SHORTEST PAHT ROUTING USING HEURISTIC SEARCH

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SHORTEST PAHT ROUTING USING HEURISTIC SEARCH

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ABSTRACT

Shortest Path problems are inevitable in road network applications such as city emergency handling and drive guiding system, in where the optimal routings have to be found. To achieve the best path, there are many algorithms which are more or less effective, depending on the particular case. Efficiency depends not only on the time needed for calculation, but also on the reliability of the result. A* algorithm is able to return the best path (if it exists) between two nodes, according to accessibility/orientation and, of course, cost of arcs. In this project A* algorithm was used, to suggest shortest path model between two selected points to find the fastest and shortest route on Malaysia map. This prototype then guides the users according to their interest and work.

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LIST OF ABBREVIATIONS

BFS	Best First Search
UML	Unified Modeling Language
RAD	Rapid Application Development
KL	Kuala Lumpur

CHAPTER 1

INTRODUCTION

The problem of shortest path is a common problem that arises in many fields, such as robotics, games, or web routing. The problem is for finding a path with minimum travel cost from one or more origins to one or more destinations through a connected network. It is an important issue because of its wide range of applications in transportations. Many of the shortest path algorithms use a heuristic to compute a path on an ad hoc basis. This project will focus on shortest road (basically shortest path) on road network represented as Malaysia map. Following shortest path model presented will find the most economical road. Therefore, the efficiency of the algorithm is very important. For instance, in order to improve the effectiveness of travel information provision, there is a need to provide some rational alternative paths for road users driving in road network, to meet it, A* algorithm use in general.

The literature describes many algorithms for finding the shortest path between two points, one of the earliest solutions proposed was Dijkstra's algorithm first published in (1959). The problem with Dijkstra's algorithm is that it finds the shortest paths to all other nodes in the search space as opposed to finding the shortest path to a single goal node. Dijktra's algorithm always visits the closest unvisited node from the

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