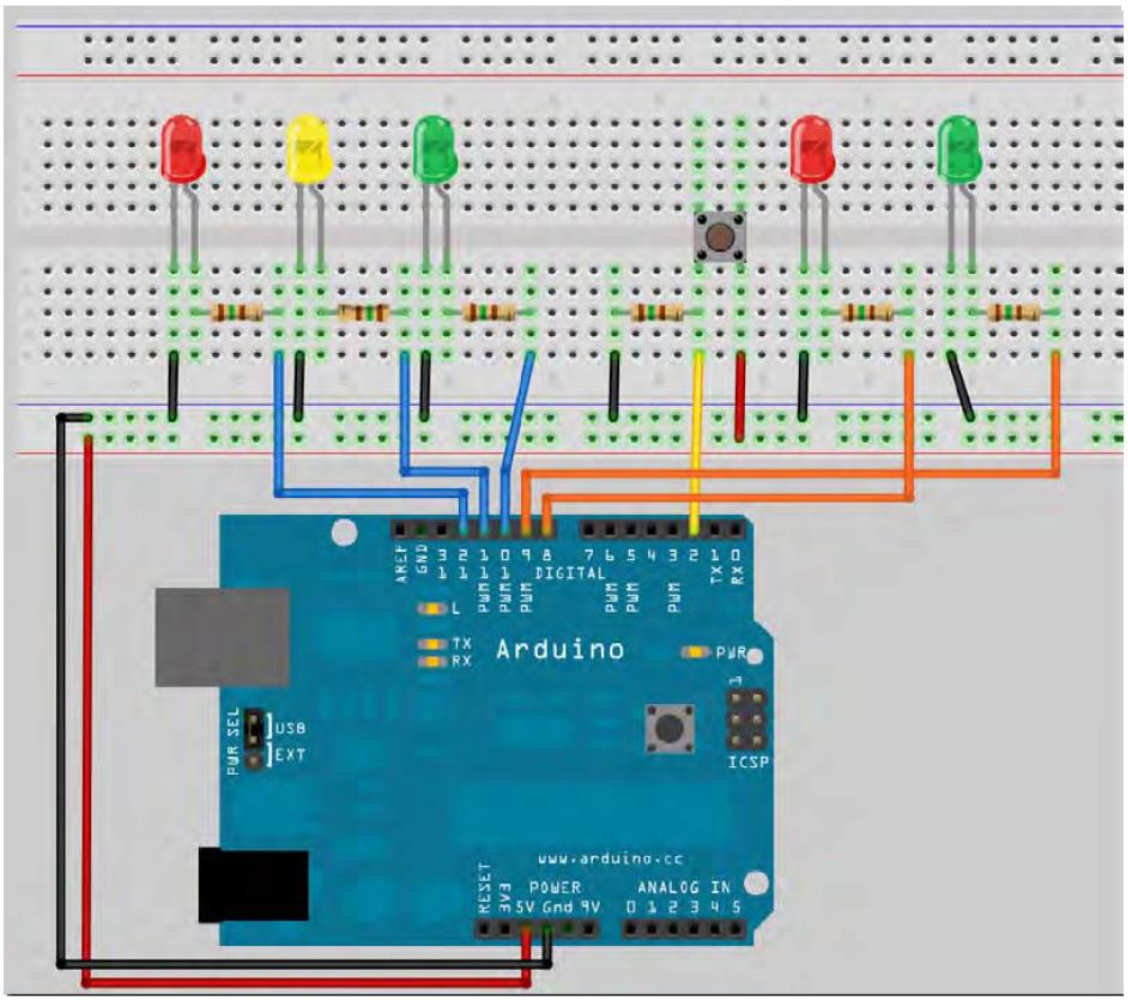
Projeto 4
Sinal de transito iterativo.
Monte o circuito com leds conforme desenho abaixo. Verifique se as ligações são corretas.
Neste projeto, cada vez que o botão é apertado, aluz vermelha para os automóveis acende e a verde para os pedestres acende, por 10 segundos..



Para o programa propomos:

```
// Project 4 – Interactive Traffic Lights
int carRed = 12; // assign the car lights
int carYellow = 11;
int carGreen = 10;
int pedRed = 9; // assign the pedestrian lights
int pedGreen = 8;
int button = 2; // button pin
int crossTime = 5000; // time alloyed to cross
unsigned long changeTime; // time since button pressed

void setup() {
        pinMode(carRed, OUTPUT);
        pinMode(carYellow, OUTPUT);
        pinMode(carGreen, OUTPUT);
```

```
        pinMode(pedRed, OUTPUT);
        pinMode(pedGreen, OUTPUT);
        pinMode(button, INPUT); // button on pin 2
        // turn on the green light
        digitalWrite(carGreen, HIGH);
        digitalWrite(pedRed, HIGH);
}

void loop() {
        int state = digitalRead(button);
        /* check if button is pressed and it is over 5 s since last button press*/
        if (state == HIGH && (millis() - changeTime) > 5000) {
                // Call the function to change the lights
                changeLights();
        }
}

void changeLights() {
        digitalWrite(carGreen, LOW); // green off
        digitalWrite(carYellow, HIGH); // yellow on
        delay(2000); // wait 2 seconds
        digitalWrite(carYellow, LOW); // yellow off
        digitalWrite(carRed, HIGH); // red on
        delay(1000); // wait 1 second till its safe
        digitalWrite(pedRed, LOW); // ped red off
        digitalWrite(pedGreen, HIGH); // ped green on
        delay(crossTime); // wait for preset time period
        // flash the ped green
        for (int x=0; x<10; x++) {
                digitalWrite(pedGreen, HIGH);
                delay(250);
                digitalWrite(pedGreen, LOW);
                delay(250);
                }
        // turn ped red on
        digitalWrite(pedRed, HIGH);
        delay(500);
        digitalWrite(carYellow, HIGH); // yellow on
        digitalWrite(carRed, LOW); // red off
        delay(1000);
        digitalWrite(carGreen, HIGH);
        digitalWrite(carYellow, LOW); // yellow off
        // record the time since last change of lights
        changeTime = millis();
        // then return to the main program loop
}
```

Analize o programa e estude os novos commandos**.**