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CMS.608 Group Project 2

Slide Slide Revolution

Initially, we wanted to create a game where simplicity itself was the aesthetic goal. Our idea of a "simple kind of fun" is closest to Marc LeBlanc's definition of Submission, where the game is mindless pleasure (LeBlanc). However, as we began to brainstorm ideas for prototypes, we realized that we could focus on a better-defined and more rewarding aesthetic by emphasizing a feeling of realized Investment. According to Ion Storm, the player can come to value a game element because over time it becomes apparent that the player's investment in that element benefits their gameplay over time (Smith, 2003). Like many abstract strategy games, the player finds pleasure in studying the mechanics of the game, building a plan, and seeing it come to fruition during a playthrough.

Our major inspiration was Blokus, an abstract strategy game, where players aim to capture as much territory as possible. Players accomplish this by placing blocks of different sizes and shapes in order to capture as much of the board as possible while preventing, or blocking, their opponents from doing the same (Blokus). A second inspiration was the sliding ice block puzzles from the Legend of Zelda franchise. In these puzzles, a maze is navigated by sliding ice blocks around to reveal the proper path. When the blocks are pushed, they slide across the ice until they either reach the edge of the ice or hit an obstacle.

We framed our initial idea in the context of Mechanics, Dynamics, and Aesthetics. Although we moved away from an aesthetic goal of simplicity, we still strictly enforced simplicity in our mechanics. Hunicke and Zubek show that within the MDA framework, the player and designer have different perspectives of a game: the designer sees the mechanics end first; while the player sees the aesthetics end first (Hunicke, LeBlanc, & Zubek, 2004). We approached our initial version from both ends, asking ourselves whether we met the aesthetic goal of Investment, while imposing simplicity restrictions on our mechanics, such as requiring the rules to fit on a single page, or preferably a single paragraph.

For the first iteration of our game, we looked to maintain the block placement and territory capture elements as well as the (up to) four-player environment of Blokus and fuse them with the sliding movement of the Zelda puzzles. The first iteration of our game was played on an 8-square-by-8-square, sixty-four-space board, largely because sixty-four-space boards are common for other

games such as chess and checkers and are readily available. The rules for this first iteration simply allowed players to take turns placing a single piece on the board, by "sliding" the pieces onto the board from the side (Figure 1). When a player slides a piece onto the board it travels straight across the board until it comes into contact with another block or the edge of the board, in which case it stops. Unlike Blokus, the pieces occupy only single squares, but like Blokus players were not allowed to slide their pieces on to the board in ways that would allow them to come to rest on space directly adjacent (in one of the four cardinal directions) to one of their pieces already on the board. The goal of the first iteration was to occupy as many squares as possible. This version proved largely uninteresting as playtesting revealed that the player who went first was typically the winner. The first player had the most opportunities to place the pieces on the board, and at the beginning of the game, pieces simply slid across the entire board and came to rest at the opposing edge of the board from which they entered the board. If at any time a player had no legal moves, (the player cannot place a piece in a position not cardinally adjacent to any of his or her pieces already in play) the player lost their turn. Play ended when no player had any remaining legal moves. At the conclusion of play, the player occupying the most territory (the player with the most pieces on the board) won. While we achieved our goal of mechanical simplicity – a straightforward goal, single game mechanic of sliding blocks across the board until an obstacle is met – we failed to reach our aesthetic goal of Investment, as players were largely unable to affect the predetermined outcome of the first player's victory and therefore felt no sense of investment in their play.

Figure 1: Our initial prototype board and pieces.

In the next iteration of the game, we introduced the notion of *bumping*. In this iteration, when a piece meets another piece while sliding, it "bumps" the second piece across the board in the direction of the original piece's momentum. The piece bumped then continues until it encounters another piece or the edge of the board, while the first piece remains in the space where it initially came in contact with the second piece (Figure 2).

