

IT Project Management Groupwork

Meeting Room Booking System

Group Members (2): ZijiaHe, WangZhihuimei

1 Project Charter

Project Title: Meeting Room Booking System

Date of Authorization: March 1

Project Start Date: March 18

Project Finish Date: May 6

Key Schedule Milestones:

1. Design Phase Finished by April 3
2. Development completed by April 29
3. Released by May 6

Budget Information: A budget of **RMB56800** is funded for this project, and additional investment is available as long as needed. The expenses of labour would be the majority cost for this project.

Project Manager: Wangzhihui Mei, maywzh@gmail.com; **Zijia He**, 296344774@qq.com

Project Objectives: Meeting Room Booking System is a system enabling JI staffs and students to manage meeting room and book meetings. User can book a meeting room with the details of room number, period of time, capacities, etc.

Main Project Success Criteria: The system runs on a public server, and the user can log in into the system through WeChat mini program or web browser, and then select available meeting room for booking a meeting. One can see the detail of the meeting and meeting room in schedule view page.

Approach:

1. Make a reasonable plan and use Microsoft Project to track the project progress.
2. Determine the Technical selection based on staffing situation.
3. Hold periodic meetings to exchange opinions within team.
4. Conduct complete quality testing and then release product.

ROLES AND RESPONSIBILITIES		
Name	Role	Contact Information
Zijia He	Test engineer,Front-end developer	296344774@qq.com
Wangzhihui Mei	Project Manager,Backend developer, System operator	maywzh@gmail.com

2 Project Plans

2.1 Project Scope Statement

Product scope description

This system offers meeting room booking function for JI staffs and students. The system is the typical Client-Server Architecture. The main module of this system includes User system, Meeting

Room Management System and Meeting System on the server-side as well as Wechat client and web browser client on the client-side. The superuser can create and modify meeting rooms and can manage other ordinary users through administration client in a web browser. The ordinary users can book a meeting through Wechat mini program client and can view his meeting schedule. The meeting QRCode and link can also be shared in WeChat to invite other users into the meeting.

Product user acceptance criteria: The system can be deployed to production server and run normally. User can access the system through public network, by web browser and wechat miniprogram. The content user can access depend on the user's permission.

Target Dates: The alpha version of this system should be available before April 28 and the beta version should be available by May 5.

Major function: User can log in into the system through their WeChat as long as downloading our released mini program. They can book meeting is given meeting rooms as well as participate in others' meetings shared or invited by others. Administrator or superuser can manage meeting rooms, conferences and users in the administration system.

Detailed information on all project deliverables:

- 1.Project Charter
- 2.Project Scope Statement
- 3.Project Schedule
- 4.Cost Management Plan
- 5.Human resource plan
- 6.Microsoft Project outputs for project schedule
- 7.Microsoft Project outputs for Cost Management
- 8.Microsoft Project outputs for Human resource allocation
- 9.Project progress report
- 10.Project closing and lessons-learnt
- 11.Meeting Room Booking System
- 12.Tutorial of using Meeting Room Booking System

2.2 Project Schedule

Schedule				
Number	Task	Start Date	Finish Date	Participant
1	Demand Analysis	18/3/2020	22/3/2020	Zijia He,Wangzhihui Mei
2	Prototype Design	23/3/2020	27/3/2020	Zijia He,Wangzhihui Mei
3	UI Design	28/3/2020	3/4/2020	Zijia He
4	Backend Development	6/4/2020	14/4/2020	Wangzhihui Mei
5	Unit Test	6/4/2020	14/4/2020	Zijia He
6	Front-End Development	6/4/2020	14/4/2020	Zijia He,Wangzhihui Mei
7	API Adaptation	15/4/2020	23/4/2020	Wangzhihui Mei
8	App Deployment	24/4/2020	27/4/2020	Wangzhihui Mei
9	Stress Testing	28/4/2020	28/4/2020	Zijia He
10	Integration Testing	29/4/2020	1/5/2020	Zijia He
11	Code Review	4/5/2020	6/5/2020	Wangzhihui Mei,Zijia He

