



ECE 511

OFFICE BOT

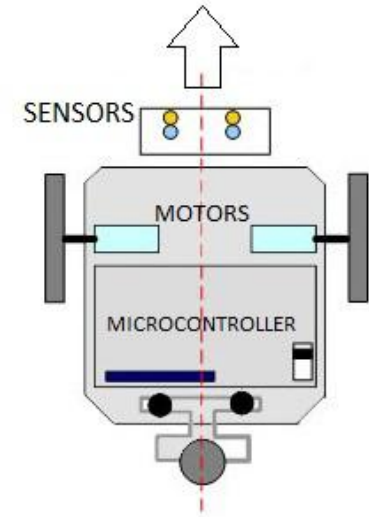
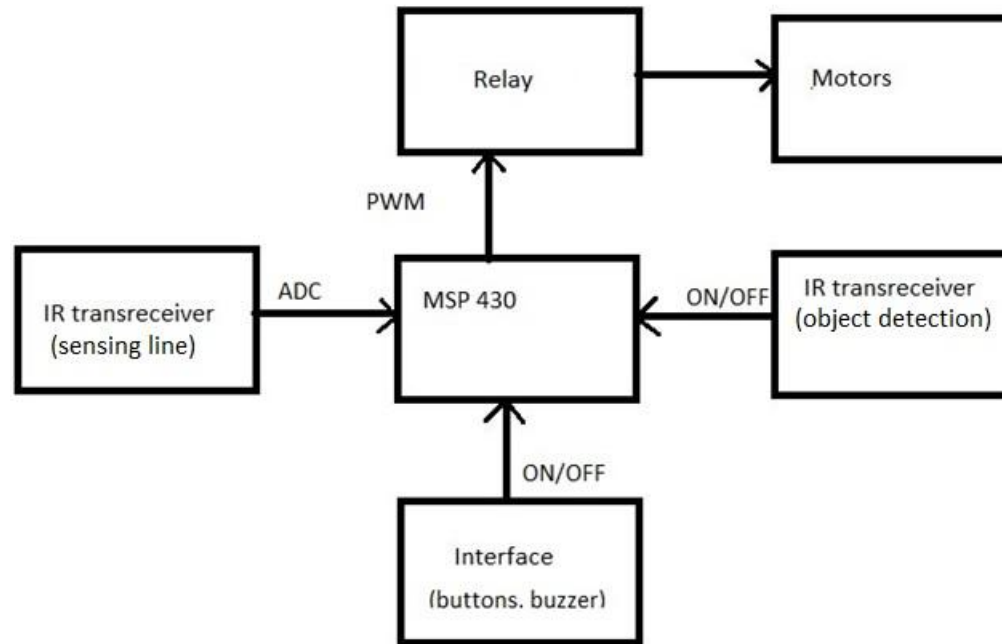
- ▶ AKRITI AGARWAL
- ▶ DEEPAK KARNIK
- ▶ HRUSHIKESH KULKARNI



Overview

- ▶ Line-follower based robot
- ▶ Used to send intra-office memos and small packages within a workplace
- ▶ Small construction

Overview





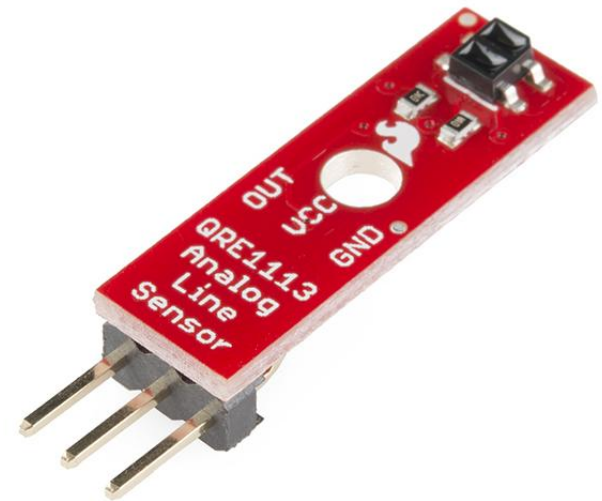
Components



- ▶ TI Launchpad with MSP430F5529
- ▶ DC motors
- ▶ QRE1113(analog/digital) - IR transceiver (short-range)
- ▶ TSAL6200 – IR transmitter (medium range)
- ▶ TSSP58P38 – IR sensor
- ▶ AQY212GH – solid state relay
- ▶ Chassis
- ▶ Buzzer
- ▶ LEDs, push buttons, wires etc

Components

- ▶ QRE1113
 - ▶ Short-range infrared transceiver module for detecting line
 - ▶ Interfaced via ADC channel of microcontroller
 - ▶ Status: Delivered, working with interface

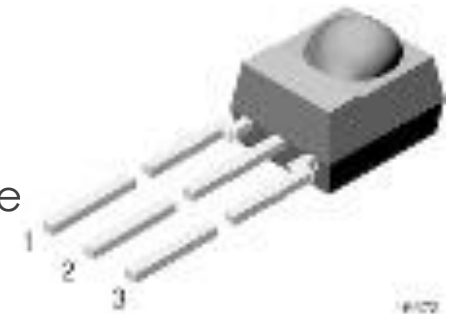


Components

- ▶ TSAL6200
 - ▶ IR transmitter (medium range ~2m)
 - ▶ Infrared transmitter for object detection
 - ▶ Status: Delivered

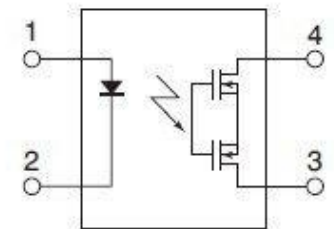


- ▶ TSSP58P38
 - ▶ IR sensor
 - ▶ Sensor for sensing reflected infrared light from obstacle
 - ▶ Status: Delivered, interfaced



Components

- ▶ AQY212GH
 - ▶ Solid-state relay
 - ▶ Provide PWM pulses to the motors
 - ▶ Isolate microcontroller and DC motors
 - ▶ Actuated upon black line detection
 - ▶ Interfaced as digital IO with microcontroller
 - ▶ Status: Delivered, interfaced



Components

- ▶ Piezo Buzzer
 - ▶ Used for object detection
 - ▶ Interfaced as digital IO
 - ▶ Status: Delivered, interfaced



Components

- ▶ Chassis
 - ▶ Overall body of the bot
 - ▶ Includes 6V DC motors
 - ▶ Motors interfaced with output of relay
 - ▶ Status: Delivered, Work pending regarding mounting PCB/controller modules





Overall Status



- ▶ Task division
 - ▶ Akriti
 - ▶ IR-transmitter and receiver for buzzer
 - ▶ Push buttons/LEDs interface
 - ▶ Deepak
 - ▶ Motor interface using PWM
 - ▶ Relays and electrical configuration
 - ▶ Hrushikesh
 - ▶ LDR/IR-sensors for line detection
 - ▶ ADC interface



Overall Status



- ▶ All components received
- ▶ Basic interfacing with relays, motor successful
- ▶ Building chassis for holding small package (Ex: USB flash drives)
- ▶ Decision regarding mounting-base pending (breadboard/general-purpose PCB)