

AE2GRP Individual Report

Advanced Xiangqi

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Date: April 28, 2016

Word Count: 2160

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Introduction

This report mainly introduces personal work, teamwork and personal interactive feedback. It is a whole year project, indeed only taking seven months. Finishing an Advanced Xiangqi game is our goal. Analyzing the requirements, we decided to create two version games after the group discussion, including a desktop version and an Android app. Because of the trust of the team members, I was voted as a leader in this project. Therefore, I made a detailed plan and checked the acceptance during the whole project.

Plan & Actual working process

The scientific and reasonable arrangement of project should be done in two semesters, following the principle of gradual and individual treatment principle, from simple to difficult, from low to high gradually. Consequently, two versions are divided into two periods and desktop version has been done in the first semester that I took most of the responsibility of that version. As a leader, I was in charge of the schedule planning. Timeline was also fixed numerous times during the project. In the later section, I would introduce the tasks one by one. In order to carry out the project better, we have regular meetings and passed the vital information to our supervisor briefly once a week. The general work as follows:

1. Research of Xiangqi, especially engine and languages
2. Algorithms and Swing learning
3. Start doing computer game, including UI and engine
4. Finish desktop version and write interim report
5. Android app
6. Test and modify the earlier codes
7. Finish Desktop and Android versions
8. Final report and presentation

Task 1 Research

In the first semester, there was five members and most were not skilled at Swing and engine algorithms. Consequently, there were two weeks, which were used as a research period. From my perspective, that period was a totally unorganized and useless period, leading to some errors in the following work, due to no direction and method research. A right and efficient research is significant for the whole project. Fortunately, our project was on the right track after some helpless time and adjustment promptly. In terms of languages, Java and C, which could be used to create games, has been learned before. As a result, Java was chosen as the basic language. The second reason but not the least, because it could be used in Android game for reference. As for the engine, we did not know much at the first period and met some difficulties and confusions that had caused some detours in the way. Because of the similarity between Chess and Chinese Chess, Chinese Chess research studied Chess engine. Since the timeline was confirmed on September 28th in 2015, the task started after that day and we finished on time but incomplete. These decisions were all made in the group meetings.

Task 2 Swing exercise and Algorithms

After the National day, after a team conference and then the whole team divided into two small groups that each person could do exactly what each

wanted to do. I have learnt Swing in last summer vacation so that I chose to write the main frame of Desktop Version with my teammates. However, it was hard to combine everyone's work because everyone had their own thoughts, not to mention that they had not learnt it before our early stage. I introduced a book to them and it was easy to conclude that exercise could develop the students' ability to analyze and solve problems. Practice makes perfect and it could solve any dilemma we had met yet. As a result, we tried doing some Swing exercise. At the same time, my teammates also started doing algorithms in the engine. Teammates tried pseudo-code firstly to enhance in logic. On the one hand, we found numerous questions that we did not notice before. On the other hand, another point was found that more specific requirements and needs for this project. Due to that the initial code was not complex and pseudo-code did not need to be tested in the compiler, we accomplished our own tasks with quality and quantity.

Task 3 Start doing this computer game, including UI and engine

After one-month research and exercise, we started our Desktop version on October 30th, 2015. Only has a clear objective that motivation would make us progress and find our potential. Professor Gary (2008) mentioned that if the teacher had demanded working software each week the students would have responded and they would have been one step further into making iterative development part of their comfort zone. Each week our supervisor would check our last week work and ask the plan of next week. With the help of our supervisor, we partially completed each week. However, we should suppose to complete the engine as the UI be finished. Due to the pseudo-code that was hard to transform into codes, our engine was not finished.

Task 4 Finish Desktop Version and write interim report

The initial engine was finished and we started to connect engine to UI on November 30th, 2015. The work of first semester came to an end. Interim

report concluded what we did, the contribution at the end of the first semester, what we learned and technical. We have a small meeting with our supervisor to consult and record our work including each meeting records. With these material help, we could write our report more specific. Software Engineering could refine working content, manage work and have a reflection feedback, which could avoid making similar mistakes and save time.

Task 5 Android app

In the second semester, we started our Android app, rewrote our engine and adjust the Desktop game. In this period, we had six members that we could choose any work we want again. In order to make sure everyone understand each part work, most of us chose other work we was seldom specialized in former period. It could prevent the slow progress of the project on credibility has limited the development of whole game in a way. Next, since we were grouped into two groups, I chose the engine part because I had written UI and I wanted to study more on the engine algorithms. Three were working on the Android app user interface. However, Java language in Android app is different from the Java application. As a result, they had to learn and finish it during this semester due to the deadline. Even they worked flat out, the accomplishment of Android app was still delayed.

