude and longitude. (What the effects does it have?) - (1. Show the trading position. 2.?)

4.

Data and database:

1. Real-time data for all of charts and labels;

2. The format of required data is different from what we call back;

Front end:

Layout:

1. After picking the overlay layout, we change the basic functions in the home page. At the early stage, we only want to deal with the bitcoin exchanging issues for our users, such as trading bitcoins with USD, AUD or EUR. For now, we add another function at the same level, trading other cryptocurrencies with bitcoin, such as LTE, ETH and BNB. The mock up is showed like figure 1.

Obstacles

Front end:

The main obstacles in this project are that it’s hard to differentiate our web program with other cryptocurrency exchange website. We need to study the structure of other website and think about how to make our functionalities different compared with others, even though they have already very beautiful to users. Then, when we find out some sections in other websites such as biance and GDAX, we need to think about whether we have enough time to design and implement our designed functionalities. This two parts cost us a large volume of time.

Leon: Overlay, K-line, Depth chart,

Back end：

*Mike：Data process, DB, framework*

*(K-line string) (depth realtime) (Different API data process) (view:ejs html)*

In the data process part of back-end, the major tasks are data process, DB operate, real-time data support and framework establish.

Data process is used offer mature data for front-end views, the major risks are data source connect failed and data format changed. If the data source cannot be connected, the data processor will not work in a right way, that will cause error. If the data format is changed by provider, that will cause data processor run failure. In that way, we used ‘try’ and ‘catch’ to avoid error and the data result will be return as a tips. The major issues of the data process are non-uniform data format, some data coming from API is JSON, others are String. The String format data cannot be stored into MongoDB, so we need to reconstitute the data format to JSON, that will impact the website response time.

The DB operate doesn’t have risks and majors.

In the real-time data support part, it is difficult to decide the interval time for catching data from data source. If the interval time is too shot, that the MongoDB will not have enough time to store the data or the front-end page will not have enough time to render the page for using these data. In that way, we decide to acquire data per every 5 second, that will give view page and database enough time to deal with the data.

The framework establish is the basic skeleton of the project, the major risk is if the framework is not suitable, the project will be hard to develop. We have two framework version, the version one is not suitable, cause the layer is not including the API invoking, so it has been replaced by version two. The major issue is that the framework doesn’t support ‘html’ page, so we update the view engine for supporting ‘html’ and ‘ejs’ in the same time.

Nicho:

Tip: In this section you need to explain any major risks, major issues, and external dependencies involved in your project. The aim is to explain how you will mitigate each risk or issue.

# Milestones and Reporting

Tip: Describe the planned timeline and any updates to the original plan here. You can show the changes to the original plan in different colour.

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Tasks | Reporting | Date |
| Week-1 | **Definition:** Orientation  **Mission:** Participate Orientation and know members in our group  **Risk:** None | **Deliverables:** None  Team members’ express individual statements on the project. (State: Completed) | 14-03-2018 |
| Week-2 | **Definition:** Define framework and purpose  **Mission:** Figure out the purpose of web program and the necessary functionalities in this project. Decide to use which type of MVC framework and development platform.  **Risk:** The unsuitable purpose and framework will delay the delivery time. | **Deliverables:** Designed Framework  **Description:** Design a framework (State: Completed) | 21-03-2018 |
| Week-3 | **Definition:** Deploy framework and APIs  **Mission:** Complete the MVC framework design, and finish at least one module, for example, we can download data from third-party organisations by using RESTful API method.  **Risk:** If the deployed framework is unsuitable, that will delay the delivery time. | **Deliverables:** Framework directory and one executable work line.  **Description:** Develop framework and finish the draft framework. The executable work line is completed. (State: Completed) | 25-03-2018 |
| Week-4 | **Definition:** MongoDB creation and CRUD function development  **Mission:** Make sure that the database could connect with local service, and CRUD operation could be run smoothly when using RESTful API (request GDAX public data and private data successfully get response); Finish the proposal draft.  **Risk:** None | **Deliverables:** A connectable MongoDB and one executable work line.  **Description:** Connect the database and finish at least one completing work line. (State: Completed) | 28-03-2018 |
| Week-5 | **Definition:** Proposal Report  **Mission:** Totally familiar with APIs in GDAX, Huobi and Binance.; Could store public and private data into the database;  Could run frontend demo successfully;  Proposal Report Due.  **Risk:** Unsuitable API invoking may delay the delivery time. | **Deliverables:** Proposal Report  **Description:** Finish two of three APIs invoking (GDAX and Binance). The frontend framework demo has been finished.  Finish the proposal report | 13-04-2018 |
| Week-6 | **Definition:** Cooperate work  **Mission:** Front-end and back-end program will cooperate with each other smoothly; the visualisation of test data the development of main page (Navigate bar, menu, main page charts, exchange rate feed) should be completed.  Front-end:  Depth chart, value and volume chart, exchange rate feed and overlay are finished.  Some charts of menu main page are uncompleted (candle-stick chart, bubble chart). Some pages are uncompleted (private property page, login page, register page). There parts will be moved to week 8.  Back-end:  Some parts of API are uncompleted. Some data processers which used for providing front end charts’ data are uncompleted.  **Risk:** None | **Deliverables:** An executable work line between frontend and backend  **Description:** Complete front-end first demo version and the development of main page template. Complete front-end first demo version and the development some parts of main page template. Finish data processer for these front end chart. | 13-04-2018 |
| Week-7 | **Definition:** Integrate all the parts of project  **Mission:** Complete the integration of different components and subpages, the major functionalities of backend and frontend should be implemented. Integrate the completed works of front-end and back-end. Develop candle-stick chart, bubble chart and relative data processer.  **Risk:** Some parts may not work well, that will cost time to fix it. | **Deliverables:** A project can do the demo  **Description:** Complete the demo project and start to optimize the performance. Complete some rest parts of the main page. | 25-04-2018 |
| Week-8 | **Definition:**  **Mission:** All the development of features and functions complete, begin the project beta V1.0 testing process. Move to week 10. Develop private property page, login page, register page and relative data processer.  **Risk:** None | **Deliverables:**  **Description:** Testing the website performance by a series of processes. Complete some rest parts of the project. | 09-05-2018 |
| Week-9 | **Definition:** Progress Report  **Mission:** Progress Report Due. And finish the work that may be delayed. And integrate all the completed work of frond-end and back-end.  **Risk:** None | **Deliverables:** Progress Report  **Description:** Finish the progress report. And integrate components. | 11-05-2018 |
| Week-10 | **Definition:** Remote host testing  **Mission:** Remote host testing; Multiple-platform testing (Chrome browser, Safari browser, iOS and Android browsers). All the development of features and functions complete, begin the project beta V1.0 testing process.  **Risk:** If the remote host testing failed, that we will use local host to do the demo. | **Deliverables:** The project deployed on the real webserver.  **Description:** Complete the remote host deployment and multi-platform test. And testing the website performance by a series of processes. | 16-05-2018 |
| Week-11 | **Definition:** Documentation  **Mission:** Complete all the documentations written. (user manual, Git readme, project report)  **Risk:** None | **Deliverables:** Documentation  **Description:** Finish the written of relative documentations. | 23-05-2018 |
| Week-12 | **Definition:** Final Report  **Mission:** Final Report (thesis)  **Risk:** None | **Deliverables:** Final Report  **Description:** Prepare and finish the final report | 08-06-2018 |
| Week-13 | **Definition:** Final Presentation  **Mission:** Final Presentation  **Risk:** None | **Deliverables:** Final Presentation  **Description:** Prepare and finish final presentation | 22-06-2018 |

Summary