ECE558 Final Project
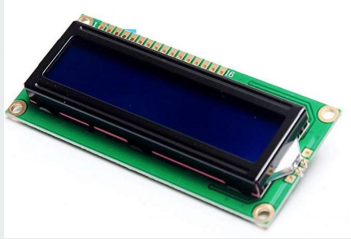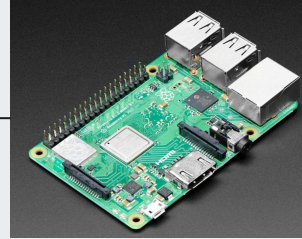
Distance Alert System

Zhe Lu
Ming Ma
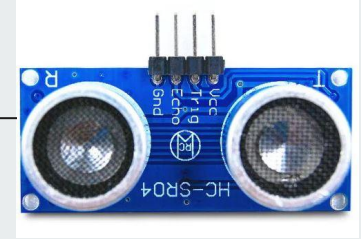
1602 LCD with HD44780

Raspberry Pi 3B

HC-SR04

Calculated Distance

Reflected Signal

Start Point

10cm < Distance < 15cm

Firebase Database

Send pictures
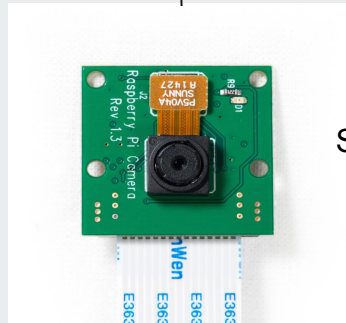
Send pictures

Send Enable Signal to take a picture

App

HC-SR04 Distance Sensor
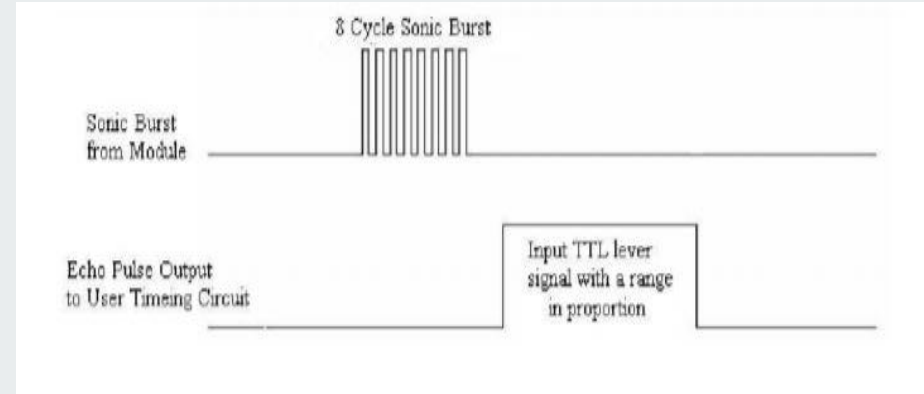
Distance(cm) = ((pulse width in ns)/(10^9)*340/2)*100

Echo-Input; Trig-Output

1602 LCD Display
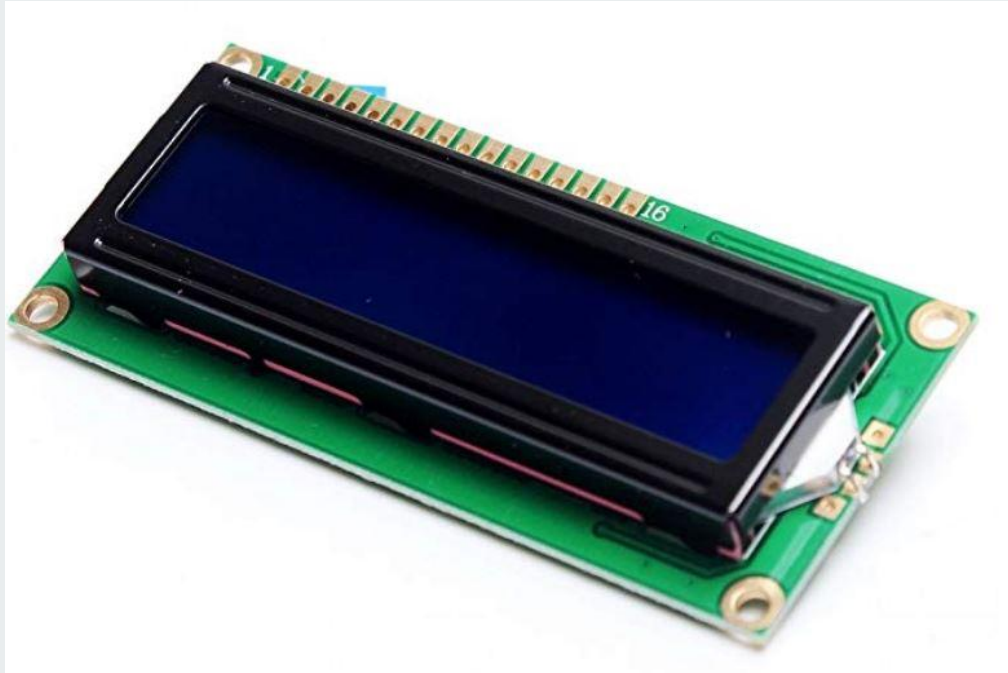
With build in HD44780 Controller

PI4J Library cannot statically link WirePi since April 2018.