2.3 Cost Management Plan

Level of accuracy units of measure: RMB

Control Threshold: RMB100000

Rules of performance measurement:

- (1)Whether the staff completed the work on time
- (2)The number of bugs in the test

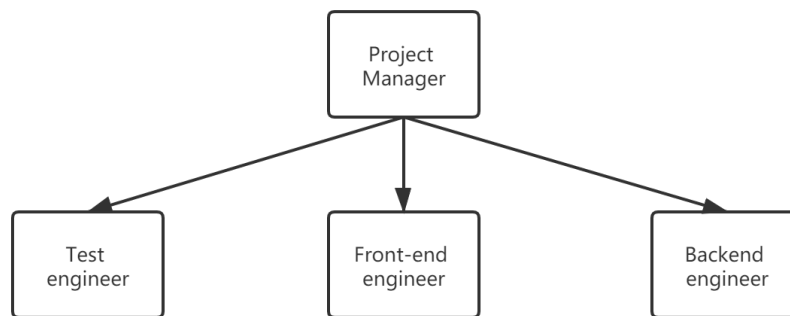
Budget:

Salary:RMB46600

Maintenance Cost:RMB10000

Image copyright:RMB200

2.4 Human resource plan



Staffing management plan:

Project Manager: Project manager(PM) has the overall responsibility for the successful initiation, planning, design, execution, monitoring, controlling and closure of a project. PM plan and define scope of the project. manage the cost, time and resources of the project, and undertake the quality controlling responsibility.

Test engineer: Test engineers should write test plans, plan detailed test plans, and write test cases. In addition, the test engineer needs to put forward suggestions for further product improvement and evaluate whether the improvement plan is reasonable; summarize and statistically analyze the test results, track the test, and provide feedback.

Front-end engineer: The front-end engineer is responsible for the miniprogram development, he should develop adapt API from server side into client such as web browser and wechat miniprogram.

Backend engineer: The back-end engineer is responsible for the server development. He should develop a robust and feasible server system. In this system, server structure includes mysql database, redis cache and django web application server.

3 Project execution

There are 3 phase in out project: Product Design, Development and Release. Accordingly, There is one according milestone in the end of each phase: Design Phase Finished, Development Finished and Released.

Responsibility assignment matrixes				
Task	Project Manager	Test engineer	Front-end engineer	Backend engineer
Demand Analysis	P,R	P	P	P
Prototype Design	P,R	P	P	P
UI Design	P	P	P,R	P
Backend Development	N	N	N	P,R
Unit Test	N	R,P	N	N
Frontend Development	N	N	P,R	N
API Adaptation	N	N	N	P,R
App Deployment	N	N	N	P,R
Stress Test	N	P,R	N	N
Integration Testing	N	P,R	N	N
Code Review	N	P	P	P,R

