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CART 253
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A MATCHMAKING MEMORY GAME WITH A TWIST

CART 253 FINAL PROJECT PROPOSAL

MY CONCEPT:

I want to create a memory game where the player has to pair up 12 cards on the screen. Just like in the classic game, they can only reveal 2 at a time. Their goal would be to clear all three rounds of the game. Each round will have a different difficulty level:

- **Round 1:** Each pair has its own distinctive color and design.
- **Round 2:** Each pair has its own distinctive design but the background color for all the cards is the same.
- **Round 3:** Each pair has its own distinctive design but the patterns in the pairs will be similar to make it more difficult to differentiate one pattern from another.

ARTISTIC VISION:

I want to create the designs on the cards with generative art so every time a new game is started, the patterns differ. I would have a total of 6 patterns generated per level and each one of them would be duplicated to create their pair. The challenge here would be to complexify the designs the more the player progresses through the levels.

TECHNICAL CHALLENGES:

- **Complexifying the patterns** on the cards as the player moves up the levels. I think a possible solution would just be to add more to the pattern by using parameters to create and adjust its values.
- **Pairing the cards.** In order to pair the cards, their positions and their designs have to be taken into account. A possible solution would be to create an array with 6 card types/designs and duplicate it to create its pair. When the player clicks on two cards, I would simply compare their positions in their arrays. If it's the same, then it's a match.

- **Showing the cards two at a time.** When a card is clicked, its pattern is revealed and the player proceeds to click on another card to make a pair. However, I have to make sure that the cards that were revealed go back to being hidden before the player clicks on a third card. (If the first two weren't a match. If they were then they stay revealed).
- **Counting the amount of times a player misses a pair.** If they had previously clicked on the card, I add a point to their "missed counter". The less misses they get, the higher the score. (I'm still not entirely sure yet of how I will calculate the total score.)

ADDITIONAL FEATURES:

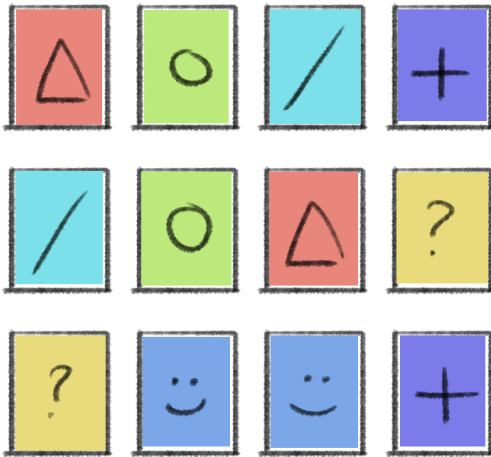
***These will only be implemented if I have enough time.**

- **Sounds:** When clicking on a card, not only does it reveal its pattern but it also makes a sound. There can be identical patterns that are repeated many times but with a different sound so the player would have to match them according to their sound.
- **Animations:** When clicking on the card, it reveals its design and does a little animation (shakes, a small rotation...) and the player has to find its pair by matching its design and the animations of the cards. However, some cards might not have an animation so in that case, the player simply matches them according to their design.
- **Remove the levels:** (Make the game high-score based.) When the player successfully matches all the cards, a new set that is more difficult to match is created. The score would be calculated based on the missed attempts. I could also possibly add a timer.
- **Adding more cards** to match as the game progresses.

SKETCHES:

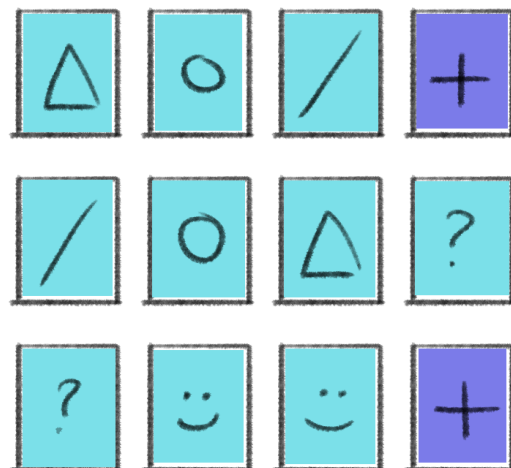
***These are mainly for reference, the designs on the cards will be more complex in the actual project.**

Example of Round 1 Card Possible Pairs.



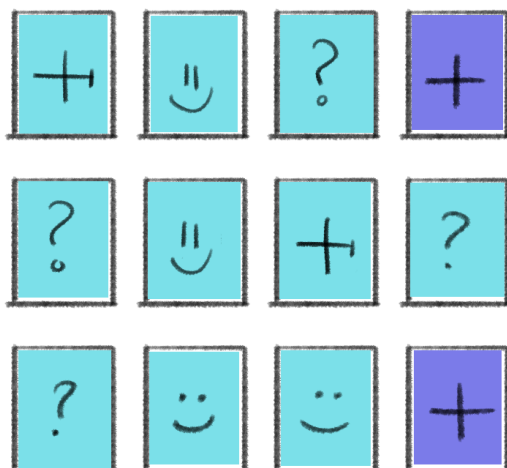
→ Different colors + Different designs

Example of Round 2 Card Possible Pairs.



→ Mostly the same color + different designs

Example of Round 3 Card Possible Pairs.



→ Mostly the same color + similar designs