In the case where a piece contacts a second piece resting against the edge of the board, and the first piece is traveling towards that same edge, the first piece simply comes to rest against to the second piece; the edge of the board serves as a wall preventing either piece from continuing forward. This iteration had a more interesting play dynamic with the introduction of bumping but the beginning of the game still consisted of pieces being slid across the entire board and coming to rest against the edges of the board, limiting the board dynamics.
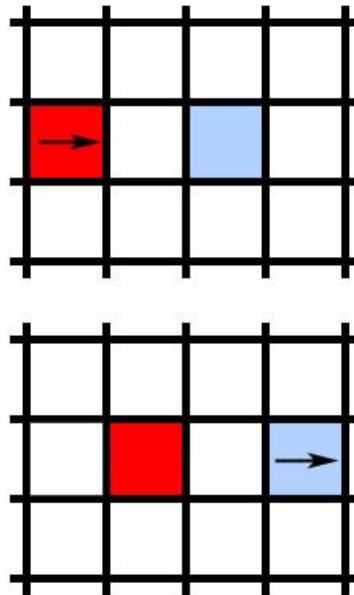
Figure 2: Our initial bump mechanic. In the top figure, the red piece is moving in the direction of the black arrow, towards the blue piece. In the bottom figure, the red piece has "bumped" the blue piece. The blue piece moves in the red piece's initial momentum, while the red piece remains stationary.

The third iteration of the game introduced significant changes to the environment (the board) in which the pieces moved. The board was reduced from 8-square-by-8-square dimensions to 7-square-by-7-square dimensions. In the center square of the board a non-player block or "rock" was placed. These changes served to reduce the number of available squares to forty-eight (7 x 7 = 49 spaces minus the center space which is now occupied) and to provide a center block against

which player pieces could come to rest. This gave the players an option to play their pieces at the beginning of the game in ways that would not cause them to always come to rest at the edges of the playing surface. The new number of available spaces, 48, is also evenly divisible by 2, 3, and 4, allowing up to four players to have the chance to occupy equal amounts of territory with an equal number of turns, increasing the fairness of our game, and therefore fostering a more meaningful and enjoyable playing experience.

In the fourth iteration, we stumbled upon an interesting change to the bumping mechanic we had previously introduced. Initially, we added arrows to our prototype pieces to clarify the direction of the pieces' movement as the players slid them onto the board. Upon adding the arrows, we realized that if the players were to slide the pieces onto the board with the arrows pointing in different directions (not necessarily the direction of movement) the arrows could be used to modify the bump mechanic. A modified bump mechanic was introduced that functions as follows: when a piece is bumped, rather than traveling in the direction of the original piece contacting it, it now travels in the direction the bumped piece's arrow indicates. Should this piece slide into contact with another piece, the next piece is bumped in the direction of the next piece's arrow. This continues until the final piece contacts the wall, or is unable to travel any further. A piece is unable to travel any further if it contacts a piece with an arrow directly opposing its own, or if it enters a group of pieces in which the arrows form a loop, locking the pieces in stasis. We noticed that this new variation of the bumping mechanic allowed players to manipulate their pieces into adjacent spots and form groups of their pieces by chaining bumps; accordingly, we decided to change the goal of our game from simply occupying territory to giving bonuses for larger groupings of player pieces. Our new goal introduced a new level of strategy – and thereby investment – to the manipulation of pieces on the board, as placement of pieces was more meaningful and not reduced to a simple place-holding purpose.

Playtesting with the class revealed that many details of our initial rules write-up were not complete, and the players did not understand how to play the game. Most of the confusion was due to lack of specifications in the rules, as well as trying to convey too much information in words when the mechanics quickly became very apparent to all the players through playing the game itself. However, there were not any complaints with the aesthetic itself, and the players found the game mechanic interesting and tried to find ways to use it to their benefit.

The current iteration features improvements made to the explanation of the rules, the scoring system, and the physical game board and pieces since the classroom playtesting session. The rules have been simplified to relate more clearly the sliding and bumping mechanics of the

pieces to new players. A new board has been constructed from foam board. The centerpiece of the board is permanently occupied by a black piece raised from the board. The presence of a physical centerpiece leaves no question that the center space is permanently occupied. It further realizes the playing environment created by the game system by providing a non-player centerpiece, which player pieces can actually meet and come to rest against. The pieces themselves have been remade from foam board and reduced in size allowing players to more easily pick them up and slide them onto the board. The tops of the pieces are now also entirely brightly colored, making different player's pieces easily to distinguish quickly, and feature clearly drawn white arrows that easily identify the orientation of each piece and its direction of travel in the event of a bump. Small triangles (used to prevent confusion with the arrows on top of player pieces) around the outside of the board highlight the entry points from which pieces may be slid onto the board.