Table 1. R:Responsibility N:None P:Participate

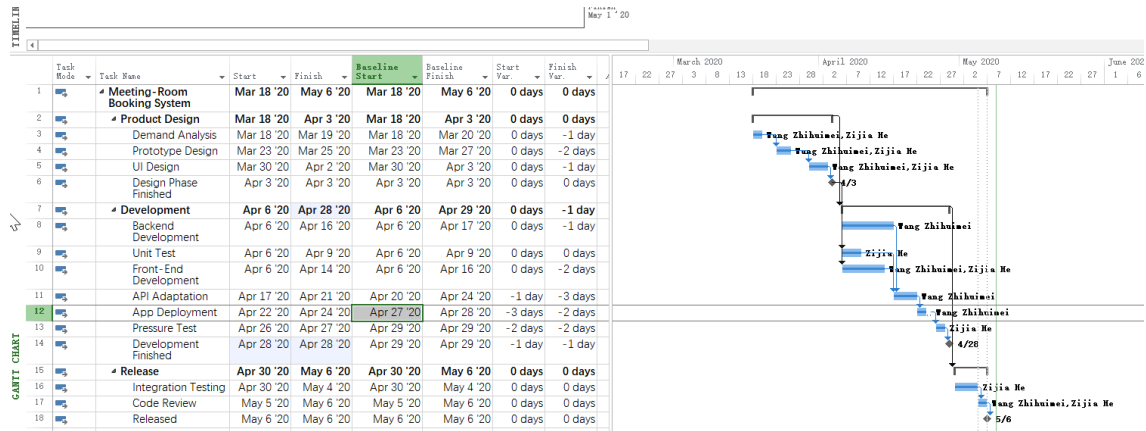


Fig. 1. Difference between baseline and actual schedule

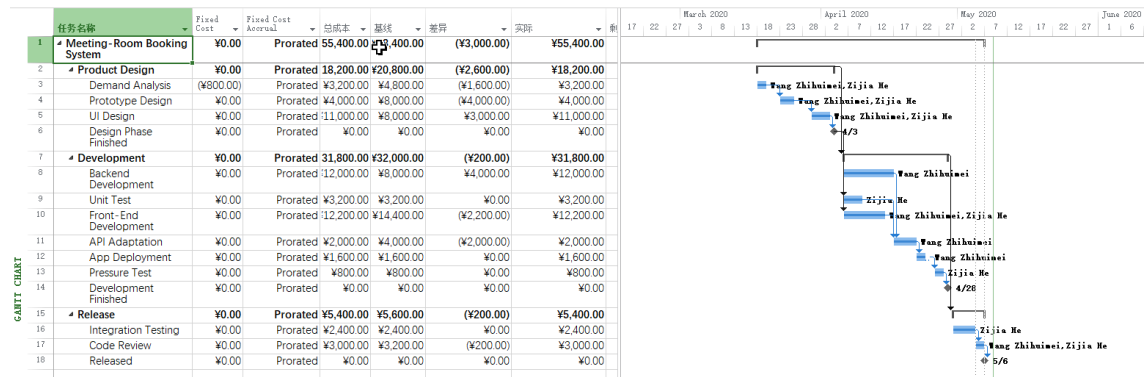
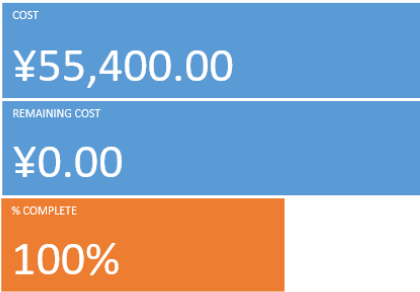


Fig. 2. Difference between baseline and actual cost

COST OVERVIEW

MAR 18 '20 - MAY 6 '20



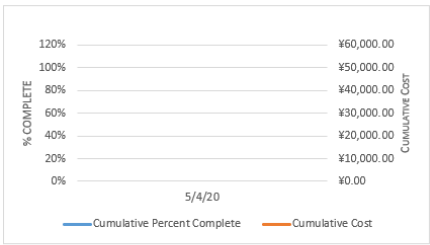
COST STATUS

Cost status for top level tasks.

Name	Actual Cost	Remaining Cost	Baseline Cost	Cost	Cost Variance
Meeting-Room Booking System	¥55,400.00	¥0.00	¥58,400.00	¥55,400.00	(¥3,000.00)

PROGRESS VERSUS COST

Progress made versus the cost spent over time. If % Complete line below the cumulative cost line, your project may be over budget.



COST STATUS

Cost status for all top-level tasks. Is your baseline zero?

[Try setting as baseline](#)

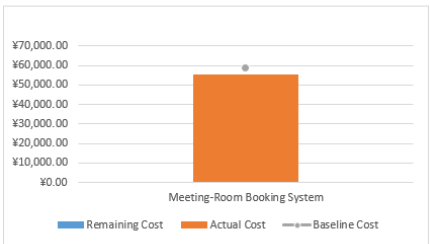


Fig. 3. Cost report

3.1 Product Design

The baseline total cost is ¥20800, while the actual cost is ¥18200.

This phase, our team performed Demand Analysis from Mar. 18 to Mar. 19 with the cost of ¥4800 and we finished this phase 1 day in advance compared with baseline. For the prototype design phase, we completed it two days in advance. The actual cost is ¥4000, only 50% of the baseline cost. We completed the UI design phase 1 days in advance as well. We spend ¥3000 more than baseline ¥11000.

