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BASKETBALL ARCADE GAME

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INTRODUCTION

Build an electronic score keeper system using an Arduino microcontroller, some lights, sensors and Legos.Press start button to begin gameMake as many baskets as possible in 30 seconds.If 30 points have been scored, extend game time an additional 30 seconds.A top score will be recorded and displayed and light show will activate.

SYSTEM ANALYSIS AND DESIGN

1 Introduction

Build an electronic score keeper system using an Arduino microcontroller, some lights, sensors and LegosGame Play.Press start button to begin game.Make as many baskets as possible in 30 seconds.If 20 points have been scored, extend game time an additional 20 seconds.A top score will be recorded and displayed and light show will activate.

2 Existing System

This was just an idea at this stage. I actually play the game all the time so I think I will take it to the next level. I want to use IoT technologies to store the scores in the cloud. I also have a huge 32×64 LED matrix board and a doorbell that could add some great arcade effects.

3 Issues in Existing System

The problem in this system is the gameplay problem. Since it is based on arduino which is connected through device, it is easily to access and gameplay.

4 Problem Statement

The problem here is the system which is existed for a very long time has flaws in it. It is easily crack able through the third party applications present in the internet. Our objective is to minimize this flaw with the help of newly built RGB display

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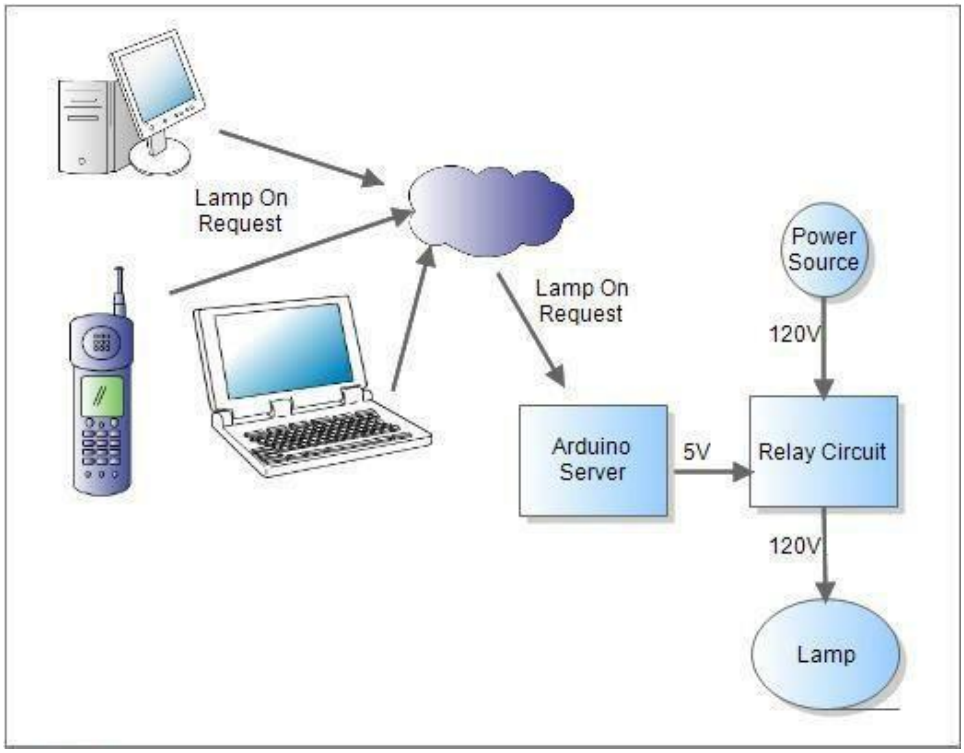
5 System Architecture



Arduino NANO

The Arduino Nano is a small, complete, and breadboard-friendly board based on the ATmega328 (Arduino Nano 3.x) or ATmega168 (Arduino Nano 2.x). It has more or less the same functionality of the Arduino Duemilanove, but in a different package.It lacks only a DC power jack, and works with a Mini-B USB cable instead of a standard one.

MODULE DESCRIPTION

Design and Implementation

the two LEDs that make up a single segment are wired in parallel. Then, connect each segment to a single output channel on the multiplexer. I wired the segments in the following order: for the tens digits, segments A-G are wired to channels 8-14 (respectively) on the multiplexer. For the ones digit, segments A-G are wired to channels 0-6 (respectively) on the multiplexer. If you change these connections for any reason, you must modify the code.

