Report

Introduction

This project is all about safety in less electricity Consumption you know in our home for security purpose we use cameras but cameras consume too much power we can add one more circuit into it That circuit help us to reduce power consumption .

Need of Project :-

- This project can reduce power consumption in camera circuit. An average power consumption of a camera in one day is nearly around 200 Watt if we consume same amount of power and if in our home 5 camera then our total power consumption is around 30000 W and If we modify that circuit by using this project then you can save lot of power For an example in previous circuit you require 30000 W But now you require only 1 Atmega 328 and one source for providing power to Door Sensor And If we are using magnetic door sensor then it battery can run upto 10 years thus it is very efficient and Atmega 328 P require 34 W on an average in a year and our camera will operate only when our door will get open And By this method we require less power.

- Total power saved = Total power require now-Total power require in circuit

- Total power saved=30000-34=29966

- We can save upto 99 percentage power by this method

Hardware Implementation

- In this project we have to just buy one Atmega 328 P and Door sensor equal to no of gate in your home After that you can implement in your home also. By the help of these our camera on when only when door gets open and this is the advantage of our project.

Software Implementation

For software Implementation you require one Embedded c program and For writing code you require microchip studio or Atmel Studio or you can also do some modifications in VS Code and You can also write your program there also

CODE FOR Our program is given below

/*

- Main.c

- Created: 4/21/2022 5:49:13 PM

- Author: Om
*/

//#define F_CPU 16000000UL

#include <avr/io.h>

Int main(void)

{

//I have created this program for 5 Door Sensors

DDRB=DDRB&0b11111101;//This is because I have taken pin B1 as input pin that's why in 2nd pin there is 0

DDRB=DDRB&0b11111110;//This is because I have taken pin B2 as input pin that's why in 1st pin there is 0

DDRB=DDRB&0b11111011;//This is because I have taken pin B3 as input pin that's why in 3rd pin there is 0

DDRB=DDRB&0b11110111;//This is because I have taken pin B4 as input pin that's why in 4th pin there is 0

DDRB=DDRB&0b11101111;//This is because I have taken pin B5 as input pin that's why in 5th pin there is 0

DDRC=DDRC|0b01000000;//This is because I have taken pin C6 as output pin that's why in 6th pin there is 1

```c
While(1)

{
If(PINB & (0b00000010|0b00000001|0b00000100|0b00001000|0b00010000))

//All 1st to 5th pin is given here I have taken or operation of all these because if any place output is 1 then our led glow or our
//Camera will operate I have placed Potentiometer in place of Camera.

PORTC=PORTC|0b01000000;

//Means If above condition is true than Our pin C6 detect high or led glow

Else

PORTC=PORTC&0b10111111;

//Means If above condition is true than Our pin C6 detect low and our led not glow

}

Return 0;
```

• Now you have to open Simul ide and you have to build diagram like this in figure 1

• After writing this code you have to press on build then Run build and after that you have to go into the folder in which you have written your program and. In that folder one new folder is automatically get created you have to just open that and you can see one hex file is there You have to just keep it there

• After building this you have to double click on Atmega 328P and after that you have to load firmware for that you have to go into the page where you have created hex file and After that you can run this program

•Test cases for Above program is given below

1 indicate door is open

0 indicate door is close

• All notation is given in simulation

•One led is there in circuit that indicate that Led shows how much voltage you are getting there or is our simulation or program is correct or not

•And due to not presence of camera module there I have replace that by potentiometer if we getting some voltage in potentiometer or we are getting in Led both are same and we can understand that If we do this in our camera circuit in hardware It will operate.
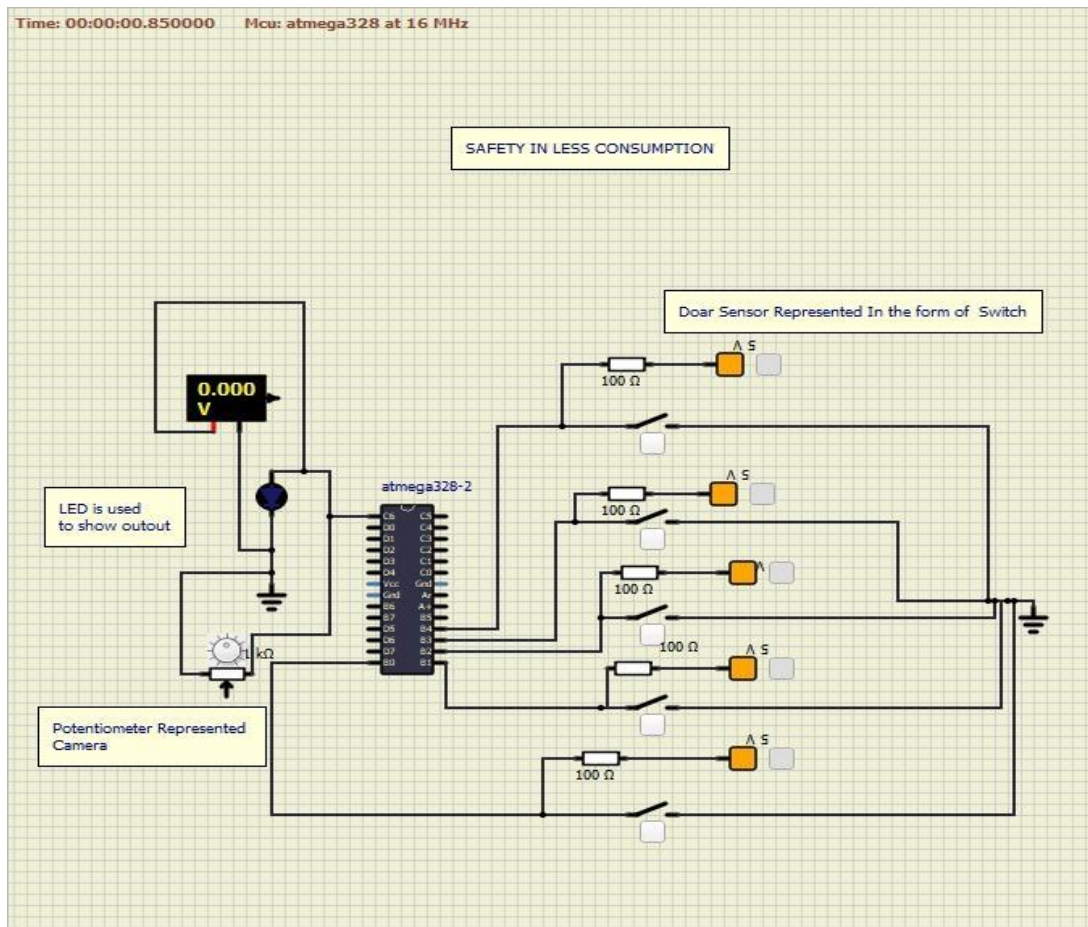
***Figure 1

You can also refer Test case folder for that

Conclusion:- This is how you can run this project and you can understand how you can reduce consumption.