ABSTRACT

Android is an open source operating system that is currently widely used on mobile devices such as smartphones. This function is currently not only used as a means of communication , but also used for entertainment such as music , videos , photos, and games . One genre of game on android operating system is Platformer Jumper, where player must choose the right platform that can reach the goal without falling. The problem is there is still no Platformer Jumper games that use NPC (Non-Player Character) as a rival player.

In this final project made a game of "Student Jump" in which there is an object Indonesian students (elementary, junior high, high school student) as an object that is played by the player. For NPC will be played by a naughty student objects, where the object is use Artificial Intelligence (AI) to make searching paths or commonly called pathfinding. Algorithm A* is a pathfinding algorithm which is in the process of cost estimation using the actual distance values and the heuristic function to choose which nodes or paths that have lower cost, which would be chosen as the best path. So that will generate the best time to finish node.

Judging from the results of the study, Student Jump is the first game to use the NPC as a sparring partner. Based on the results of alpha testing, implementations of A * algorithm has been optimized and well, it's just that when compared with greedy and UCS (Uniform Cost Search) A * algorithm is overkill of this game. Because the number of nodes and time complexity its same. On the other hand based on the beta testing by using a questionnaire, 52% (55 student) said that the level of use NPC is very intersting, 38% (43 student) said that the character and background game is interesting, 41% (43 student) said that sound effects in game is interesting , and the average values are given at the level of use NPC is 83.94 (very interesting) and average values are given at the level without NPC is 73.35 (interesting).

Keywords: Android, platformer, pathfinding, A* Algorithm