Project Code JQ3-07

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Introduction

In the past, when a car broke down, drivers had to resort to the tow directly. Sometimes they even did not know where they were; the whole process was lengthy and costly as mechanic cannot check the car on-site or remotely.

Aim and Objectives

Our project is to build a remote vehicle on-board diagnostic system. It helps the drivers to check their car when they are out of order. It also improves the efficiency of the customer services of a service center. More than that, our system also provides real time diagnostic of the vehicle when it returns to repair center.

System Block Diagram
(Remote Diagnostic System)
The system consists of Global Positioning System (GPS), On-Board-Diagnosis Circuit, two mobile phones and a computer server. Two free wireless communication channels are Bluetooth (for short range) and SMS (for long range). The basic idea is to get the position and engine data of a car and send it back to computer server in a service center. The above system can work effectively over a long range and provides essential diagnosis of a car immediately.

(Real Time Diagnostic system)

The laptop is installed a program with friendly user interface to help mechanic to give faster and complete analysis of a vehicle. The same OBD circuit board is used in this diagnosis and this is because the circuit board is bi-channel supported, it allows users to use Bluetooth or the RS232 wire.

Hardware

- DB9 Port, connect to the control unit of the car.
- ELM323, convert the signal from the control unit to RS232
- DB9 Port, connect to the RS232 port of the computer
- LinkMatik 2.0 is a serial to Bluetooth data link.
- Max232, convert the RS232 voltage level to TTL voltage level
**Software**

**Computer Sever Program**

Computer server C# program continuously collects and decomposes the GPS and vehicle data received from Server’s Mobile through Bluetooth channel.

The correspondent diagnosis results inspired by the trouble codes and engine data will be displayed. Also the position of the vehicle will also be shown on a map.

**Mobile Java Program**

Client’s mobile first gets data like trouble codes from the vehicle through the OBD circuit. It also communicates with the GPS module through Bluetooth to obtain position information of a vehicle. All the information will then being packaged and sent to Server’s mobile through long-range SMS, which will further being forwarded to Computer server through Bluetooth.