Overview: Grandparents have a vacation home that is in the desert 120 miles away. The home has automation through the internet which includes video camera, IP phone, thermostat control and garage door monitoring. Having the ability to turn on the Air Conditioner before arrival helps cool down the house which is critical for a home in the desert during the summer months.

Problem: The internet occasionally will go down which requires a reboot of the equipement. This is a manual process that requires unplugging the modem, IP phone and router and then plugging them back in one at a time in a specific order, waiting for each to boot before plugging in the next. Since the home is 2 hours away, this is not feasible without physically being at the location and would require a 4 hour round trip to accomplish.

Solution: Provide a monitoring system that will continually check to see if the internet is connected and have the ability to automatically reboot the hardware if the internet is down.

Implementation: Design is to use a Raspberry PI computer board driving a relay board to accomplish this. The Raspberry PI runs a shell script every ten minutes (through a Cron job) that pings a couple of web sites (yahoo and google) to determine if the internet is active. If both pings fail, a C program gets launched that turns off all the devices attached to the relay board. Then they get turned on one by one to reboot. At the end of the reboot process, once the internet is restored, an automated email is sent to indicate that a reboot occurred.