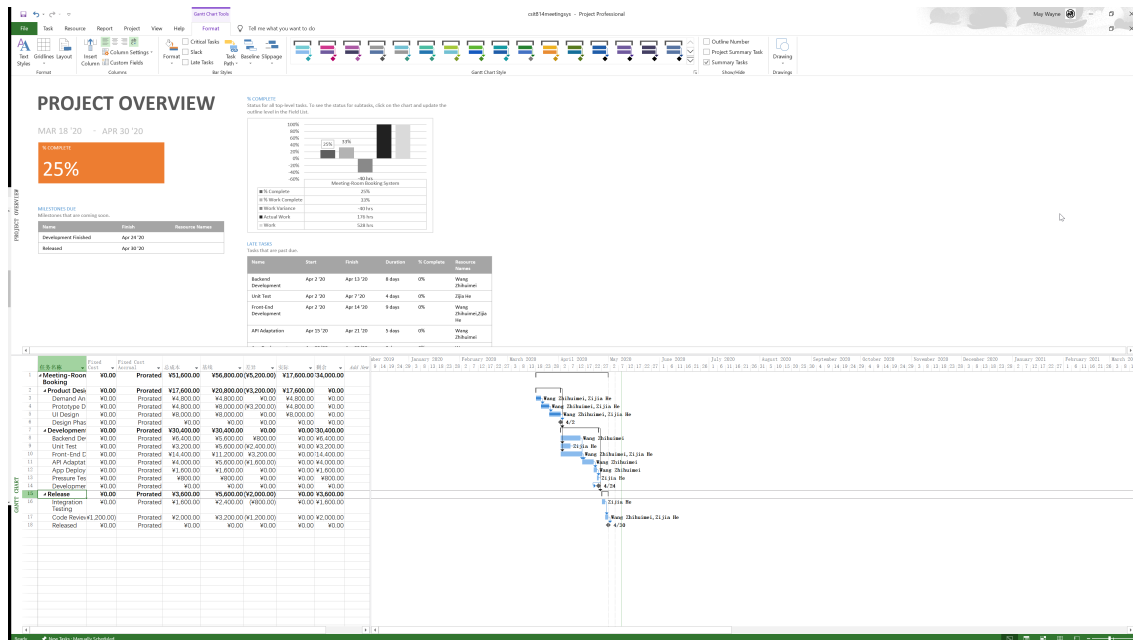


Fig. 4. Product Design Milestone Project report

3.2 Development

In this stage, the total baseline cost is ¥30400, while our team spend ¥32000 in this phase. The over-budget and delay happened mainly happened in back-end development and front-end development. The reason for this is that the difficulty of the development is underestimated. Besides, The demand change needs additional time to reassemble the modules and features of the system. But we accelerate the progress of other tasks, and we reach the milestone of this phase in advance by one day.

PROJECT OVERVIEW

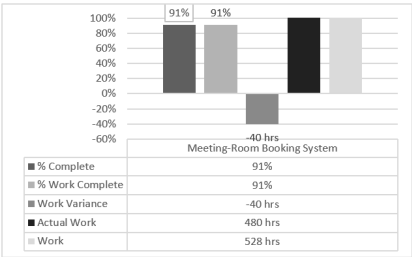
MAR 18 '20 - MAY 5 '20



MILESTONES DUE
Milestones that are coming soon.

Name	Finish	Resource Names
Released	May 5 '20	

% COMPLETE
Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS
Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Integration Testing	Apr 30 '20	May 1 '20	2 days	0%	Zijia He
Code Review	May 4 '20	May 5 '20	2 days	0%	Wang Zhihui, Zijia He
Released	May 5 '20	May 5 '20	0 days	0%	

Fig. 5. Development Milestone Project report

3.3 Release

The total baseline cost is ¥5600, while the actual price is ¥4400, including ¥2400 in Integration test and ¥2000 in Code review, which is because we applied an automated test in testing tasks, which reduce the cost and accelerate the work progress. Finally, the milestone of Release "Released" come in advance for one day.

