

Paper Prototype Game Development: Aeroplane Chess 2.0

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Content

a. Background.....	3
- Game introduction.....	3
- Game objective.....	3
- Scope of the game.....	3
- Target audience.....	4
b. Original game rules.....	4
c. New design rules.....	6
d. Process involved in simulating the game using non-digital mean.....	7
e. Summary.....	9
f. References.....	10

a. Background

1. Game introduction

Parch ́ Playspace:

The original version for the paper prototype. It is a casual board game on computer created by the social game company PlaySpace[1], and can switch on different play mode: single-player random matching, two-player and four-player mode. Players is required to spend virtual currency to attend a game and get more of it as long as they win, which contains the concept of gambling.

Aeroplane Chess 2.0:

The paper prototype version of Parch ́ Playspace, and a casual board as well. It can only require four players with each player owns four aeroplanes and takes them as four available pawns to move on the aeroplane chessboard. However, this game do not have the concept of gambling, which means that players do not need to spend money to attend a game meanwhile do not get any money if they win.

2. Game objectives

Two games have the same objectives. Players intend to move their chesses according to the given path on the chessboard in order to move all the four chesses to the destination first. Each player should roll to determine how many steps to move forward exactly in each round. The one who succeeds in achieving that is the winner of the game. However, during the process of moving on the chessboard, multiple obstacles will show up, which can either help the process or delay it.

3. Scope of the game

Parch ́ Playspace:

There are two dices to determine how many steps the pawns should go. Moreover, with involving virtual deal, Virtual Currency and Virtual Goods may not be transferred or exchanged among users excepted the system itself, and have no value outside of the Services. [2]

Aeroplane Chess 2.0:

Aeroplane chess 2.0 restricts only exactly four players in it. Meanwhile, there are only one dice to roll, eight chance cards for players that entering chance zones, which means that players only have 1/8 chance to define their fate. What's more, players can draw their pawn if and only if they roll 5.

In addition, this chessboard game is required to play on a specially created chessboard. Which is shown in the following picture. It contains home (four big squares in different color), path (small square zones connected), leaving zones (connect home and path, where aeroplanes take off), chance zones (small purple zones on the path, can pick chance cards), arrival zones (safe place toward destination), and destination.



Figure 1: Explanation of chessboard

4. Target audience

Parch 6 Playspace:

Players must be of legal age in their country of residence in terms of purchasing Virtual Currency. Meanwhile, the number of forming a team to play a game is four in maximum.

Aeroplane Chess 2.0:

This game is open for those in all age ranges except children under the age of three because there are pawns involved, which can be dangerous to kids. However, it is a four-player mode,

which means that the game shall get started if and only if there are four players gathering. Therefore, this is suitable for occasions such as a few friends come together or even some party time.

b. Original game rules

There are two dices in total. The system will roll for the player automatically in each round, after that the player has 20 seconds to decide which pawn to go. How many steps the pawn need to go depends on the number player rolls.

1. If the either one of the dices is 5 or the two of them adding up to be 5, one of the pawns owned by this player should take off.
2. If two pawn from different teams run into each other but will not stay in the same zone, the moving one should cross the other one and continue its steps.
3. If two pawns from different teams happen to step into the same zone on the chessboard, the latter one that stepped into the zone can send the former one home, meanwhile can go 20 steps farther.
4. When there is a pawn successfully entering the destination, the player can choose any other pawn he/she owns to go 10 steps forward.
5. There are some safe zones on the path, if the rule No.4 happens, the former one will not be sent home.
6. If two pawns from the same team step into the same zone, no other pawns can step ahead of these two.
7. If the two dices have the same number on top, the player can get another chance to roll in this round. If this situation happens three times continuously, one pawn should be sent home.
8. For those chesses that enter the arrival zone, they will not be sent home.
9. If a player succeeds in moving all four pawns to the destination, he/she wins.[3]

