Example Project Proposal

A Simple Arduino Alarm System:

A Project Proposal

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Introduction

In this paper we describe a modification of a simple Arduino based alarm system. The original project, developed by James Bruce on makeuseof.com, describes a system that detects the movement of an intruder with an ultrasonic sensor and attempts to deter them by sounding an alarm and blinking a series of lights. [1]

Novel Contribution

We aim to replicate the functionality of the original project with the addition of an "arm / disarm" sub-system that will allow the owner to enter and leave the protected premises without the alarm sounding whilst protecting against intruders. For this, we propose the addition of a keyad which requires a user to enter a pre-programmed passcode to pass without sounding an alarm.

Motivation

This project was chosen out of the nescessity for the author to defend their cheese-puffs from a certain theiving roommate. The author has, on many occasions, purched entire bags of cheese-puffs only to find that they have been stolen from their designated cheese-puff cabinet. It is the hope of the author that this project will not only save a fair deal of cash on cheese-puffs, but will serve to finally catch that theiving monster once-and-for-all.

Materials Required

According to the project website, the following materials are required:

- Arduino UNO

- Ultrasonic ping sensor

- Piezo buzzer

- LED Strip

In addition, the following materials are required:

- Keypad

Milestones

If the project is kept properly on track, the following mile-stones should be met:

Milestone 1	July 20	All parts gathered
Milestone 2	July 25	Initial assembly -- no code
Milestone 3	July 27	Working alarm system w/o keypad
Milestone 4	August 10	Working demo with keypad
Milestone 5	August 14	Stretch goal: system sends email when triggered

The final milestone is a "stretch goal" whereby the system will send an email whenever the alarm is triggered. That way, if an offense occurs, the exact date and time will be noted and saved.

It is anticipated that there will not be many set-backs as I am quite competent when it comes to electronics. There may be some issue meeting the final milestone as I am quite lazy and probably will settle for four milestones.

Team Roles

If I were part of a team, I would discuss what sort of roles each teammate would play. For example, perhaps one of us is not particularilly experienced at programming but really good at documentation -- it'd probably be a good idea to have that person work on the github documentation / writing the paper. Etc. etc.

Summary

If this project turns out as proposed, the cheesy-poofs shall be protected and everything will be right with the world. There isn't a whole lot of time to complete this project so very realistic and conservative goals have been identified. It is best to get started right away.

[1] http://www.makeuseof.com/tag/how-to-make-a-simple-arduino-alarm-system/