ARDUINO UNO AUTOMATED SUNSHADE SYSTEM

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ABSTRACT

In order to meet the consumers of a better life the traditional furniture is developing in the direction of intelligence, but the traditional furniture with single function such as courtyard sunshade has been developing in the direction of Intelligence. The researchers purpose to change the traditional sunset, where is an automatic sunset system add an environmental monitoring system of for the sun shapes and increase voice playback function which realize the data exchange between the sun shade and the user through Bluetooth direction of Smart home . This paper uses design platform and provides the designs scheme of the intelligent as well as the beginning method of the use of the end of the paper . The feasibility of the user and the device and the flexibility of the designs scheme will be proved by Arduino and open source development platform which can be used in the development of traditional home intelligence. It also aims in proceeding protection to doors, windows and especially vehicles.

INTRODUCTION

Arduino is an open-source, interactive, and user-friendly electronics platform for making electronic projects for beginners and professionals. It offers an integrated development environment (IDE) that helps simplify the coding process. The IDE is based on C and C++ programming languages, providing a wide range of libraries and functions to develop the projects. The Arduino platform consists of different hardware boards, also known as Arduino boards, which are equipped with microcontrollers. These microcontrollers serve as the system's brain. The product created is an automatic sunshade system for vehicles, it is fully autonomous and is controlled by temperature and light sensors. This system would allow a shade to simply cover the window of the car when the car reached a certain temperature and when a certain amount of light was passed through the car. Boundaries

were set so that the shade would not work when a vehicle is on. A switch was added to the system in case you wanted to raise the shade even though neither of the parameters were met. For example, if it was a cool night and you wanted your car covered for privacy, you could simply hit the switch to raise the shade. You could also turn the system off.

METHODOLOGY

I wanted a simple to make and use design that could eventually be integrated into a vehicle. This means it would be already installed feature for the vehicle. However, as currently constructed it could be used for a window shade system as well. For the design creating process several sketches and ideas were made, but after using a decision matrix the now made product was the decided concept to construct. Through a computer or laptop, code from the Arduino programmer is sent to the Arduino Uno that then reads the code and enforces the commands. Once code is uploaded to the Arduino Uno there will not be any need to stay connected to the computer to continue the program as long as the Arduino Uno gets a different power supply to run. The H - Bridge in the circuit provides an output of 5 volts which is enough to control the Arduino Uno. Allowing the system to work without the computer as the power supply for the Arduino Uno, making the system portable, which is necessary if wanted to be used in a vehicle If Two limit switches, a temperature sensor, a light sensor, an RBG LED, and a H - Bridge is connected to the of uno.The limit switches are cutoff switches for the circuit to tell the system to stop movement. A 12 Volt, 1.5 Amp battery provides power for the motor. The battery is connected to the H - bridge so that motor rotational direction can be controlled.

ADVANTAGES

• Well-designed sun control and shading devices can dramatically reduce building peak heat gain, cooling requirements ,provides shade and improve the natural lighting quality of building interiors.

• This often leads to increased satisfaction and productivity.

• Also the one not having shade facility/shelter are beneficiary.

• When it comes to home ,it protects doors,windows and some of the valuable things inside to home.

• It is simple and easy to use. It is easily programmable, which makes it beginner friendly.

• Arduino Uno can be used to build many projects, including LED blinkers, Robots etc.

• It consists of various pins, which makes it more compatible and can be used to connect different electronic components.

• Arduino Uno boards are cheap in comparison to other microcontroller boards.

• Arduino has a large community of active users making support or any help that is needed for Arduino boards widely available.
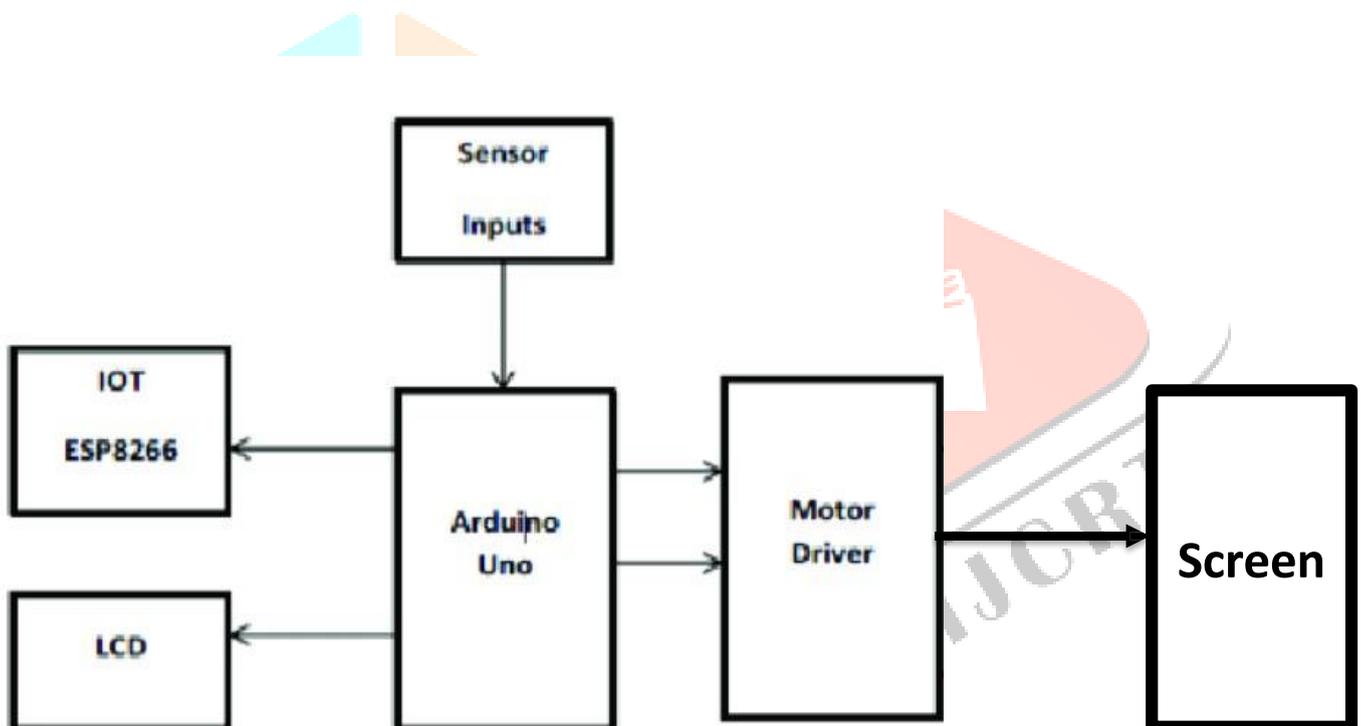
DISADVANTAGES

- Too Complexity
- Limited Functionality

APPLICATIONS

- Primary Buildings
- Offices
- Administrative Buildings
- Multi Family Housing Projects
- Factories

BLOCK DIAGRAM

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