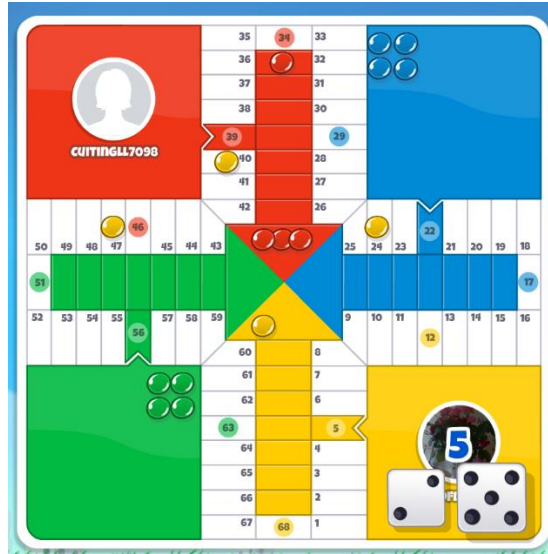


Figure 2: Original version of the chessboard in computer [4]

c. New design rules

The revised version, aeroplane chess 2.0, adapts to the situation that the paper prototype needs in this game by adding, revising and eliminating some of the rules. By revising it, the play mode of the game has changed into only one version: four-player mode, which means that it can only be played once all four players are ready together, single player and two players no longer satisfy the game requirement. Moreover, safe zones were replaced by a new rule called chance card. Besides, here are some the other rules.

1. Each player has four pawns, one of which automatically take off in the first round.
2. Use Rock&Paper&Scissor game to decide which player go first.
3. There are only one dice in this game. Players are required to roll for themselves and move their pawns according to the number on top.
4. If a player roll five, one of his or her pawns that has not yet taken off should go to the leaving zone. If the leaving zone (2 pawns space) is full, choose a free pawn to move five steps forward.
5. If two pawn from different teams run into each other but will not stay in the same zone, the moving one will be bounced backward, which means that the pawn should move backward for the rest few steps.

6. If two pawns from different teams happen to step into the same zone on the chessboard, the latter one that stepped into the zone can send the former one home; meanwhile can go 20 steps farther.(the same in original version)
7. If two pawns from the same team step into the same zone, no other pawns can step ahead of these two.(the same in original version)
8. There are few chance zones on the path. If a pawn happen to step into them, player should pick a chance card among eight of them, which can be either a good one or bad one. However, chance cards do not have any influence to those pawns that are in arrival zones.

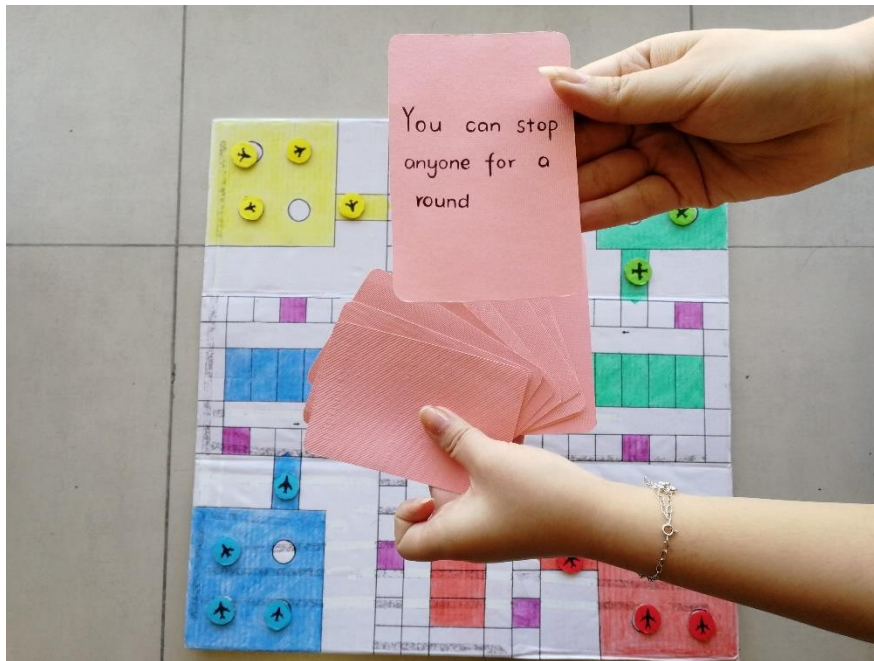


Figure 3: Chance card in the new game

9. For those pawns that enter the arrival zones, they cannot leave the arrival zones by any means.
 10. To enter the destination, the number of dice should be exactly the same with the steps that is needed to move. If not, the pawn will be bounced by the destination just the same as it is bounced by other pawn.
 11. When there is a pawn successfully entering the destination, the player can choose any other pawn he/she owns to go 15 steps forward.
- d. Process involved in simulating the game using non-digital mean.

The whole process of developing the paper prototype took us team members 3 weeks in total. For the first week, we gathered together to discuss which game to choose, what other new rules shall we apply, what material to use and how to develop it. For the next week, we mainly gathered together to make our prototype, then film the process of playing it. For the last week, we developed our report and presentation slides and meanwhile furnishing our previous achievement.

