אוניברסיטת בן-גוריון בנגב
Ben-Gurion University of the Negev

הוראות למפעיל - README

Components Used

Arduino board (UNO or similar)

LEDs (Yellow and Red)

Servo motor

Piezo buzzer

Ultrasonic distance sensor

LCD display with I2C interface

Installation and Setup

Connect the components as per the provided pin configurations in the code:

Yellow LED to pin 13

Red LED to pin 7

Piezo buzzer to pin 8

Ultrasonic distance sensor to pin 2 and pin 3

Servo motor to pin 12

LCD display using I2C communication (Address: 0x27, Rows: 16, Columns: 2)

Connect Arduino uno to the computer using USB.

Choose in "Tools", Board and from the list choose "Arduino uno".

Again choose "Tools", Port and choose the port on the "Arduino uno".

Upload the provided Arduino sketch to your Arduino board using the Arduino IDE.

Once uploaded, power up the Arduino board and ensure that all components are functioning correctly.

Operation

Upon startup, the system initializes and displays "Gumigam Refrigerator" on the LCD Screen.

In normal operation (no motion detected):

Yellow LED is turned on.

Servo motor do not rotates.

When motion is detected by the Ultrasonic distance sensor:

Servo motor starts moving.

Yellow LED turns off, and the Red LED turns on to indicate an emergency situation.

LCD screen displays "Warning!!!" to alert the user.

Piezo buzzer emits a sound for 5 seconds to draw attention to the detected motion

After 5 seconds of the emergency state, the system returns to normal operation, waiting for the next motion detection.