PACT

The idea is to create an immersive and interactive version of the popular 2048 game, designed for casual gamers aged 14–40. Players use hand gestures, detected through a camera, to physically interact with the game by moving tiles on a grid in a spacious, dimly lit indoor environment. A projector displays the game on a surface, and the system tracks the gestures to shift and combine tiles. Additionally, two distinct markers are used to pause and resume the game. The game ends when a player successfully reaches the 2048 tile or runs out of moves. This setup delivers a sensory-rich experience that blends digital and physical gameplay elements, appealing to players who enjoy intuitive, gesture-based interactions combined with visually engaging gameplay.

|  |  |  |  |
| --- | --- | --- | --- |
| People | Activity | Context | Technology |
| Age: 14-40  Persona: Casual gamers seeking an interactive, fun, sensory experience. | Sound Effects  Score Tracking  Visual Effects  Players aim to combine tiles through hand gestures recognized by a camera. | Indoor location (dark/ dimly lit rooms)  Spacious room  Game lasts until one reaches tile 2048 | Camera  Marker stickers  Projector  Server |
| Players:   * Minimum height of 130 cm * no disabilities affecting gameplay * Only one player |  |  |  |

**Scenarios**

**Scenario 1: Playing 2048**

1. **Entering the Game Room**  
   Malek enters the immersive game room, where the 2048 grid is projected onto the wall. The room is dimly lit, creating an engaging atmosphere as he steps into the grid area, ready to play.
2. **Selecting the Timer:**

Malek enters the game room and approaches the projected interface. He is given two options either a “30 seconds” or “60 seconds”, he uses the mouse to select the "30 seconds" option from the timer selection screen.

1. **Starting the Game**  
   The game begins with two "2" tiles appearing randomly on the grid. Malek raises his hand to signal readiness, and the timer starts counting down from 30 seconds.
2. **Moving Tiles with Gestures:**

* Malek gestures upward, and all tiles move up, merging tiles with the same number into a new tile. For example:
  + Two "2" tiles combine into a "4" tile with its distinct color.
* Gesturing left or right shifts tiles accordingly, and the board updates to reflect the new tile positions and colors.

1. **Pausing the Game:**

* Midway through the game, Malek picks up the Pause Marker, immediately freezing the grid and halting the timer.
* He uses the pause to think about his next moves and how to maximize merges.

1. **Resuming the Game:**

* When ready, Malek picks up the Resume Marker, and the timer resumes where it left off. The colorful tiles continue to shift and combine as he gestures to control the board.

1. **Progressing Through the Game:**

* As the game progresses, Malek uses gestures to carefully control tile movements. He plans his actions to merge tiles efficiently while managing the available space.
* For example, he gestures downward to create merges and clear space for new tiles to spawn. He gestures right to position higher-value tiles closer together for larger merges.

1. **Managing Space and Tiles:**

* Malek keeps an eye on the grid to ensure it doesn’t fill completely. If it starts to get crowded, he uses strategic gestures to create space and shift tiles into new configurations.
* For instance, if most tiles have accumulated on one side, Malek gestures in the opposite direction to balance the grid and create more opportunities for merges.

1. **Achieving the Goal**  
   With just a few seconds left, Malek successfully combines tiles into the "2048" tile. The grid lights up with vibrant colors, and the system displays a congratulatory message: "You Win!"
2. **Next Round**  
   Satisfied with his victory, Malek steps away from the game area. The system resets the grid, removing all tiles and preparing a new game for the next player. Two fresh "2" tiles appear on the empty grid, ready for the next round.