School of Computing

Year 4 Project Proposal Form

SECTION A

Project Title Arduino vehicle anti-theft device

Student Name Aidan McGivern

Student ID 15414228 Stream CASE 4

Project Supervisor Name Stephen Blott

[Note: It is the student's responsibility to ensure that the Supervisor accepts your project and this is only recognised once the Supervisor assigns herself/himself via the project dashboard. Project proposals without an assigned Supervisor will not be accepted for presentation to the Approval Panel.]

General area covered by the project

The project involves using an arduino to connect to an on board car computer to build an anti theft device. The arduino will connect to the owners phone and notify them if their car is being used while they are not in the car. The location of the car will also be sent to the owner.

Outline

Background

A car computer provides a lot of information about a vehicle. The information generally isn't accessed unless the car is being serviced. It can provide information such as speed, revolutions per minute and engine temperature. Using this information it is possible to tell when a vehicle is in motion. By determining that a specific vehicle is in motion, it should be checked that the owner is in the car. This will be done by connecting the owner's phone through bluetooth to the arduino, therefore placing them in the car. If the owner's phone is not connected to the arduino, the arduino will send a text message to the owner to alert them. The text message will also contain coordinates of the car's location.

Achievements

With this project I aim to create a product that will give a car owner piece of mind that their car is safe. It will bring an additional benefits over a traditional car alarm as it will help you relocate your vehicle after it has been stolen rather than focusing simply on deterring people from stealing the vehicle. The aim of the product is to have the ability to be fitted to any vehicle.

Justification

While there are plenty of anti-theft features in modern day cars, some older cars are more susceptible to being stolen. My product will hopefully add another layer of protection for car owners. It will focus mainly on dealing with a car that has been stolen rather than stopping a car from being stolen. It would ideally be used to locate a car and track it after it has been stolen.

Programming languages

The programming language I will be using is C/C++.

Programming tools

I'll be using the arduino IDE to compile the code.

Learning challenges

While I have some experience of using an arduino I don't have extensive knowledge in C/C++. The biggest challenge that I am anticipating is the electronic part of the project. I will have to select and wire different modules to the arduino which I have never done before. There is also the added challenge of retrieving the correct information from the car through the OBDII port using the arduino.

Hardware/Software requirements

Hardware:

- Arduino mega
- Bluetooth module
- OBDII module
- GSM module
- GPS module

Software:

- Arduino IDE