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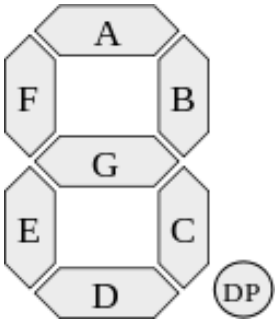
ULTRASONIC Sensor Layer

Setting up the ultrasonic distance sensor is pretty straightforward. There are a ton of tutorials online for the sensor so I will just give you the information. The concept behind the sensor is pretty simple. The "trigger" pin sends out a sound wave. The sound wave bounces off the closest object and back to the sensor and hits the "echo" pin. Based upon the time it took for the ping to be sent and received and the speed of the sound wave, we can calculate the distance the object is from the sensor. The code for this is also pretty simple.

The distance sensor is placed below the rim. There just happens to be one of those spaces in between the next so that the sensor is not occluded.

7 SEGMENT DISPLAY MODULE



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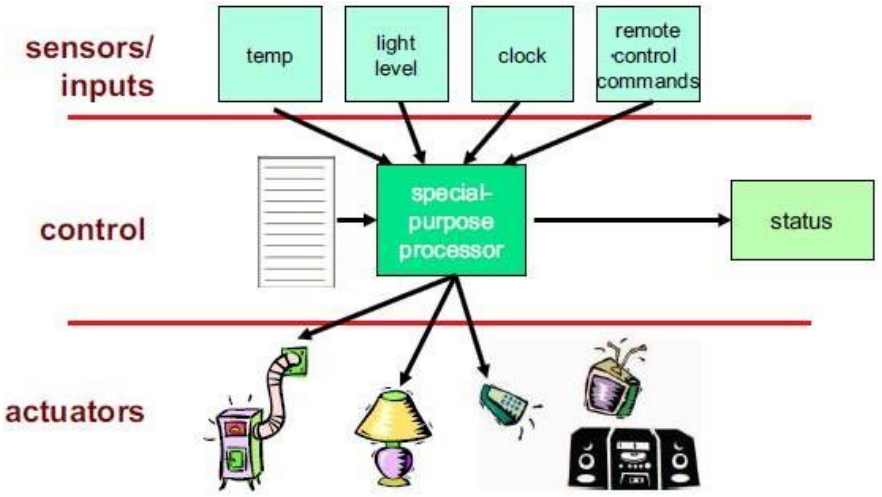
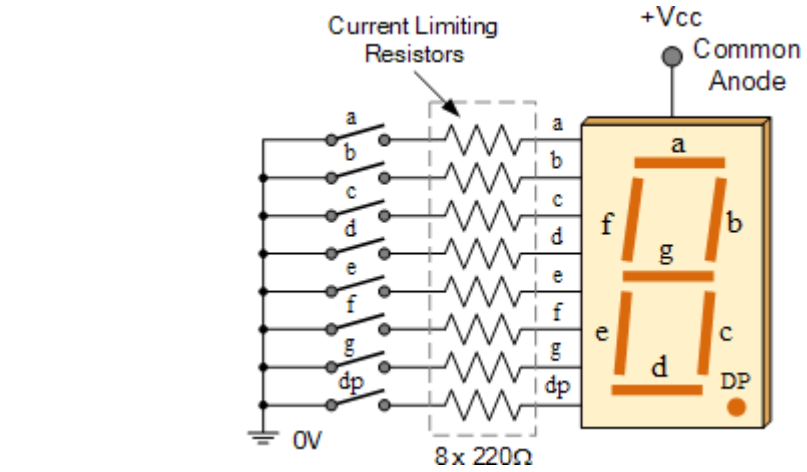


Fig. 1.7 SEGMENT DISPLAY



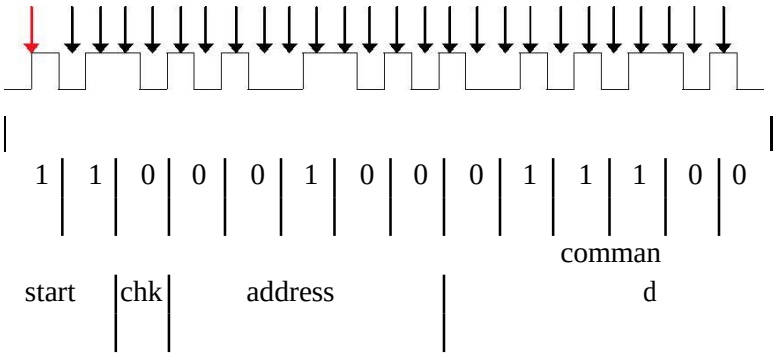


Fig. 3. Phillips RC-5 Encoding Protocol