`'com.nilhcem.androidthings:driver-lcd1602:0.0.3'`
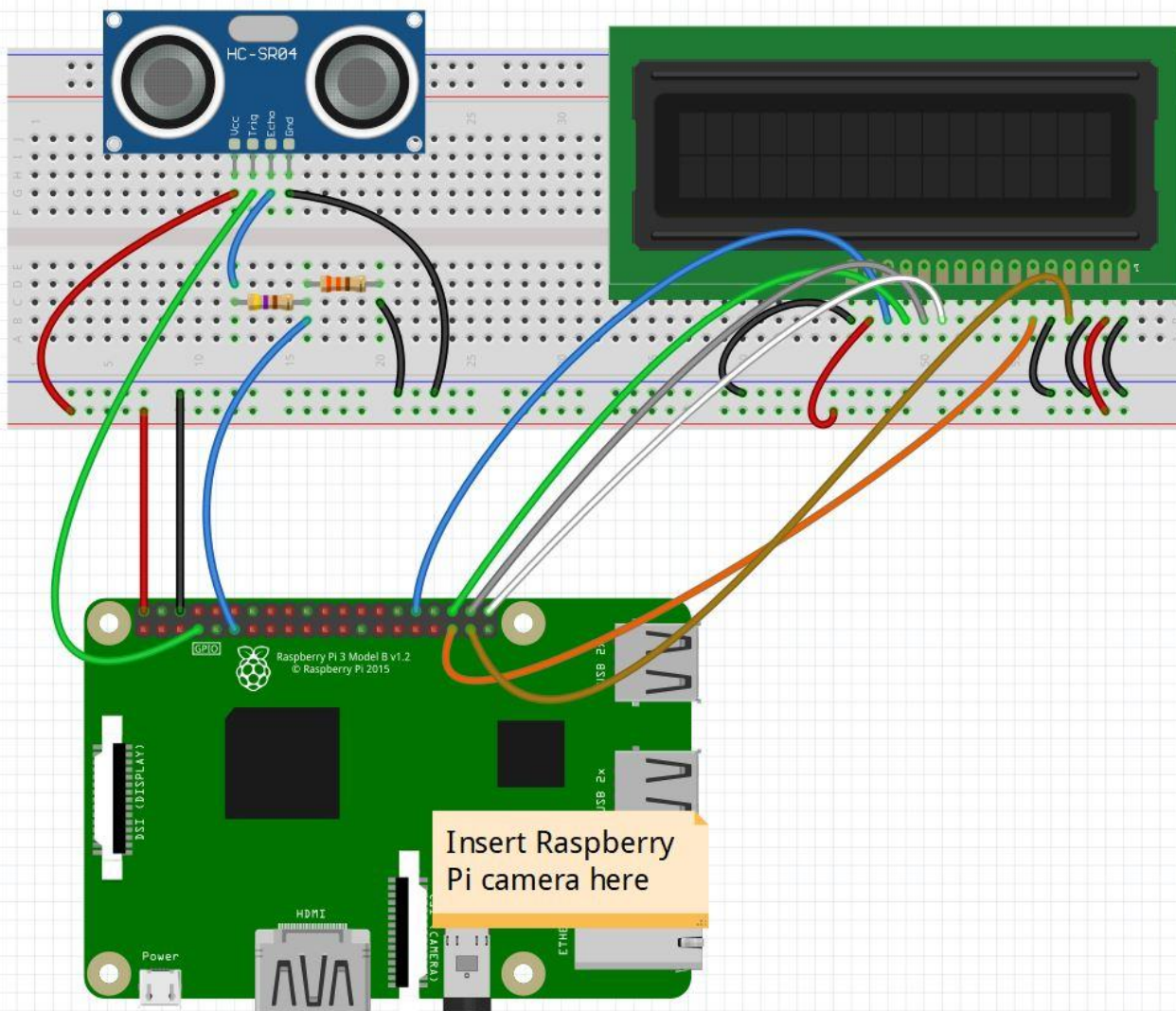
Row0: Distance
Row1: Current Time

Distance Sensor-RPI
VCC - 5V
Trig - GPIO4
Echo - GPIO17
Gnd - Ground

LCD-RPI
VSS - Ground
VDD - 5V
V0 - Ground
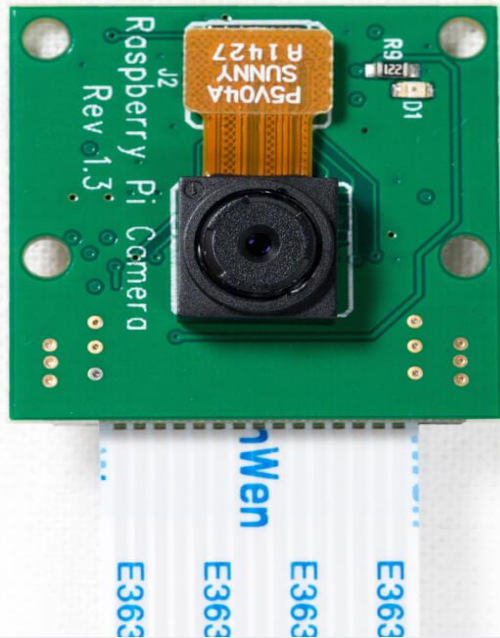RS - BCM26
R/W - Ground
E - BCM19
DB4 - BCM21
DB5 - BCM20
DB6 - BCM16
DB7 - BCM12
A - 5V
K - Ground

