Universiti Teknologi MARA

UiTM Malaysia Route Planner

Mohamad Yunus Bin Mohamed Nasir

Thesis submitted in fulfillment of the requirements for
Bachelor of Computer Science (Hons)
Faculty of Information Technology And
Quantitative Science

May 2008

Acknowledgements

Alhamdulillah, at last I have finished my report in the given time. Thank to Allah for the blessing. While the project progress, many people help and give their contribution. So that, here I want to thanks and express my appreciation to them especially to my supervisor Puan Norasiah Binti Mohammad who always be there to guide me in completing this project. Special thanks to my Project Formulation lecturer, Mr. Syed Ahmad Aljunid for the guidance and advice in developing the project. Not forget my beloved family, my father Mohamed Nasir bin Yusof , my mother

for their love, encourage, support and care. Last but not least, to all my friends who help in developing and helped me to finished my project. Not forgetting to lectures who involved either direct or indirect during collecting and getting information to complete this proposal.

Abstract

Route planner is a connecting route between a starting point and a point of destination, wherein the starting point, point of destination and connecting route. Route planner addresses the question of how "best" to go from point A to point B. The shortest route is most appropriate than others because it can save time, cost and effort. The Route Planner's core is Dijkstra's shortest-path-finding algorithm, with extensions for time-dependent delays and paths constrained by travel mode. The internal network and trip requests are given to the path-finding algorithm, which creates routes and outputs them in the form of plans. The problem is, now a days there are many available routes that user can choose from Shah Alam to UiTM Malaysia. So, for the users, they may know or not which is the shortest route to follow. The objectives of this research/project are to provide information and guidance for users to find shortest path from familiar point or places to main entrance UiTM Malaysia by using car, to provide an approximation of the shortest distance between source and destination using Dijkstra's algorithm and to develop web based system UiTM Malaysia Route Planner for users who is familiar in Shah Alam.

The scope of this research is to developed for UiTM users from Shah Alam to main entrance UiTM Malaysia whose are using personal transport for example car. It only covers in Shah Alam which is taken from familiar point places such as PKNS, Stadium, Dataran Shah Alam and many more. Route planner is only focus on shortest path or shortest distance.

TABLE OF CONTENTS

Declaration.....ii

Acknowledgement.....iii

Abstract.....iv

1 CHAPTER 1 : INTRODUCTION.....1

1.1 Background.....1

1.2 Problem Statement.....2

1.3 Objective.....4

1.4 Scope of Research / Project.....4

1.5 Technique Employed.....5

1.6 Project Significance.....5

1.7 Research Purpose.....5

2 CHAPTER 2 : LITERATURE REVIEW.....6

2.1 Definition of Terms about Algorithm.....6

i. Algorithm.....7

ii. Dijkstra Algorithm.....7

iii. Route Planner.....8

2.2 Route Planner.....9

2.3 Related Research on Route Planner.....12

2.4 The Fundamental Design of Route Planner.....17

2.5 Technique to Develop a Route Planner.....19

2.6 Summary.....20

3 CHAPTER 3 : RESEARCH METHODOLOGY (SYSTEM DESIGN AND FRAMEWORK

3.1 Introduction.....22

3.2 Project Formulation Framework.....23

3.2.1 The Technique Involves.....23

i. Stage 1: Planning.....24

ii. Stage 2: Analysis/Data Collection.....24

iii. Stage 3: Design.....24

iv. Stage 4: Development.....25

v. Stage 5: Testing and Implementation.....25

3.2.2 Diagram of the procedure involves (details task).....26

3.3 Prototype Development.....29

3.4 The Fundamental Design.....32

3.4.1 Application Framework.....33

3.5 Hardware and Software Requirement.....34

3.5.1 Hardware Requirement.....35

3.5.2 Software Requirement.....35

4 CHAPTER 4: CONCLUSION

4.1 Introduction.....36

4.2 Requirement Check List.....37

4.3 Data Flow Diagram.....37

4.3.1 Context Data Diagram DFD.....38

4.3.2 Entity Relationship Diagram.....39