Universiti Teknologi MARA

The Solution of 2048 Puzzle Game Using A* Algorithm

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ABSTRACT

One of the popular games among young people is 2048 which is available across all platforms even in wearable devices. 2048 is a single player game played on 4x4 boards and has a simple rule to play where players only need to slide tiles and merge equal-value tile to reach the 2048 value. Unfortunately, the time duration in making total value to be 2048 could be very long and sometimes player require hints in order to solve the problem quickly. Hence, this project is focused more on optimizing the problems to minimize number of moves to achieve game's goal. The input data of this project is retrieved from the game's rule itself and implemented with the proposed algorithm which is A* algorithm. The output of this project is the best solution to achieve the goal using A* algorithm. This project use usability test for user testing system and functionality test to evaluate the efficiency of the game. Experiment result proves high accuracy and efficiency from the proposed algorithm. For future work, besides the program providing the shortest path to minimize the possible movement to achieve game's goal, the game could have a hint button attached to help the player.

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