Engduino-Processing application documentation

DESCRIPTION: The Engduino application takes data through the sensors and shows it in real time using Processing IDE. The program consists of 3 applications which change when the button is pressed.

- **Temperature sensor app:** Display temperatures between (0 - 40) degrees Celsius in Processing IDE. On Engduino, for each 0.2 degree difference in temperature compared to the initial one, one more light is turned on. The lights are RED for increased temperature and BLUE for decreased temperature.
- **Light sensor app:** Displays light intensity between (0 – 1200) lux in Processing IDE. On Engduino the lights are turned on in L shape.
- **Acceleration sensor app:** Displays acceleration between (-1 – 1) in Processing IDE. On Engduino the lights are turned on in C shape.
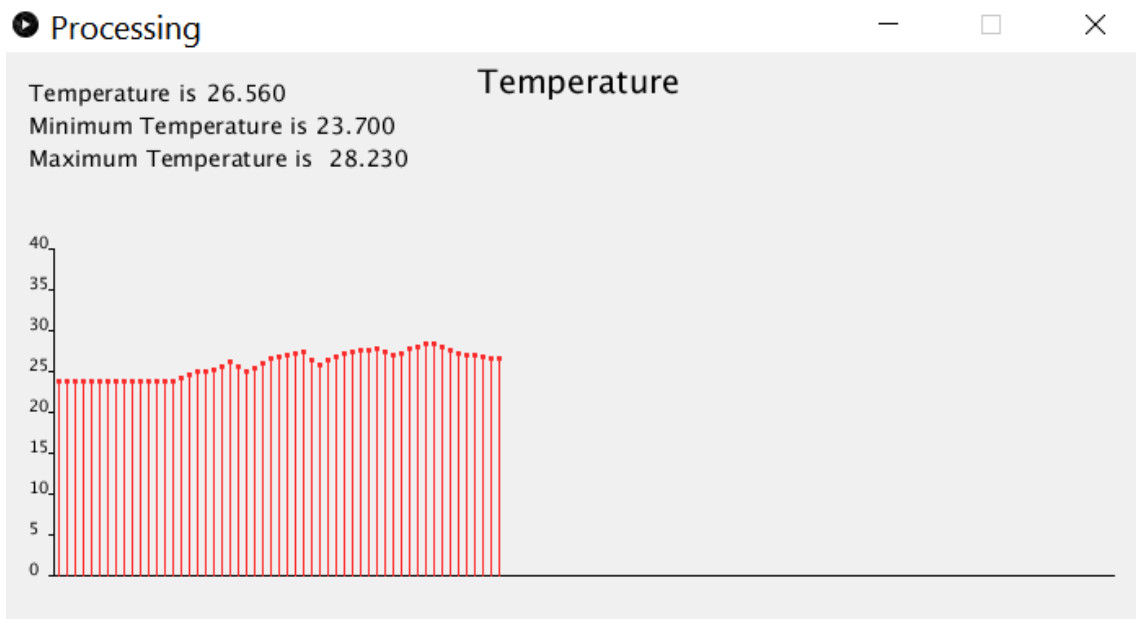
The data is transferred through the serial port of a Laptop/PC. Processing IDE is connected to the same serial port to receive information. Engduino transmits a marker for each application ('OFF ", "temp ", "light ", "acc "), so that Processing IDE knows when to change between applications. Switching between the three types of applications in Processing IDE depending on the first string received. Processing application interprets the markers and change the graph accordingly.
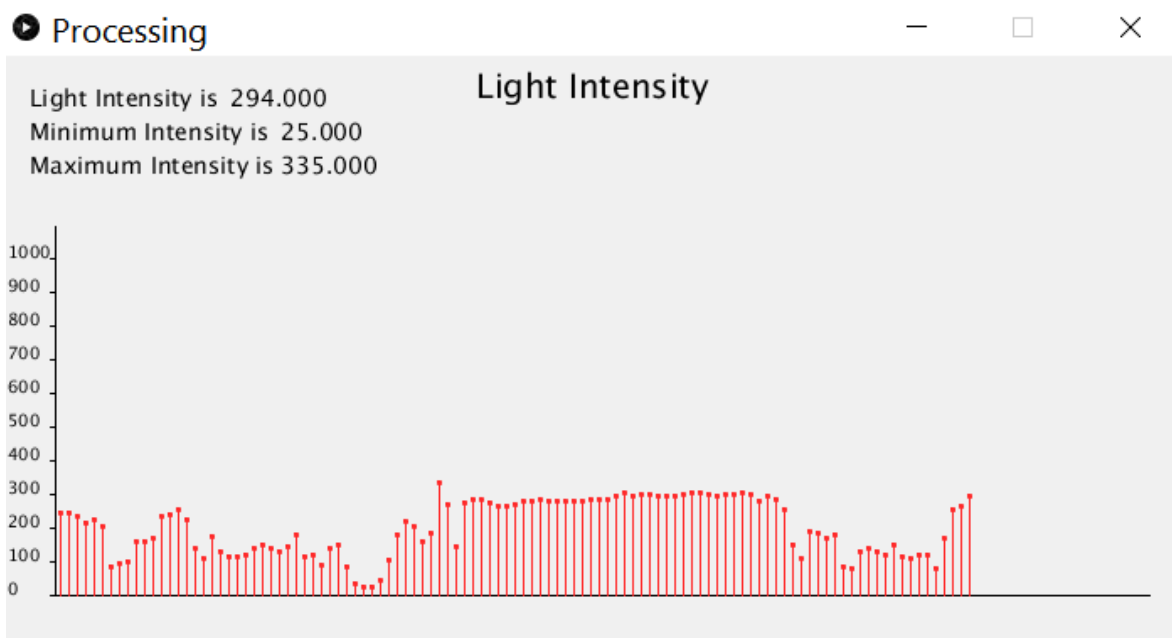
HOW TO SET-UP:

