Opportunity and Significance

Throughout the entire BE 1200 course, we learned the basics of applying Arduino-based programs to conduct several activities such as lighting up LEDs in a sequence, using and controlling the direction of a servo motor, using shift registers to add numerous LEDs and much more. In the final project for this course, we designed an Arduino Barbie that combines several Arduino-based applications to create a delightful and amusing setup.

Technical Approach, Accomplishments and

*Materials used in design: Arduino Board, Breadboard, Barbie doll, Several LEDs (Purple and Blue), A clear box, Wires, Shift Registers, Decorations, Servo Motor, USB cable, Laptop

Technical Objectives

The objective of this design is to combine several Arduino applications and codes to design an animated setup of a Barbie that can move and light up by programming an Arduino.

Background:

The Arduino board is a platform that is designed to make associated and collective designs and programs in order to achieve tasks. An Arduino board contains digital and analog pins that can be connected to other boards to further expand the tasks of an Arduino. The board also includes a Universal Serial Bus (USB) that can be used for loading programs from a personal computer.

Results:

After the combination of several Arduino based applications and designs, we were able to create our Arduino Barbie. We combined several codes and put together several designs and decorations. The end results were based on a Barbie doll that lit up using several LEDs that were connected together using shift registers. In addition, the result also included a servo motor that was connected to the pins in the Arduino board, allowing the Barbie doll to spin 90 and 180 degrees.

References: