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**Game Proposal: 2x2D Puzzle**

**Core concept:**

Players arrange randomly generated two-layered pieces across overlapping 2D grids. Success requires application of spatial reasoning of both layers. High chances of failure and replayability can be expected from the game.

**Basic Rules:**

1. Piece preview: Players can parse through available pieces to place which both layers will be shown on the side.
2. Placement mechanics: Each piece are placed with reference to center-pixel coordinates, Overlaps or boundary breaches will invalidate placement and the piece will still be available to place.
3. Layer manipulation: Each piece can be rotated (0°, 90°, 180°, 270°) and have layers switched
4. Reset: Every reset generates new pieces
5. Win condition: The player wins if the board is fully filled without overlaps or gaps on either layer

**Core ideas:**

Failure with delayed feedback

* In 2x2D Puzzle, players receive no immediate feedback while progressing, only realizing success or failure upon completion. In “The Art of Failure”, Jesper Juul discussed how failure is important in games as it promises that “we can repair a personal inadequacy” via replaying with revised knowledge. Jesper also mentioned the paradox where players like to fail, but not too much. It is by technical limitation and complexity that a function that removes the last placed piece cannot be implemented, such that the game is designed to allow the player to assume success until proven not, minimizing the frequency of which the player acknowledges failure to maintain their motivation while retaining the possibility of failure.

Players are allowed to escape failure by improving their spatial reasoning skills or metagame with additional resources. For instance, externalizing the puzzle via drawing the pieces out (pen and paper or software like excel whichever they prefer) such that their chances for trial and error are only limited by the time wanted to invest in.

Replayability

* Unlike Groundhog Day’s repetitive time loop, where change is based on the choice of the “player”, 2x2D Puzzle attempts to create a certain degree of variability through random generation of puzzle pieces (mathematically there’s a limit for no. of discrete puzzles generated in limited space). Each reset regenerates all puzzle pieces, allowing players to have different playthroughs every time. Like the film’s theme of iterative self-improvement through repetition of the same day, this puzzle’s mechanical repetition of the same board but different pieces, if players decided to play this game multiple times, should improve spatial reasoning ability and thus solving the puzzle in shorter time.

**Brief Playthrough:**

A player begins with a 14x28 grid and 26 pieces each occupying space with different alphabets (i.e. the 3rd piece is made up with ‘nn’ and ‘||’ to represent blank space). The player selects a piece, analyzes both layers and decides if any rotation of flipping is required for each layer. The same is then performed for the rest of the 25 pieces.

Then the player attempts to fill in the board with each piece altered according to their understanding. However, at the xth piece, it was realized the remaining space cannot hold the x+1th piece. This attempt is failed, and the player must reset.

After resetting, a clean board and new pieces are generated. The player strategizes by constructing a pseudo board and recreates the pieces on excel. Testing each possible combination of rotation and flipping externally and eventually finds out a working solution. The player then carefully inputs the coordinates of each piece without mistake such that the tedious process of trial and error does not have to repeat itself. This attempt is a success.

Works cited:

Juul, Jesper. “Video Games Make Us All Losers!” *Salon*, Salon.com, 15 July 2013, www.salon.com/2013/07/13/video\_games\_make\_us\_all\_losers/.

Groundhog Day. Directed by Harold Ramis, Columbia Pictures 12 February 1993, University of Toronto Library

Draft for reference:

Length: 500 to 750 words

You’ll address one aspect of or issue in game studies by making a game using an online game engine and preparing some accompanying design documents. The first part of this assignment includes a proposal for a game. This short document will outline your game’s working title, core concept, basic rules, the core idea(s) you are engaging with, and a brief “playthrough” of how the game will be played. **You will cite at least 1 author from the course readings for ideas in which your game is in conversation. You are encouraged and allowed to engage in other sources.**

Course readings:

* “The Art of Failure” (brief selection) from Jesper Juul
* (film) “Groundhog Day” from Harold Ramis

Game title: 2x2D puzzle

Core concept: players will be given pieces of 2 layer puzzles, and will then attempt to fill in the puzzle board fully

(operational logic: pattern recognition, sorting, spatial reasoning, delayed feedback)

Basic rules:

* The player can cycle through available pieces and observe how each layer is laid out
* The player can place each piece via coordinates of the center pixel shown on the piece display
* If any part of any piece goes outside of the puzzle board, the placing is invalid and will not be placed
* The player can rotate and switch layers of each piece
* The reset button will reset the entire board, generating different pieces

Core ideas:

* Failure
  + Players will not know if they succeed or not until they reach the highly possible result of failure
  + (1 way of mitigating this is to metagame and use external resources such as drawing out every piece separately and attempt to fill the puzzle outside of the game)
* Replayability
  + Every game will be different (but not the same reason as groundhog day where its different by choice this is different by design)