Abstract

Parking process is an activity that we often encounter in everyday life, especially in large cities which is have so many offices, shopping centers, hospitals, and so fotuh. A large parking area with a number of vehicle parking lot will make the process more difficult and inefficient, therefore, some places already implement a modern parking system. Smart Parking System is a modern parking systems that can provide information of the availability of parking. This feature can simplify the process of parking, so drivers can know the location of parking will be entered.

But in its implementation, the information is not enough to make the parkint process easier. The large number of vehicle which enter the parking area at one time would make the parking process becomes so complex. Therefore a system that capable to determine the parking location nearest from the entrance is needed, the system also can give the information about the closest track to the parking location. To determine the location of the parking area, the system used a heuristic search method named Dynamic Weighting A* (DWA*), by using this algorithm the system will be able to provide the information that can faciltate the process if the parking area is very dense and crowded.

Based on the results of performed tests on the system, it was concluded that the DWA* algorithm can be used to determine the location of nearby paring and the shortest route to the location of the parking spot. The execution time of this algorithm is relatively short, compared to Dijkstra, which has a much longer execution time. As for memory usage, DWA* algorithm uses less memory becaus it generates nodes with very small amounts.

Keywords: *Smart Parking System, algoritma, Dynamic Weighting A*, Dijkstra, heuristic, node, memory*