

Elevator using Arduino

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INTRODUCTION



In this prototype, the Arduino will be responsible for activating the elevator motor driver, controlled according to the desired floor by the buttons. Each button installed in the structure corresponds to the desired floor, which when pressed, the motor will run until the destination is reached. In this review, you will understand the assembly of the didactic elevator, as well as know its mechanical structure, working

Materials Required

28byj-48 step motor

Uln2003 motor driver

Ultrasonic sensor

White led

Jumper wires

3-green buttons

3-red buttons

Arduino mega 2560

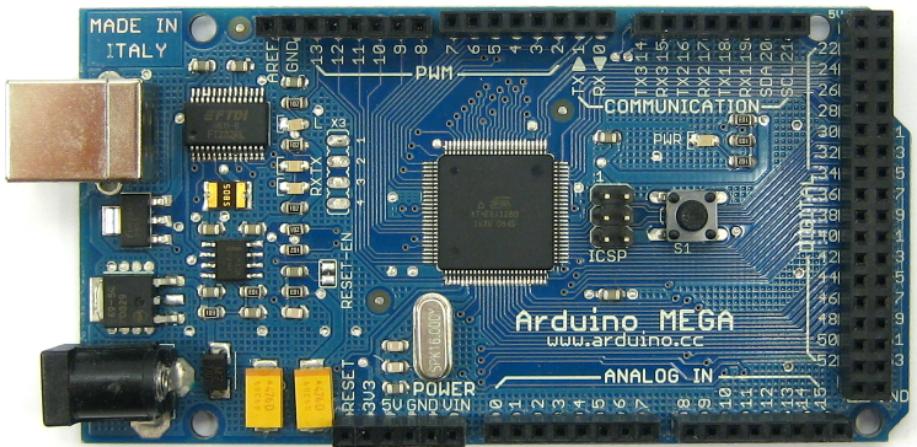
Arduino Uno r3

Hi-watt battery

Nylon thread



ARDUINO MEGA



The Arduino Mega 2560 is a microcontroller board based on the AT mega 2560. It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started



Plan of action

Making the chassis:

#We've made the chassis by using a carton

#First we've cut 5 carton pieces of length 60cm

#Next we've cut some pieces to cover the unnecessary openings of the elevator

Making the kart:

#kart is the box like structure inside the elevator that moves up and down

#We've started making the kart by just taking a small carton box and by cutting the unnecessary openings and drilling 2holes for the thread to go-in our kart is ready to be hanged

Attaching the motor with the chassis:

#The motor sits on top of the elevator.

#We attached a regular nylon thread of desired length to the shaft on the motor

#we attached the motor on the top by just taping it to the platform

Mounting the Arduino & motor driver :

#we are left with some space in the chassis for mounting our Arduino and other essentials like breadboard and motor driver

#We've just taped a small cardboard piece in the leftover space in the chassis and placed the Arduino on it

#we've taped the motor driver to the inner surface of chassis

Mounting of the sensors:

#We've used ultrasonic sensor to control the lights in the kart

#We've drilled 2 small holes into the kart and put the sensor in it

Connecting the ultrasonic sensor:

#We've used a seperate Arduino Uno to connect the ultrasonic sensor

#We've used an extra Arduino to reduce the cable management which may become a obstacle for the kart to move

#We've connected a led long leg to a 10 ohms resistor to the Arduino digital pin 3 and the short leg to GND