While making our prototype, here are some of the process that has been illustrated. First of all, we used A4 paper and drew a starting page that looks similar to the computer version, showing as follows. To emphasize the main characters in this game, we drew a dice and an aeroplane in the background. The title of the game is in the middle and the play button is at the bottom of the page.

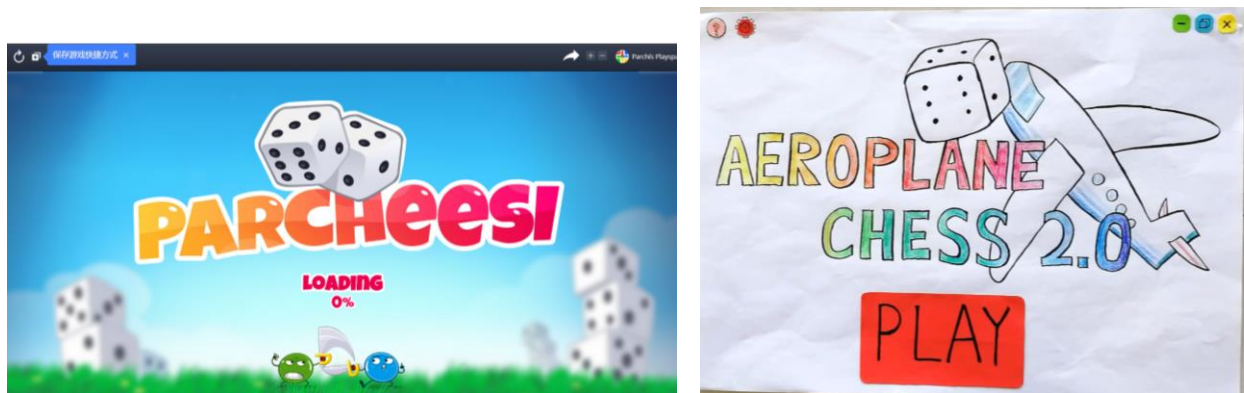


Figure 4: Comparison between original and revised version of starting interface[5]

The main process is to make the chessboard. We found a carton box paper and wiped it with pure white paper. After that we drew the chessboard zone by imitating the original version and adapting our own rules. Each team members had their own work to do, eg. sketching the draft, contouring the outline, painting the squares etc.

There are some small game elements to work on with. First is the dice, we used some hard paper and glue to build its frame. Next is the pawns, four different color pawns with each color contains four of it. Areoplanes were drawn on top. The last element is chance card. The cards were made by hard paper, words were written on one side of each.

To adapt the game rules more suitable to paper prototype version, we convert the random selection by computer into human behaviors. For example, when choosing which player to go first, instead of random selection, we applied Rock&Paper&Scissor to determine it. What's more, dicing were converted from automatical by computer to man-made throwing.

Other new rules like chance card and bouncing back were come out originally by ourselves in order to make the whole game more interesting to play. The chance cards provides more nondeterminacy, interactions and reversals to all four players. For instance, if a player pick a card that writes: “Your pawn should be sent home.”, then all efforts that made previously are in vain. If picking a card that says “You can send anyone’s pawn home.”, the interaction is made between four of them and created some uncertainty as well.

Our revised version has another advantage comparing to the original one. The paper prptotype do not charge money. In the computer game, players are required to spend game money to attend a game. If they do not have enough coins, they have to be charge money to fuffill it. [6] However, in the revised version, money is not required to attend the game, players can play as many as they want.

There are also some defects in developing the paper prototype. Examples like glue marks on the chessboard because of the glue in bad quality we used, video quality is not that ideal due to the limitation of our equipment and skills while filming, etc.

e. Summary

By doing such kind of process, we found that this game is quite playful and time-consuming, meanwhile with many interactions among players, friendship can be enhanced during the time playing together. Those were the reasons that we choose this game to do the paper prototype in the first place as well.

There are also some defects in developing the paper prototype. Examples like glue marks on the chessboard because of the glue in bad quality we used, video quality is not that ideal due to the limitation of our equipment and skills while filming, etc.

The only thing that we all agree with is that we did learn a lot during this project, and we found it to helpful in our further study. We cannot wait to impletement our learning achievements in this project in future study.

f. References

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4. Screenshot chessboard of Parch í Playspace from <https://www.playspace.com/es-es/jugar/parchis-online>
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