Task 7 Test and modify the earlier codes

Eventually, the app was accomplished in the middle of April. We started doing the test and modify our pervious codes. In this period, we altered the engine functions and others where functions linked to the user interface. There are a series of measures to debug the codes. What I chose that was Rubber Duck Debugging. I told other people what I done in the programme and then I could find the errors. However, it was useless sometimes. In case that I had told my teammate each detail of codes, I could ask them for help. It seemed that cost me a great deal of time, actually it saved time to some

degree. Since the initial version had been finished, we had gotten six fixed versions. Every teammate would record their updated codes in the Tower which is a website could save data for the record. In this way, it is easy to point errors out or share the files. In the stage, the supervisor also gave his advice about the thread running. As the plan, the programme would run as the single thread. Obviously, the efficient and speed would get much slower and not necessary. Eventually, the single-thread was modified to multi-thread that the engine would run once the chessboard was changed. This task was connected to the next task, which also needed tests and modification.

Task 7 Finish Desktop and Android versions

After the testing, two versions were almost finished. The left part was the evaluation of our project. Evaluation was divided into three parts, including testing, questionnaire and feedback. It was designed to evaluate the game that members could modify the irrational functions or design. Although the engine was not perfect that it sometimes could not give people right or efficient suggestions, two versions still won admiration for the quick running and easy-operating system. Even there was error happened when threads were running in the same time.

Task 8 Final report and presentation

At the final step of our group project, each had to prepare the final report, individual report and presentation. By the interim report and meeting records, everyone collected the past information and wrote the final report first. The final report was divided into six parts that everyone could join in this task and write the familiar part. The presentation also assigned to everyone but two of us would be the representatives.

Group Reflection

In this group project, there are still some irrational and unsatisfactory situations existing. The serious mistakes, including unnecessary research and codes, lead to time waste. At the beginning of the project, it is easy to detours on the study that would be proved as a dead end.

About the irrational research mentioned before, efforts and time are dissipated that would affect the following arrangement. In case of the inadequate preparation, members have to do more to catch up the work schedule.

As for the coding programme, we need to pay more attention to the forward plan. If the function of the design and analysis is more detailed in early stage, when writing code to the realization of modular, making duplicate or similar functions are no longer required to write lengthy code, and the latter part of the reform movement may be best to adapt. However, there were a series of tedious codes in our programme.

Overall, the group cooperation is efficient and most members devoted great efforts to implement this project. The regular meeting also created favorable learning atmosphere for the group study. Besides, we maintained cordial relations with other members during the whole project.

Perspective Reflection

Overall, I am responsible and arrange the schedule strictly, but I still make some mistakes. Mainly three major mistakes for the group and three was the subjective misplay in individual part.

First is the research plan which most people did not accomplish or study the wrong way. In the next project, I should list the research plan detailed as

much as possible. The second one is the management of whole plan. I supposed that the Desktop version needed more time than Android version. Actually, Java in Android is disguised to the Desktop. What worse was that there was not enough time for the Android group. The third mistake is the engine. At the beginning of the second semester, I and another person, was responsibility of the engine, insisted that bitboard was much quicker than any 2D array or string. Besides, bitboard also admired by other people in the website (François D.L., 2000). Because of this, about two or three weeks were waste. Sam Altman (2015), who is the YC founder, has mentioned in his blog that "Always have multiple plans". Learned this lesson from experience, I need to remind me that I should prepare a plan B when the plan A is not raising anything.

The last mistake is the unforeseen incidents. Due to some errors happened in the Java Programme, I have exhibited symptoms of anxiety and overwhelming worry. It was harmful for the thinking.

In the other side, I also made effort as most as possible on this programme. First is to use the leadership that making sure everyone could join in and promoting the orderly progression of our work. The second is the individual work for the group that I have mentioned in the tasks. The last but not least, I can cooperate with any member well and encourage them when they were in trouble.

Conclusion

The whole project ended through busy and orderly hours. I have learned a lot not only in technical skills but also in project management and cooperation. Even the process is not perfect, but we gave our best try and made effort on the programme. If I try this again, I would do better on each tasks.

