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Final Project Proposal

Introduction

From our collective effort, our team members have collaborated on creating a motion-based home monitoring and surveillance system that we are calling as ***"The Home Monitor".*** Home monitor is a DIY surveillance system that is powered by Raspberry Pi that uses an external image sensor or simply a camera that takes visual feed and sends an email as push notifications to alert the home owners. Home monitor is done with few intricate but not tricky combination of wiring and a sophisticated script that runs on python. The further details are described below.

Defining the Problem: What, Who, Where, Why, How and When

As mentioned above, home monitor is a DIY sensor-based camera that uses *Infrared* as its primary sensor to track heat via motion to capture visual feed. This project aims to bring an easy monitoring and surveillance system for home owners and renters that is low-budgeted, portable, self-doable and does not require extreme level of expertise to create and operate one. Home monitor can be installed and kept anywhere since it focuses on portability. For an instance, out by the door, inside the room, corners of ceiling etc. The main reason of creating such device is to provide a sense of security and protection for stakeholders (home owners and renters). Actively monitoring our home allows us to be aware about our surroundings and potentially prevent any casualties from happening like porch piracy and burglary. The home monitor will make use of infrared sensor to detect a motion, any movement will be instantly recorded and notified to the stakeholders via an email notification.

Implementation and Deliverables

This project will utilize the power of two Raspberry Pi to provide operational, functional and computational capabilities to the whole system. Two external cameras will be attached

alongside each Raspberry Pi to enable concurrent recording (of videos) of two ideal spots at the same time. One camera can be installed by the front door and another by the backdoor ideally to track activities of these two places. The cameras and raspberry pi's will be wired with two bread-boards to configure and enable technical functionality and support overall. A python script will be coded to handle computational ability to provide operational and functional support for the whole setup such as emailing the stakeholders in case of any movement. The resulting device would be able to effectively handle everything mentioned previously.

The whole project could take roughly two weeks to be completed as we figure out ways to incorporate two system of Raspberry Pi into one that provides seamless access and error free result from the final prototype. So far, the only milestone we have successfully achieved is the installation of one camera using one raspberry pi. The process of configuring another Raspberry Pi and another camera would set another milestone which is what we are trying our best to get it to work before the submission deadline.