

Individual Project Proposal **Home Environment System**

I plan to make a system that will automatically control the environment inside a home. The system can be manually turned on or off at the user's desire. It can also be set to turn on automatically upon entry through the front door using the house key. The system will have default values or user defined values. When powered on, the system will detect the time of day and the current temperature. If there are no user-defined values, the system will automatically turn on the lights and/or heater according to the default values.

For example, the time is 1:30 am and the light switch is across the living room at a hard to reach place. It is dark and you don't want to make a ruckus by bumping into obstacle between you and the light, or you would feel more secure coming home to a lit house. With the Home Environment System set to turn on automatically upon keyed entry, the lights will turn on after a certain time (e.g. 6:00 pm) as well as the heater (e.g. temperature is below 60°). If the user enters the house during the daytime, the user may set the system to not turn on the lights but only turn on the air conditioner.

The following is a list of features of the Home Environment System:

- Manual power on/off
- Key sensor (detects entry through door using key)
- Time sensor (keeps track of time of day)
- Temperature sensor

If the lights and AC/heater are already on, the Home Environment System will be overridden, the system will not take action and remain idle. The system does not replace the thermostats in homes to control AC/heater functions. It can only turn the AC/heater on or off, and will not have any timing control. However, if the AC/heater is turned on, timing control will be handed over to the thermostat and the Home Environment System will go back to being idle (waiting for the next keyed entry if this option is turned on). The user will have to manually turn the lights off.

