University of Dublin

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Raspberry Spi

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Declaration

I hereby declare that this project is entirely my own work and that it has not been submitted as an exercise for a degree at this or any other university

Ellen Marie Burke 23rd April 2014

Acknowledgements

Thank you to everyone who helped me throughout this project

Abstract

Security systems set up in homes can be expensive and complex to set up. The cameras used can be bulky in size and therefore difficult to successfully hide. This project is to create a home security system using a Raspberry Pi and the Raspberry Pi camera module.

Contents

Chapter 1

Introduction

The aim of this project is to look at home security systems in a different way. The Raspberry Spi will allow users to set up a system and have complete control over it. It will allow for additional features to be used. Raspberry Spi differs from other security systems with regards to size and cost.

Chapter 2

Design

One of the main aims of this project is to make it easy for others to set up. With this in mind there are not a lot of hardware components required for the Raspberry Spi. Additional hardware items such as a keyboard and mouse would only be needed for initial set up.

2.1 Hardware

The following is a list of hardware components necessary:

- Raspberry Pi Model B
- Raspberry Pi Case
- Raspberry Pi Camera Module
- USB Hub powered externally
- Wifi Adapter
- SD card

2.2 Software

The following is a list of all the software that will need to be installed:

- Operating System Raspian
- OpenCV
- Apache
- Motion

2.3 Additional

With the Raspberry Spi being set up on a home network port forwarding needs to be enabled. Port forwarding will allow for HTTP requests to be sent to the pi.

Port	**Needed for**
80	HTTP Requests
8000/9000 or 8080	Video Live Streaming but can be changed
22	SSH into the Raspberry (Optional)

Chapter 3

Implementation

Chapter 4

Testing

Chapter 5

Conclusion

The Raspberry Spi is a way to set up a home security system that is affordable, easy to hide and not complex. It can have multiple real life uses depending on the end user. Being set up on a home network allows for having full control over the system from who can access the Raspberry to the resolution of images being used. All of the Raspberry Spi code is available to download from github which allows for endless possibilities of additional extras.