

**DEVELOPMENT AND IMPLEMENTATION OF GPS FOR
LOCATION TRACKING**

This project report is presented in partial fulfillment for the award of the
Bachelor in Electrical Engineering (Hons.)

Of

UNIVERSITI TEKNOLOGI MARA (UiTM)



AHMAD ASHRAFF BIN ARIFFIN

B. ENG (Hons.) ELECTRICAL

Faculty of Electrical Engineering

UNIVERSITI TEKNOLOGI MARA (UiTM)

40450, Shah Alam, Selangor Darul Ehsan

Malaysia

ACKNOWLEDGEMENTS

In the name of ALLAH, the Most Merciful and the Most Compassionate.

First and foremost, all my deepest gratitude goes to the Almighty Deity, as with His unlimited blessings, I am able to complete this report for my Final Year Project 2 as the major fulfillment of the requirement for the Bachelor of the Electrical and Electronic Engineering major in Communication successfully. Here, I would like to take this opportunity to express my gratitude to the people who had helped me directly or indirectly to accomplish my project.

My warm gratitude and appreciation is extended to my project supervisor, Cik Noor Hafizah Abdul Aziz and also my co supervisor Puan Kama Azura Othman for her extravagant contribution in guiding me to understand the whole project, polished the ideas and helps me with her might, just to ensure that we will be able to complete this project right on the time. Her indefinite guidance, support, encouragement and provision in helping me throughout the project have always been a great contribution and motivation for me to complete this project.

Thousands appreciation to my friends Mr Wan Adlin Harris and Mr Hariz Hazli who also helped me in giving positive comments for my projects. Also to all projects coordinators, lectures, laboratory assistance, colleagues and staffs of the Faculty of the Electrical & Electronic Engineering for the continuous support throughout the project, thank you so much.

Finally credit goes to my families and friends for their various contributions and supports in this project. I thank you for all your helps. Wassalam.

ABSTRACT

The use of satellite application for modern transport navigation is well established worldwide. Travelling through air and sea rely heavily on this technique of obtaining accurate and reliable positioning information. In recent years however, satellite navigation has started to expand into other areas such as recreation and emergency response. There is no doubt that this method of acquiring position is here to stay, and will continue to adopt into new applications. With today's stand alone global position system receivers, you are able to pinpoint your own position. But, what's more useful about stand alone GPS receivers it can measure a distance by know two points in the earth. Therefore this project is an attempt to design and implement Global Positioning System for hiking, climbing and boating inexpensive. The function of GPS is to locate the position of user and send a right direction from satellites. The signals from satellite will be shadowed by buildings, terrain, rain and also manmade obstacles that effects the accuracy of GPS range measurement. The hardware that was used is PIC18F4520 which integrated with GPS receiver typed FV-M8. This GPS will give the coordinates of latitude and longitude as well as the bearing angles between two positions. The algorithm of calculating the distance between these two positions also was developed by using PIC C Compiler. This algorithm has the ability of extract the data from GPS receiver and communicate via RS232 to test the interaction from GPS receiver. The microcontroller will be used to parse the NMEA data sentences and calculate the algorithm. Finally, the output will be displayed to LCD. After a several experiments that have been conducted in different location, view and weather, the results give an average of 10% slightly different compare with theoretical.

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CHAPTER 1

INTRODUCTION

1.1 OBJECTIVE

The main objectives of this project is to obtain point positioning coordinates which are latitude and longitude of the two location. It focus on GPS tracker system that can coordinates these 2 locations and distances between them. Other than that, the primary reasons of developing this project are to develop and implement user friendly and low cost GPS tracking system for outdoor activity.

1.2 PROJECT SCOPE

This is the final year project which is the prerequisite of all Engineering Students at Faculty of Electrical & Electronic Engineering, Universiti Teknologi Mara. This project, was started by studying the features of GPS system. Then research continues to find appropriate method so that GPS system can be used to achieved objective in this whole project.

1.3 PROBLEM

Through the use of the public GPS, involving 24 global positioning satellites one is able to determine their exact location in real time. However the employment of a GPS system in this application will lead to multipath error which effect the accuracy of the range measurement performed, GPS signal can be shadowed by buildings, terrain, raining and also man made obstacles, so it will having the effects of reducing the visibility of satellites. Others compatibility problems with the most recent upgrade to the timing and navigation constellation's ground control segment (NATO Team at USAF Space Systems).