Insert Raspberry
Pi camera here

fritzing

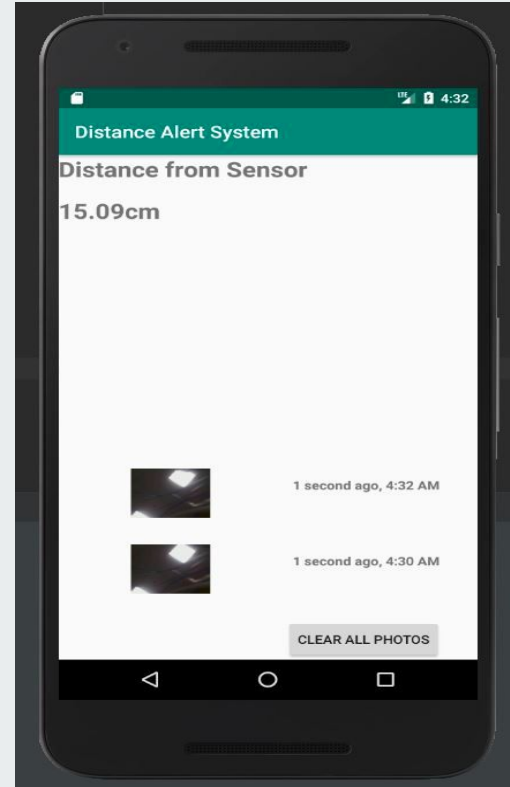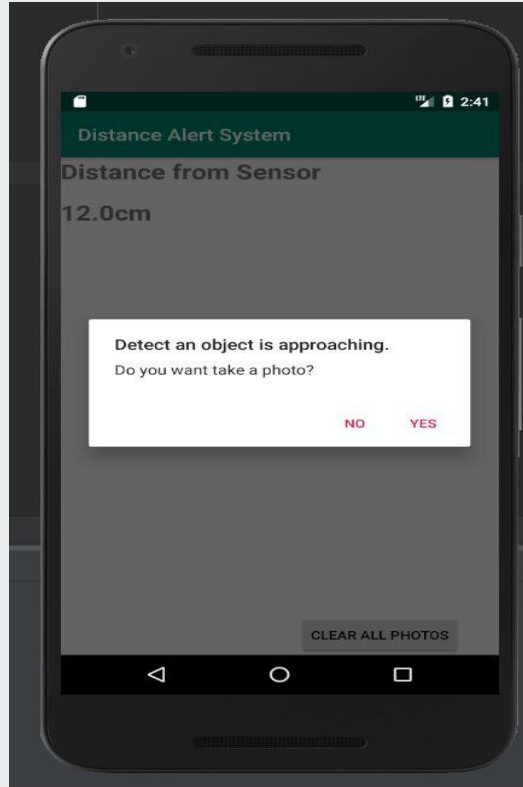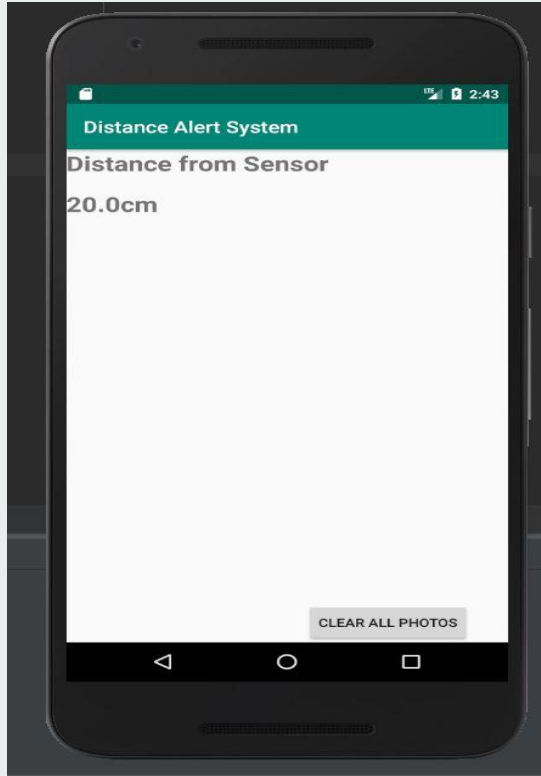# Raspberry Pi Camera

320 X 240 image pixel

─ -LT0m4cbAtnch-bkDtcd
    image: "https://firebasestorage.googleapis.com/v0/b/tes..."
    timestamp: 1544070653905

App

Demonstration

Thank You!