References

Gary, P. (2008). *Getting out of the comfort zone*. Available at: <http://www.ibm.com/developerworks/rational/library/nov07/pollice/> (accessed April 22, 2016)

François D.L. (2000). *Six articles about chess programming*. Available at: <http://www.gamedev.net/reference/programming/features/chess1/> (accessed April 22, 2016)

Sam Altman (2015). *Startup Playbook*. Available at: <http://playbook.samaltman.com/> (accessed April 22, 2016)

G52GRP Peer Assessment Form 1

Complete one copy of this form for each member of your AE2GRP group except yourself. Enclose all completed form as an appendix with your Individual Report. Rate the group member in question by ticking or marking with an “x” *exactly one* box for each evaluation aspect in the table below. Give a brief written justification for each assigned rating in the space provided below the table. For further information, see the Peer Assessment section of the AE2GRP Student Handbook.

Name of assessed group member: _____Feng YUAN_____

	None	Lacking	Adequate	Good	Excellent
Research & information gathering				X	
Creative input				X	
Co-operation within group					X
Communication within group					X
Concrete contribution ¹					X
Attendance at meetings					X

Justification of assigned marks:

1. She is a CSM student so that she is not good at the coding.
2. She took the responsibility of meeting records and she did well in this part.
3. When we had group meeting or some discussion, she always join in us well.

G52GRP Peer Assessment Form 2

Complete one copy of this form for each member of your AE2GRP group except yourself. Enclose all completed form as an appendix with your Individual Report. Rate the group member in question by ticking or marking with an “x” *exactly one* box for each evaluation aspect in the table below. Give a brief written justification for each assigned rating in the space provided below the table. For further information, see the Peer Assessment section of the AE2GRP Student Handbook.

Name of assessed group member: _____Yu QU _____

	None	Lacking	Adequate	Good	Excellent
Research & information gathering					X
Creative input				X	
Co-operation within group					X
Communication within group				X	
Concrete contribution ²					X
Attendance at meetings					X

Justification of assigned marks:

1. In the first semester, she was exchanging out. In case of that, she only took part in the second semester.
2. Her work hard and the Android Interface part mostly done by herself.

G52GRP Peer Assessment Form 3

Complete one copy of this form for each member of your AE2GRP group except yourself. Enclose all completed form as an appendix with your Individual Report. Rate the group member in question by ticking or marking with an “x” *exactly one* box for each evaluation aspect in the table below. Give a brief written justification for each assigned rating in the space provided below the table. For further information, see the Peer Assessment section of the AE2GRP Student Handbook.

Name of assessed group member: __Quanqiao Hui_____

	None	Lacking	Adequate	Good	Excellent
Research & information gathering	X				
Creative input	X				
Co-operation within group	X				
Communication within group	X				
Concrete contribution ³		X			
Attendance at meetings			X		

Justification of assigned marks:

1. In the first semester, I have warned him to do more in our project but he did not follow.
2. In the second semester, he only did the user manual.
3. The attendance rate is very lower than others.

G52GRP Peer Assessment Form 4

Complete one copy of this form for each member of your AE2GRP group except yourself. Enclose all completed form as an appendix with your Individual Report. Rate the group member in question by ticking or marking with an “x” *exactly one* box for each evaluation aspect in the table below. Give a brief written justification for each assigned rating in the space provided below the table. For further information, see the Peer Assessment section of the AE2GRP Student Handbook.

Name of assessed group member: Qiwei SUN

	None	Lacking	Adequate	Good	Excellent
Research & information gathering	X				
Creative input	X				
Co-operation within group		X			
Communication within group		X			
Concrete contribution ⁴			X		
Attendance at meetings					X

Justification of assigned marks:

1. His attendance is excellent but he always did nothing whole night for the project. In other words, his efficient is lower than anyone.
2. He always keeps quite and does not offer any information or questions.

G52GRP Peer Assessment Form 5

Complete one copy of this form for each member of your AE2GRP group except yourself. Enclose all completed form as an appendix with your Individual Report. Rate the group member in question by ticking or marking with an “x” *exactly one* box for each evaluation aspect in the table below. Give a brief written justification for each assigned rating in the space provided below the table. For further information, see the Peer Assessment section of the AE2GRP Student Handbook.

Name of assessed group member: Meng Yuan

	None	Lacking	Adequate	Good	Excellent
Research & information gathering					X
Creative input					X
Co-operation within group				X	
Communication within group				X	
Concrete contribution ⁵					X
Attendance at meetings				X	

Justification of assigned marks:

1. She did most engine part and was well in coding.
2. But she sometimes would not appear in our meeting due to the sleep.