We feel that we have met our aesthetic goal. Although initially, our rules were confusing, once the players got the hang of the game, they had fun setting up interesting layouts of the arrows and sliding the pieces around. We believe that playtesting revealed that players devoted a lot of effect to learning how to use the mechanics well. In one particular instance, one player got very excited when she discovered a new way to use the arrows, an emergent aesthetic that we did not predict or plan for, and then tried to set up more ways to use the trick she learned. Some rounds later, she expressed disappointment when her trick was blocked by another player, ruining the investment she had in the old configuration. This is very similar to the types of feelings players encounter when they are employing their strategies in Go and Chess, the investment aesthetic. Furthermore, we have maintained our mechanical goal of simplicity: our mechanic of sliding has not changed; the addition of the arrows merely modifies the bump mechanic and does not add significant complexity to the game play. By approaching the iterative design process from the MDA perspective, we feel we have satisfactorily created a game that invokes investment from the players while maintaining a simple game mechanic.

Rules for Slide Slide Revolution

<u>Setup</u>

This game can be played with 2 to 4 players. The game requires a 7x7 grid game board with an unmovable "rock" piece in the center and 24 colored arrow pieces for each player. Players can arbitrarily choose who goes first; play continues in clockwise order.

<u>Goal</u>

Players slide their blocks to form as many large continuous groups of their pieces as possible.

<u>Gameplay</u>

Player take turns placing pieces onto the board. A piece starts from the edge of the board and the player slides it in along one of the columns or rows until it collides with an obstacle. Note that the initial sliding direction is not determined by the arrow on the piece itself, and the piece itself can be in any orientation. The markers on the edge of the board remind the player what the initial direction of the piece should be. An obstacle can be either an edge of the board, the rock piece placed in the center of the board, or any piece already on the board. Once the piece collides with an obstacle, it stops moving. If the obstacle that stopped the moving piece is another player piece (i.e. the rock is not a movable piece), then the second piece is activated and the first piece becomes immobile. The activated piece will then begin moving in the direction its arrow faces until it collides with another obstacle. If that obstacle is a piece, this process continues until a piece runs into the center rock or the edge of the board, or enters a loop.

If the pieces end up causing a loop where no pieces are moved and the activation is passed continuously along the same path without evoking a change in position from the activated pieces, the activation power disappears and the turn ends. The most common case of this is when two pieces have arrows facing each other (Figure 3).

The main restriction on placing pieces is that the piece cannot have any piece of the same color in the adjacent four pieces to the place where the pieces collides with its first obstacle. This only applies to the position of the pieces at the time of the first collision. There is no restriction on the position of the pieces after the first collision has occurred. This does however mean that the first obstacle that the piece activates cannot be of the same color (Figure 4).

The final rule is that you must place a piece on your turn if there is any possible valid placement. If a player has no valid moves, their turn is skipped and play continues with the next

