Assignment 1

- The hardware implementation

  Components: Arduino board, breadboard, potentiometer, LEDs (green, yellow, red), resistors, wires.

  Connections:

  - I connected the breadboard to GND and 5V of Arduino.
  - I connected the potentiometer's middle pin to analog pin A0 on the Arduino; the outer pins of the potentiometer to power (5V) and ground (GND) respectively, of the breadboard.
  - I connected the LEDs to digital pins 2, 3, and 4 of the Arduino, with appropriate resistors to limit current (the resistors have 180 Ohms).

- The software implementation

  I declared variables for the pins of the LEDs and for potentiometer. After that, in the setup function, I set the pins' mode: A0 to input (for the potentiometer) and D2, D3, D4 (for the LEDs) as outputs. Also I set the serial monitor's baud rate to 9600.

  In the loop function I read the analog value of the potentiometer, I map it to the range 0-100, then in the serial monitor there will be displayed the potentiometer and mapped values.

  If the mapped value is below 33, the green LED will be high, if the value is between 34 and 66, the green and yellow LEDs will be high, and finally, if the value is larger than 66, the red LED will be high.

  At the end of the loop, I delayed the program by 100 ms.

The software implementation is found at the following link: https://www.tinkercad.com/things/jHUpFtu0YHq-assignment-1-rtcs/editel?returnTo=%2Fdashboard&sharecode=ZPljwWjMhivNxZwmtSFwTSXC7U_x59UjooYOJJjM2TA

- Personal information

  I mapped the analog value of the potentiometer to the range 0-100, so the program would be easier to understand. With the value 100, instead of 1023, the percentages are computed more simply (e.g. 33% of 100 is 33).