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ENGG 401- INTRODUCTION TO ENGINEERING

ARDUINO-BASED LIGHT SENSOR CONTROL OF CAMERA

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I. OBJECTIVES

- To conduct a flexible presentation in the classroom.
- To capture the entire presentation in an efficient manner.
- To let teachers and students in different location participate in the set-up of a class without boundary.
- To help the presenter focus more on his/her delivery of the message instead of the media to be used.
- To utilize smart space technology inside the classroom and minimize the use of too much operation in terms of technicality.

II. BACKGROUND

Consumers have embraced the freedom and flexibility of untethered wireless access, which drives the demand for smaller but more capable mobile devices. In the United States, smart phones that typically include video recording and viewing features have already captured 25% of the mobile phone market, and are on track to capture 50% by end of 2011. (Gill et. al, 2012)

These mobile devices have tremendous potential to record presentations, lectures and talks flexibly, cheaply and inclusively. However, these devices, without further adaption are inappropriate to record presentations such as classroom lectures for the entire duration or with enough resolution.

Through the use of multimedia communication, systems let teachers and students in different locations participate in the class synchronously. Online presentations and lectures are normally recorded by a single video camera manually aimed at the presentation. Although this model has worked well for simple talks, it does not work well with modern presentations that include multiple sources such as whiteboards, presentation slides, demonstrations, and may include teleprompts.

Furthermore, A single view that attempts to capture all views generates a static, boring view that is hard to follow, and somehow misses contextual information for comprehension. However, a traditional solution of capturing videos requires the use of a camera operator and professional camera equipment, which are time and labor expensive, and are not passive or portable solutions. In addition to the above issues, the camera in motion technique does not fully utilize the fact that these auxiliary information sources have smaller regions of interest, and that some information sources such as slides, change slowly.

Thus, the proponents generate a camera in motion through the use of Arduino Uno. After converting texts into a coded form for the Arduino, the proponents had proceeded on conducting the phase of the prototype. Another purpose of the prototype is to save time in class when a teacher is not present around the room. It will also diminish the awkwardness inside the classroom when operating the keyboard and mouse.

III.   SUMMARY

The Arduino-Based Light Sensor Control of Camera is consisting of Arduino Board, Breadboard, Jumper Wires, Servo Motor, Light Dependent Resistor, Cal switch, and Resistor (10K) as its materials. The proponents come up with a phase design in the concept of the Solar tracker prototype. Through the use of cardboard, paint, recycled materials, and Styrofoam, the proponents were able to create an output design.

In the process of the prototype, the proponents programmed first the codes through writing it in the Arduino. They carry on the plan of programming the Arduino and after a lot of trials and hard work, the proponents were able to finish the codes and run it as an output. For the trials and testing they observe the product and were able to run it. Then assemble the storage of the prototype then figure out the concept behind the product. The proponents were able to conceive a light sensor control of camera to save time in class since the need statement of the group states that "We want to save time in class."

IV.   DESIGN