

Game Mechanics of Dot Dash (Version 2 WIP)

Rules:

- In each round, nodes in the grid flash in a sequence that the player must replicate without making any mistakes before the timer runs out.
 - This is done either by tapping or swiping a continuous path through the nodes
 - When tapping, the path does not need to be continuous. When swiping, the nodes must be continuous.
 - Swiping: dragging one's finger on the screen to connect adjacent nodes
 - Whether the player has to tap or swipe is indicated on the screen
- If you run out of time or input an incorrect path, you lose a life and the pattern is displayed again.
- If you make a mistake, you are immediately informed in a very rude and abrupt manner
- When the game ends, score is displayed and player has the option of playing again or returning to the main menu.

How the game gets more difficult:

- Increasing blink speed
- Increasing length of sequence
- Decreasing the amount of time to trace/tap out the path
- *When swiping, certain areas of the playing field could be blocked*
- Moving/Swapping of nodes.

Game grid:

The game grid consist of a grid of nodes (or dots) that can blink, move, and be used to create paths. The starting size is a 3x3 square grid of nodes that can expand up to a 4x5 square grid.

Game modes:

Marathon (Default)

Player is given 3 lives for the duration of the game. Player is given swiping and tapping challenges to beat, if successful then player moves to next level. Difficulty increases slowly during each level. The player is also has a time limit to complete each level which is 15 seconds.

If the player gets the path/order wrong then they lose a life which will reset the timer and repeat the pattern. If the timer gets to 0 then the player loses a life, timer resets, and the pattern is repeated. Player will receive 1 point to their score for each completed level. Duration of the game is until player loses all 3 of their lives.

No Timer (Easy mode)

Mode plays the same as marathon with the exception of the timer. Player may take their time to complete a level.

Time Attack (5 Minute challenge)

Player plays until the timer runs out. Player is given an endless amount of levels to complete as the goals is to get the highest score as possible during the given time. Giving an incorrect path will result in losing 20 seconds of time.

Queue

Every turn a path is given for the player to repeat. Every time the player successfully draws the path, it repeats the path, but there's another node or two added to the pattern and removing the oldest node. The player then must draw this new pattern and this cycle repeats until the player gives an incorrect path. Every time the player gets the path correct, they receive 1 point.

Swapping/Moving of nodes:

For motion, paths will be determine before any movement of nodes. Once a path has been made using one of the algorithms a separate function will pick nodes for swapping. When nodes begin to blink to show the path, we can have the node that will be swap blink instead. After path has be shown, swapping will occur to create the path that was determined beforehand.

Score and achievement system:

After finishing a round of Dot Dash, the player's score is put into their leaderboard. The list of high scores can be access through the menu and will display the player's top 5 scores for each mode. The player can also unlock achievements for completing certain challenges or reaching a certain goal. These can also be access in the menu.

Algorithms:

Random Connecting Path:

For swiping/connecting levels this algorithm will generate a random connected path for the player to solve. The path can be set to a specific length.

Complete Random:

For tapping levels, algorithm will generate a random order of nodes for the player to repeat. Number of nodes can be set to a specific length.

Swapping and Moving:

Algorithm is used to change blinking path and to swap to correct path after pattern is shown.

Complete Path:

Creates a semi-random path that uses all nodes at least once.

Menu:

Menu contains the functions to access high scores, achievements, playing different game modes, and options. Menu should be easy to navigate with a functional design.