Spring 4-2012

Alarm Clock Controlled Automatic Curtain Opener

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Senior Design II
Final Project Report

April 23, 2012

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ABSTRACT

Waking up in the morning can be tough. For some, an alarm clock is not even needed in order to rise and get ready for the day with plenty of time to spare. For others, it can take much more than just an alarm clock to be forced out of bed. Studies [1] have shown that a dose of sunlight early in the morning can help reset our circadian rhythm, making it easier to wake up.

My project is to create a device the integrates an alarm clock with an automatic curtain opener. The curtain opener will only require the installment of a traverse rod, if one is not already installed to open and close the curtains (such as if a traditional curtain rod is currently used).

EXECUTIVE SUMMARY

For my senior design project I decided to create a device that would integrate an alarm clock with an electromechanical means of opening my curtains. In order to achieve this goal, I first had to do some research on what is currently on the market. Next, I designed the overall system, including the inputs and outputs. Logic design was next, where I figured out what was needed to do with those inputs and outputs. After that, circuit design would implement the logic previously designed. Mechanical design would follow, converting the logic and then electrical signals into physical motion that would meet the criteria of my system design. After the design phase was completed, I procured parts and then proceeded to build my system. As each piece of the system was built, testing was done to ensure each part functioned as designed. Finally, it was all brought together, and final testing/debugging was performed.