Home Automation and Control System (HACS)

Overview
The Home Automation and Control System (HACS) is a prototype implementation of “The Internet of Things.” The goal of this system is to provide the customer with a user-friendly way of controlling their home using only their smartphone.

Technical Details
The core of the HACS is comprised of the iPhone and the Arduino Uno. These two devices communicate over a home WiFi network. The Arduino is connected to the WiFi router via ethernet and hosts a web server to enable two way communication. The iPhone simply connects to the Arduino’s server in order to transmit commands and receive status updates from the system – including readings from various sensors. The HACS can easily be adapted to control and utilize a wide variety of peripherals. The five home peripherals used in this prototype are shown below.

Features
- **Temperature readings**
  - Always know the temperature in any part of your home

- **Motion Readings**
  - Know if something is moving in and around your home
  - Can be switched off in case of kids or pets

- **Lock control**
  - Unlock or lock your doors with the touch of a button.
  - Choose whether or not to lock your door whenever a motion sensor is triggered

- **Light**
  - Turn on lights and open blinds at the touch of a button
  - Set timers for your lights (and blinds) to turn them on or off at the interval of your choice

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