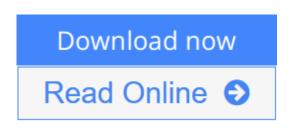# Building a Home Security System with Raspberry Pi

By Matthew Poole

Building a Home Security System with Raspberry Pi By Matthew Poole

Build your own sophisticated modular home security system using the popular Raspberry Pi board

About This Book

- This book guides you through building a complete home security system with Raspberry Pi and helps you remotely access it from a mobile device over the Internet
- It covers the fundamentals of interfacing sensors and cameras with the Raspberry Pi so that you can connect it to the outside world
- It follows a modular approach so that you can choose the modules and features you want for your customized home security system

Who This Book Is For

This book is for anyone who is interested in building a modular home security system from scratch using a Raspberry Pi board, basic electronics, sensors, and simple scripts. This book is ideal for enthusiastic novice programmers, electronics hobbyists, and engineering professionals. It would be great if you have some basic soldering skills in order to build some of the interface modules.

What You Will Learn

- Understand the concepts behind alarm systems and intrusion detection devices
- Connect sensors and devices to the on-board digital GPIO ports safely
- Monitor and control connected devices easily using Bash shell scripting
- Build an I/O port expander using the I2C bus and connect sensors and anti-tamper circuits
- Capture and store images using motion detectors and cameras
- Access and manage your system remotely from your mobile phone
- Receive intrusion alerts and images through your e-mail
- Build a sophisticated multi-zone alarm system

In Detail

The Raspberry Pi is a powerful low-cost credit-card-sized computer, which lends itself perfectly as the controller for a sophisticated home security system. Using the on-board interfaces available, the Raspberry Pi can be expanded to allow the connection of a virtually infinite number of security sensors and devices. The Raspberry Pi has the processing power and interfaces available to build a sophisticated home security system but at a fraction of the cost of commercially available systems.

Building a Home Security System with Raspberry Pi starts off by showing you the Raspberry Pi and how to set up the Linux-based operating system. It then guides you through connecting switch sensors and LEDs to the native GPIO connector safely, and how to access them using simple Bash scripts. As you dive further in, you'll learn how to build an input/output expansion board using the I2C interface and power supply, allowing the connection of the large number of sensors needed for a typical home security setup.

In the later chapters of the book, we'll look at more sophisticated topics such as adding cameras, remotely accessing the system using your mobile phone, receiving intrusion alerts and images by e-mail, and more.

By the end of the book, you will be well-versed with the use of Raspberry Pi to power a home-based security system that sends message alerts whenever it is triggered and will be able to build a truly sophisticated and modular home security system. You will also gain a good understanding of Raspberry Pi's ecosystem and be able to write the functions required for a security system.

Style and approach

This easy-to-follow guide comprises a series of projects, where every chapter introduces a new concept and at the end of the book, all these concepts are brought together to create an entire home security system. This book features clear diagrams and code every step of the way.

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- Rank: #169559 in eBooks
- Published on: 2015-12-28
- Released on: 2015-12-28
- Format: Kindle eBook

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Editorial Review

About the Author

Matthew Poole

Matthew Poole is a systems engineer based near Southampton on the south coast of England with over 20 years of industry experience. After graduating in electronics and communications engineering, he went on to train as and to become an air traffic engineer for the UK Civil Aviation Authority, working on microprocessor-based control and communications systems. Later, he became a software architect and mobile technology specialist, and worked for several consultancies and global organizations. He is now a partner at UK Mobile Media, a boutique systems consultancy focused on designing Bluetooth and other wireless systems, taking ideas from concept to prototype. He is also the director of technology for Mobile Onboard, a leading UK-based transport technology company that specializes in on-bus connectivity and mobile ticketing.

Users Review

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