PROJECT OVERVIEW

MAR 18 '20 - MAY 6 '20



MILESTONES DUE
Milestones that are coming soon.

Name	Finish	Resource Names
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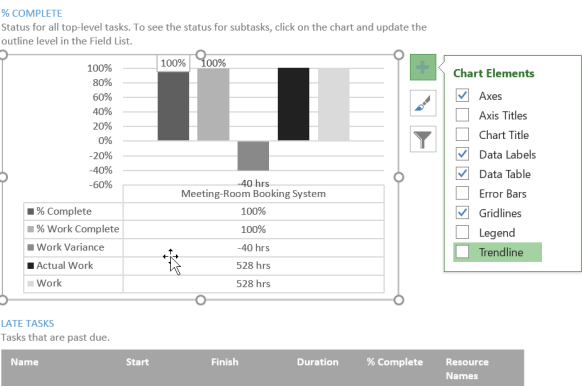


Fig. 6. Release Milestone Project report

4 Project closing and Lessons-learnt

4.1 Did the project meet scope, time and cost goals

Generally, Our system is consistent with the initial plan. We did the demand analysis and verified the real need of the user. We list must-to-have components and better-to-have components and build the prototype product. We have implemented the meeting booking system with server-side and client-side. We have deployed it in the WeChat mini-program, web browser and Linux server. The procedure runs typically with expected features implemented. But the performance of the system is limited as we use raspberry as a server, which can optimise by migrating the server side to a high-performance server.

4.2 What went right and what went wrong on this project

In general, the project meet the expected requirement. We deployed the system server-side in a Linux server, and release the WeChat mini program client publicly. User can use their WeChat account to register the system and can book a meeting room with a complete view of schedule and detail. The demand is satisfied generally.

We completed the project in advance, while some tasks (server-side and front-end development) exceed the deadline of the baseline. The baseline budget has some surplus as we spend RMB 51600 rather than expected RMB 56800. We have done a great job of controlling costs.

Also, the server-side development encountered some difficulties, such as database corrupt and redis cache system crashing. This is mainly because the development specifications are not strictly followed, with formal unit testing applied to the development, this problem is solved.

4.3 What will we do differently on the next project

- Start small, then extend. Creating a mini prototype at first and then extend the solution step by step, until it does what it is supposed to. As no one is able to plan everything out in detail from the beginning.
- Change one thing at a time. When developing and something fail, or feature stops working. It's better to find the problem if only one thing of the system is changed.
- Add logging and error handling early. The logging system can be very helpful in the debugging and diagnosing procedure. It is a way of verifying how things going on in the system.
- All new lines must be executed at least once. A new feature need immediate test to avoid spending time on debugging. Often, the best way is by automatic tests, but not always. But no matter what, every new line of code has to be executed at least once.
- Test the parts before the whole. Testing is a method to save time when developing new features. Often there are problems with integrating different parts. If you can trust that the parts work as expected, it becomes much easier to track down the integration problems.
- First understand the existing code. Most coding requires changing existing code in some way. Even if it is a new feature, it needs to fit into the existing program. And before you can fit the new stuff in, you need to understand the current solution. Otherwise you may accidentally break some of the existing functionality. This is means that reading code is a skill that is as necessary as writing code. It is also part of the reason why seemingly small changes can still take a long time – you must understand the context in which you make the change.
- Read and run. Understand and then develop. You can read the code, and you can run the code. Running the code can be a great help when figuring out what it does. Be sure to make use of both methods.
- Fix the known errors, then see what's left. Sometimes there are several problems present that you know about. The different bugs can interact with each other and cause strange things to happen. Instead of trying to work out what happens in those cases, fix all the know problems and then see what symptoms remain.

- Correlate with timestamps. When troubleshooting, use the timestamp of events as a help. Look for even increments. For example, if the system restarted, and a request was sent out around 3000 milliseconds before, maybe a timer triggered the action that lead to the restart.
- Ask. Reading and running the code is often great for figuring out what it does and how it works. But if you have the possibility to ask someone knowledgeable (perhaps the original author), use that option too. Being able to ask specific questions, and follow-up questions to those, can give you information in minutes that would otherwise take days to get.