DENSITY BASED TRAFFIC LIGHT WITH AUTOMATIC STREET LIGHT

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A project report submitted to the Faculty of Electrical Engineering,

University Teknologi MARA in partial fulfilment of the requirement for the award of Diploma of Electrical Engineering

FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

MALAYSIA

SEPTEMBER 2015

ACKNOWLEDGEMENT

First of all, I would like to grab this golden opportunity to express my greatest appreciation to my supervisor, Sir Kamaru Adzha bin Kadirin for his contributions, invaluable advice and guiding in this project that motivate me in order to complete my project and gave me a lot of precious help and guidance when I met with some obstacles along the project with fully patience. Also, he provides me with the helpful information and details regarding my project so that I manage to complete this project. Furthermore, my deepest grateful thanks to my partner, who supervised and guided me throughout my project. The supervision and support that are given are truly help the progression and smoothness of the project.

My great appreciation also goes to Faculty of Electronic Engineering that arrange the final year project as a compulsory task for final year student to complete their course on time. This helps us to use wisely the knowledge that we have learnt in class and as a great experienced for us when encountered with the problems and the method or skill on solving it. Not forget, thanks for the contribution from University Islam Teknologi Mara (UITM) Pasir Gudang on their facilities and equipment. We manage to carry out our project with fully concentration.

ABSRACT

The project is designed to develop a density based traffic signal system with automatic street light. The signal timing changes automatically by sensing the traffic density at the junction. Traffic congestion is a severe problem in many major cities across the world and it has become a nightmare for the people in these cities. Conventional traffic light system which has been used before this is based on fixed time programmed to each side of the junction which cannot be varied. Junction timings are fixed. Sometimes higher traffic density at one side of the junction demands longer green time as compared to standard time. Thus, we prefer the density traffic light system. The system contains IR transmitter and IR receiver. The IR system gets activated whenever any vehicle passes the road on each junction. The IR system will count the number of vehicles and send to the microcontroller. ARDUINO MEGA 2560 is used as a microcontroller which provides the signal timing based on the traffic density. The microcontroller will save the counting in its memory. Based on the memory, the microcontroller will set the timing for each junction based on the number of vehicle sense. For the automatic street light system, we decided to use the Light Sensor Set to control the light.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Introduction

The traffic light that using conventional traffic light controller have some problem that cause the traffic system did not work efficiently. This chapter will discuss the problem of conventional traffic light that cause this project to be chosen. We also include the objective, scope of studies, problem statement, history of traffic light and the methodology of this project.

1.2 Problem Statement

Traffic congestion is a severe problem in many major cities around the world. Traffic congestion has been causing many critical problems and challenges in the major and most populated cities such as traffic accident. To travel to different places within the city is becoming more difficult for the travellers in traffic. Due to these congestion problems, people lose time, miss opportunities, and get frustrated. Traffic congestion directly impacts the companies. Due to traffic congestions there is a loss in productivity from workers, trade opportunities are lost, delivery gets delayed, and thereby the costs goes on increasing. To solve these congestion problems, we have to build new infrastructure and at the same time make it smart. So we need to change the traffic system. Therefore many countries are working to manage their existing transportation systems to improve mobility, safety and traffic flows in order to reduce the demand of