ABSTRACT

The application of artificial intelligence in computer games has increased in recent years. Maze Chase game is a game that takes place in a maze. The aim of the game is that the player must take all the points in the maze. Inside the labyrinth there are four Non-Playable Characters (NPCs) that move to chase the player. The shortest path algorithm is applied to the NPC in order to determine the shortest path from the current position of the NPC to the player position. In this study the author will compare the optimal level of path retrieval and the length of time needed in selecting the shortest path using the A* algorithm and the Time-Bounded A* algorithm.

With the implementation of the A* algorithm and the TBA * algorithm on the Maze Chase game NPCs, the authors found that the A* algorithm has a faster travel time of 17.28% when compared to the TBA* algorithm, while the TBA* algorithm expands the nodes 51.95% less compared to the A* algorithm.

Keywords: maze chase game, Non-Playable Character (NPC), A* algorithm, Time-Bounded A* algorithm, shortest path, Unity.