1. Open Arduino-Engduino IDE (can be downloaded from www.engduino.org)
2. In Engduino IDE open 'Engduino.ino' located in Engduino Processing application/ Engduino/ .
3. Upload the code to Engduino
4. Open Processing IDE (can be download from www.processing.org)
5. In the Processing IDE, open 'Processing.pde' located in Engduino Processing application /Processing/ .
6. Connect the Engduino to a serial port

7. Start Engduino
8. Run the code in Processing IDE
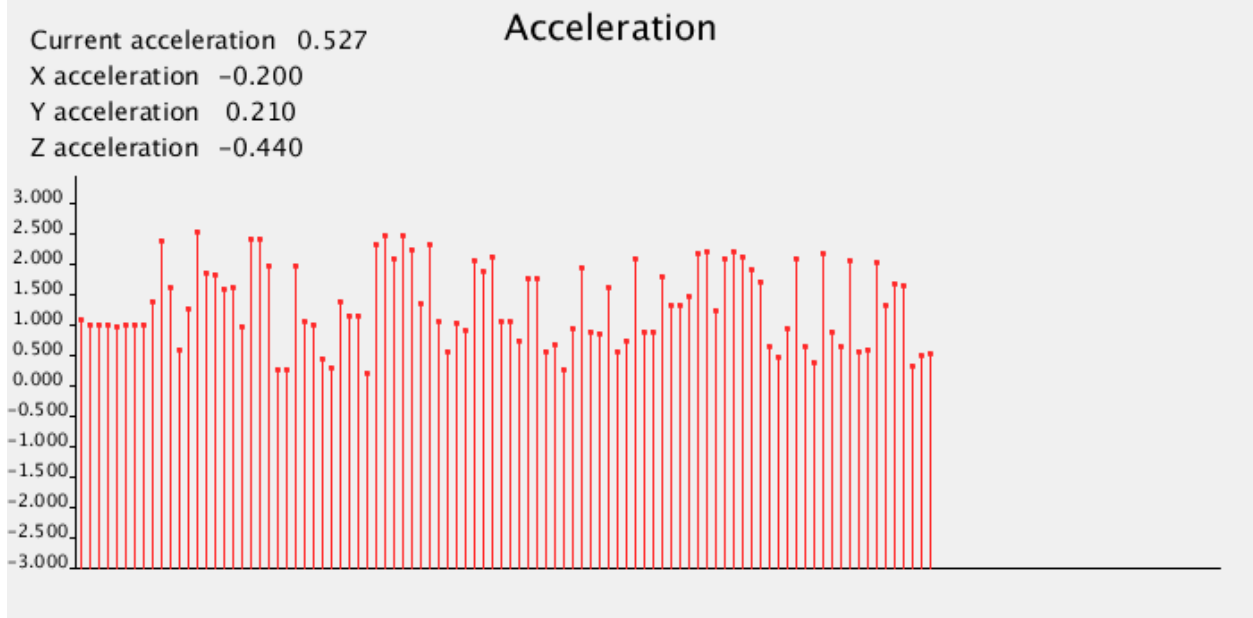9. Play with the application using the button like in the description.

Temperature app

Processing — □ ✕

Temperature is 26.560
Minimum Temperature is 23.700
Maximum Temperature is 28.230

Temperature

Light intensity app

Processing — □ ✕

Light Intensity is 294.000
Minimum Intensity is 25.000
Maximum Intensity is 335.000

Light Intensity

Acceleration app

Processing   —   □   ✕

Current acceleration 0.527
X acceleration −0.200
Y acceleration   0.210
Z acceleration −0.440

Acceleration

When Engduino is turned off

Processing   —   □   ✕

Engduino is turned off