Abstract

Othello Game is a fairly well-known logic game which originated from the Japanese. The game is played by two people. Othello Game is played on the arena board square boxes with black and white pin above the arena. Black pin must pass through a white pin to pin white pin can be changed into black and vice versa. The game ends when all the arena box already contains a pin, or all pins are there on the arena of the same color. The winner is the player who has a greater number of pins on the arena. This game requires a high artificial intelligence that began in 1977 world championships were held today.

This game is made in 3 shape of the board, 8x8, 14x14, and 20x20. This game is designed for humans to fight Artificial Intelligence (AI). Therefore, on the side of the AI will apply minimax algorithm. Minimax algorithm is a special algorithm that uses a technique game adversarial search. That is the opposite technique to analyze the game. This algorithm will maximize the position of AI and minimize human position player. Minimax algorithm will read the possibility of human players and AI step in tree shape. The depth of the tree affects the intelligence of the AI and the system performance. In this thesis, an analysis of the minimax algorithm, system performance analysis obtained from the average speed of execution time systems, and analysis of intelligence with AI carried out tests on 15 people as opposed to AI.

Based on the observations that have been done, the system performance analysis, minimax algorithm takes 2.089 seconds on the fourth of the tree depth minimax algorithms. In intelligence analysis, the AI has to win the game with a percentage of 60% on the fourth of the tree depth minimax algorithms. In addition, the minimax algorithm the memory requirement of 412 bytes is multiplied by the maximum number of tree nodes that are built minimax algorithm.

Keyword: Game Othello, Algoritma Minimax.