#We've connected Ultrasonic sensor as follows

VCC-5V

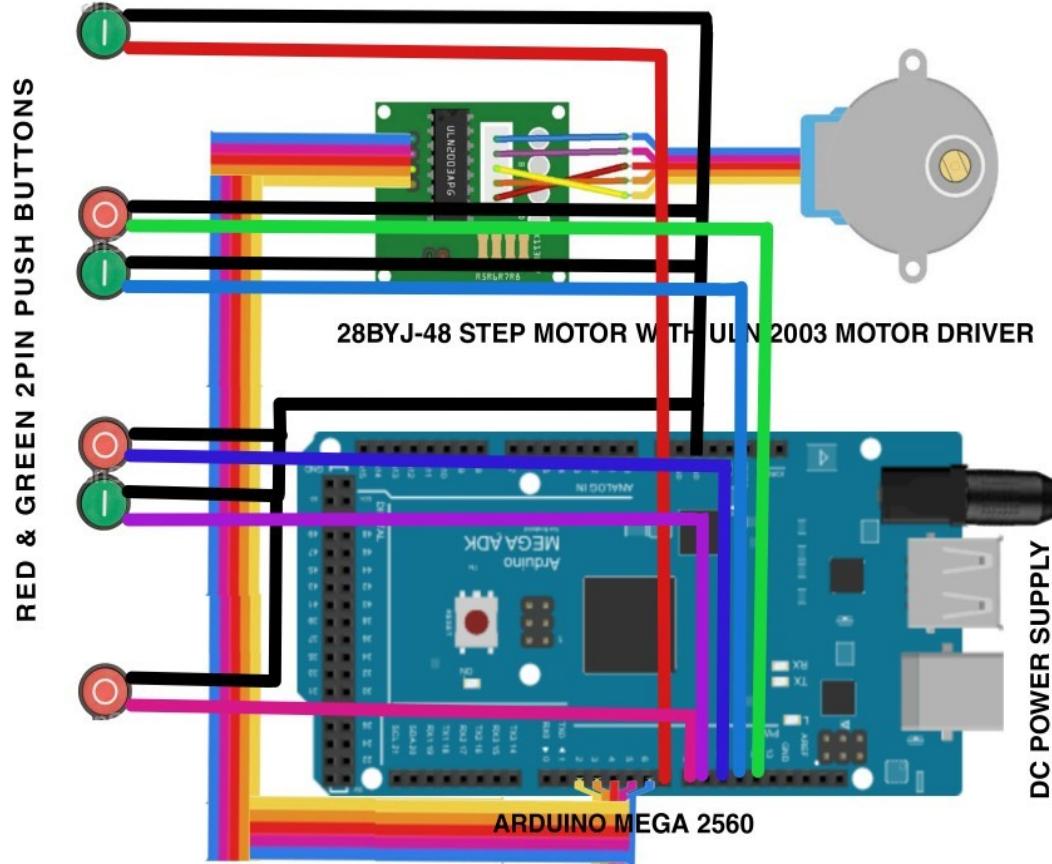
TRIG-DIGITAL PIN 6

ECHO-DIGITAL PIN 7

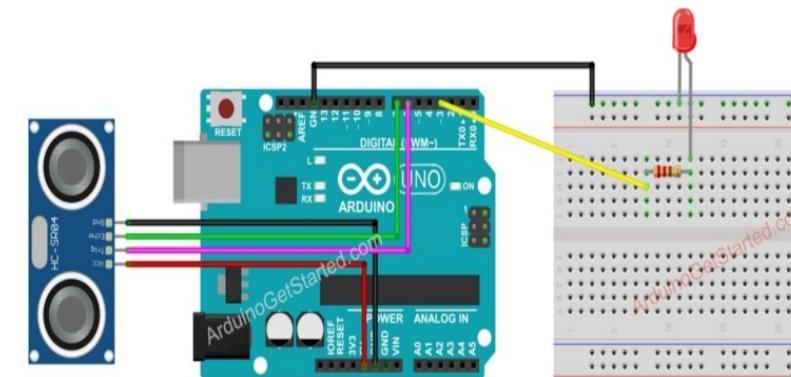
GND-GND

schematics

ELEVATOR SCHEMATIC



KART SCHEMATIC





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BUT HOW IS OUR
LIFT DIFFERENT
FROM OTHER LIFTS?

| feature

OUR PROTOTYPE HAS A FEATURE.....LIKE
WHEN A PERSON ENTERS IN TO THE KART
THE LIGHTS GET TURNED ON
AUTOMATICALLY AND WHEN HE LEAVES
THE LIGHTS GET TURNED OFF
AUTOMATICALLY....WHICH CAN SAVE/
CONSERVE THE ELECTRICITY



Thank you!

& Welcome to the Mifflin Tech Team!



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