player. Note that this rule implies that you cannot activate another piece placed along the edge of the board by sliding a piece into it from the side of the board such that the piece is not on a valid square (Figure 4).
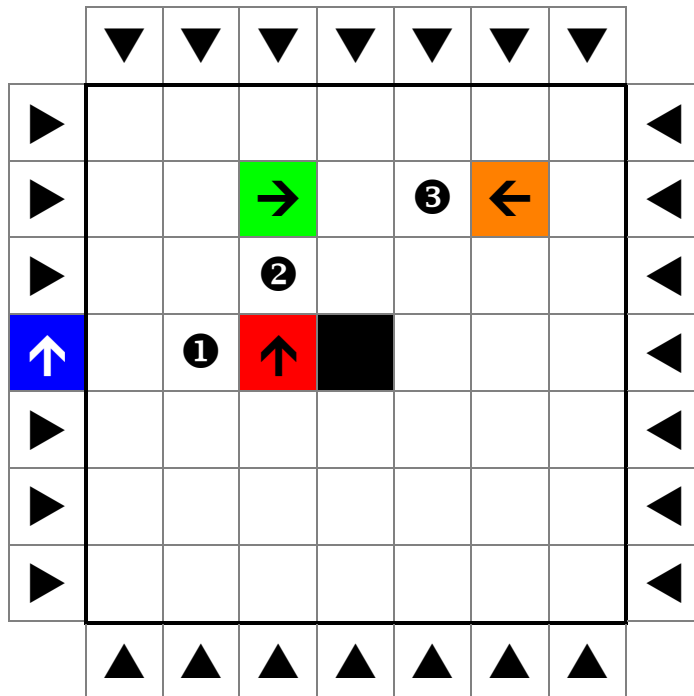
Figure 3: Player Blue's Example
- Blue plays a piece starting at the blue piece. Remember that the piece has initial movement indicated by the triangles; the arrow itself does not affect initial movement.
- The blue piece will stop at ❶, then passes the activation to the red piece.
- The red piece moves according to its arrow, stops at ❷, and passes the activation to green.
- The green piece stops at ❸. The activation is passed to the orange piece, which passes it back to the green piece. A loop is formed where no pieces move anymore, so the turn ends.
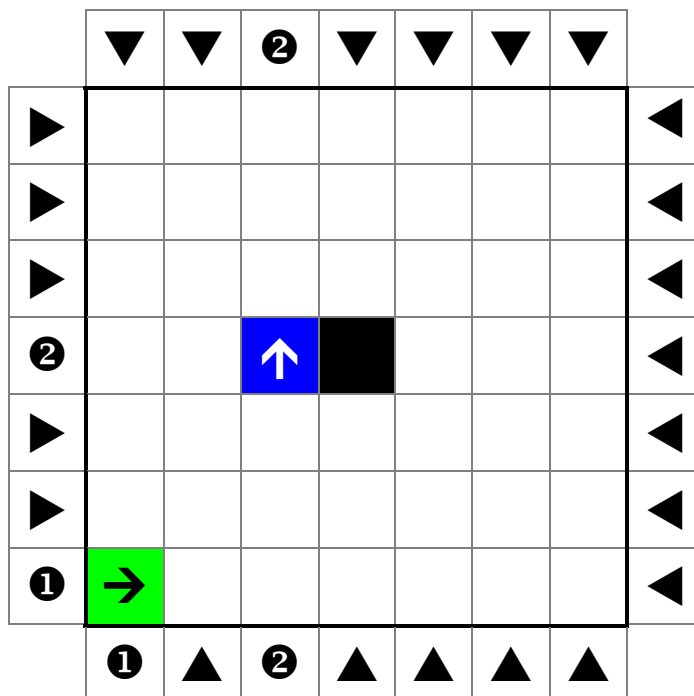
Figure 4: Valid Moves for Player Blue
- The player cannot slide in a piece from the ❶ locations, since that means the piece would never end up on the board.
- The player also cannot slide in from ❷ locations, since then his blue piece, at the time of the first collision, would be adjacent to another blue piece.
- All the other locations are valid for Player Blue.

Scoring

Play ends once each player has no remaining valid moves. The score is then tallied for each player by counting the number of groups of each size. A group is a set of tiles of the same color such that every tile is connected by a path containing only blocks of that color (Figure 5). Only adjacent blocks are considered connected; blocks that are diagonal to each other must have an adjacent block of the same color to be connected. Players get one point per each of their tiles on the board and then gain extra points for the larger groups. The bonus can be determined by the following table (Table 1) or by the formula $\frac{1}{2} \times n \times (n-1)$ for a group of size n. Players gain the bonus for each group of that size, so if a player has four groups with 2 tiles in each, the player gets 1 x 4 bonus points.
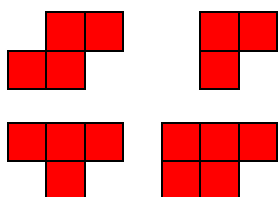
Table 1: Scoring for *Slide Slide Revolution.*

Figure 5: Example groups of 3, 4, and 5 tiles.

Group Size	Bonus awarded	Group Size	Bonus awarded
1	0	9	36
2	1	10	45
3	3	11	55
4	6	12	66
5	10	13	78
6	15	14	91
7	21	15	105
8	28	16	120

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