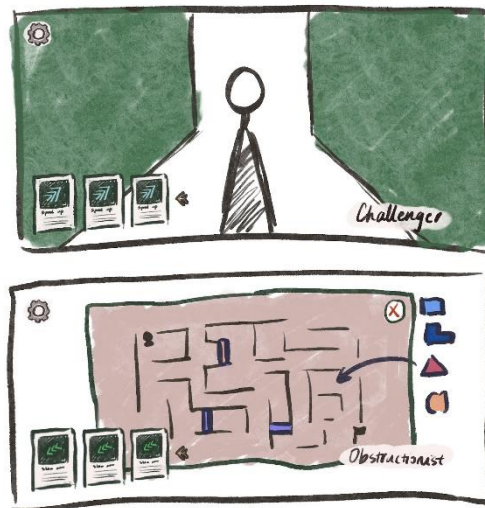


CISC496 Group 4
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Project Proposal

Introduction

Trouble Maker is a 1v1 competitive turn-based strategy game that takes place in a hedge maze, where one player (the Challenger) needs to find their way out of the maze, while the other player (the Obstructionist) tries to stop him.



The novel idea is that it is a combination of a battle game, a card game and a maze game. Allowing one player to control the world of another player is also something creative that we have not seen in existing commercial games. The Obstructionist has a birds-eye view as they put items on the map, which is similar to playing chess, with one player being the chessman that is manipulated by the Obstructionist. The entire game experience of the Challenger depends on the Obstructionist.

As for the novel technology, the challenger will have a third person 3d perspective, while the obstructionist will be playing a 2d game as they only need to access the map and the cards to add block items and disturb the first player. Ideally, the game will be able to play on two devices with Wi-Fi connection.

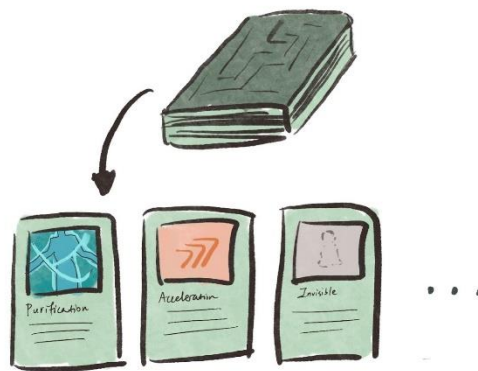
We will be testing our game every two weeks with our friends. We will record their performance and any suggestions they made after playing our game so that we can alter our game to make it more playable and interesting for players.

Gameplay overview

Trouble Maker is a two-player network game that will be run on PC or Mac operating systems. The core novel gameplay involved is a labyrinth battle game, but two opposite sides are manipulated in completely different ways. One of the players acts in the role of Challenger that aims to reach the terminal point of a labyrinth while the other's purpose is to prevent him or her which is the role of Obstructionist. The

Challenger manipulates an avatar moving in a third-person perspective in three dimensions. The Obstructionist does not play an avatar but always looks down at the entire map, places the obstacle or imposes debuff effects on Challenger, and observes the position of Challenger on the map as two dimensions. The gameplay allows each player to take turns to perform their activities in a given time, currently, 15 seconds is designed to be given. The approach of obstruction and how Challenger is going to counter is done by the mechanism of drawing ability cards from a built-in abilities pool. Different cards have different effects such as applying slows, placing traps, purifying, or increasing movement speed. The detailed abilities will be described in the following content.

The game system will not allow players to browse their opponent's hand during the full game process. A single game play will take about 10 minutes.



When the game starts, firstly two sides will draw a number of abilities cards as their original hand, then the Obstructionist has 15 seconds to decide which debuff or obstacle it would like to apply on the Challenger or place on the map. After 15 seconds, the Obstructionist is not allowed to perform further operations and Challenger has 15 seconds to explore the labyrinth, meanwhile, Challenger could use its hand to erase the debuff or enhance some of the abilities to assist its journey to the destination. Challenger will stop at the current position and is able to move no longer after 15 seconds pass, so far, a turn is considered to end and each side will draw two abilities cards and Obstructionist will repeat its operation again as a new turn begins. The game is finished if Challenger successfully reaches the end of the labyrinth and gains victory within a number of turns which is based on the difficulty of the map, otherwise Obstructionist is awarded a win.

The novel idea introduced is unlike traditional matchmaking games, the two sides of *Trouble Maker* match have completely different control styles. One side can move while the other obstructs it in a systematic way, so the game is much more playable since playing the different roles of characters would obtain an entirely dissimilar gaming experience.

The following are the current abilities card design. More abilities may be introduced in the future:

- **Challenger:**
 - Purification - erases a random debuff.
 - Acceleration - increases the speed of the avatar.
 - Growing up – allows the avatar to look through the labyrinth from a higher perspective.
 - Invincible – immunity to all the traps.
 - Timing – increases the moving time this turn.
 - Invisibility – the Obstructionist cannot see the avatar's position on the map until the next turn.

- **Obstructionist:**
 - Slow down – decreases the speed of the avatar.
 - Blindness – decreases the vision of the avatar.
 - Traps – places a trap that can stun the avatar for several seconds.
 - Barricade – blocks the path.
 - Chaos – reverses the manipulation of the avatar.
 - Teleport – moves the avatar back to the previous turn position.

Additional settings of the game are shown as follows. The game could have different difficulties based on the size of the map. The maximum turns that allow Challenger to gain victory will vary from the difficulties. In order to prevent the Challenger from getting lost in the overly large labyrinth, the system allows the Challenger to mark on the walls of the labyrinth to show that a path has been passed. To prevent the obstructionist from using an ability to block the path to the end completely, each maze must provide two paths to the end, and the obstructionist is limited to one use of the Placement Barrier ability, which may only be used at a given location within the first few turns. To ensure that challengers have a rough idea of the route at the start, there is always an arrow pointing directly to the finish.

Novel Technology

In terms of new technologies, we plan to apply some challenging algorithms. The first new technology that will be used in our game is providing a 2d map model of a 3D scene. A 2D map contains an icon representing the player's position in the 3D scene. When the player changes position, the 2D map will be updated with the player's new position at the end of the player's turn.

Also, the game requires two players to play on two different devices. In this case, this game needs to join the network system. At the same time, because this game is turn-based, we don't particularly need to control consistency, such as adding dead reckoning like fps games. We intend to update the changed game information to another player at the end of each game round.

Last, the game asks one player to place obstacles on the map, and the player is not allowed to block all the paths to the destination. Therefore, we plan to add some pathfinding algorithms to ensure at least a path allows the player to go to the goal.

Evaluation

Since our game is a two-player game, and it will be done with two computers in a game scenario, we need to find more than two people at a time to test our game. Our group planned to test our game every two weeks with our friends. Two weeks is not too tight and not too late to modify the game.

When the testers play our game for the first time, we will not give them any extra hints and instructions other than the instructions in the game. This allows the players to give us meaningful suggestions as well as makes it easier for us to find problems in our game. After players have played for several times, we will give them hints and instructions so that they can understand the differences between what they interpreted and the game's limitations, which may help us to bring out new ideas. In addition, we will allow players to switch game roles between each other to the point of stimulating new thinking and better help our game.