LABORATÓRIO DE HARDWARE

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Projeto: [ ] SEMÁFORO [X] SEMÁFORO 3 TEMPOS [ ] PESAGEM VEÍCULOS

Algoritmo

1. Defina as variáveis led_red, led_yellow e led_green como 0, 1 e 2, respectivamente.

2. Configure os LEDs conectados às portas 0, 1 e 2 como saídas.

3. Repita o ciclo abaixo:

    3.1 Ligue o LED verde.

    3.2 Aguarde 3 segundos.

    3.3 Desligue o LED verde e ligue o LED amarelo.

    3.4 Aguarde 3 segundos.

    3.5 Desligue o LED amarelo e ligue o LED vermelho.

    3.6 Aguarde 3 segundos.

Programa Arduino UNO (sketch)

```
  int led_red_A = 0;      // led vermelho conectado a porta 0 no Arduino
int led_yellow_A = 1; // led amarelo conectado a porta 1 no Arduino
int led_green_A = 2; // led verde conectado a porta 2 no Arduino
int led_red_B = 3;
int led_yellow_B = 4;
int led_green_B = 5;
int led_red_C = 6;
int led_yellow_C = 7;
int led_green_C = 8;
```

```
int led_red_D = 9;
int led_yellow_D = 10;
int led_green_D = 11;

void setup() {
  // inicia os leds como funções de saída
  pinMode(led_red_A, OUTPUT);
  pinMode(led_yellow_A, OUTPUT);
  pinMode(led_green_A, OUTPUT);
  pinMode(led_red_B, OUTPUT);
  pinMode(led_yellow_B, OUTPUT);
  pinMode(led_green_B, OUTPUT);
  pinMode(led_red_C, OUTPUT);
  pinMode(led_yellow_C, OUTPUT);
  pinMode(led_green_C, OUTPUT);
  pinMode(led_red_D, OUTPUT);
  pinMode(led_yellow_D, OUTPUT);
  pinMode(led_green_D, OUTPUT);
}

void loop() {
  // INICIO
  digitalWrite(led_red_A, LOW);
  digitalWrite(led_yellow_A, LOW);
  digitalWrite(led_green_A, HIGH);

  digitalWrite(led_red_B, HIGH);
  digitalWrite(led_yellow_B, LOW);
  digitalWrite(led_green_B, LOW);

  digitalWrite(led_red_C, HIGH);
  digitalWrite(led_yellow_C, LOW);
  digitalWrite(led_green_C, LOW);

  digitalWrite(led_red_D, HIGH);
  digitalWrite(led_yellow_D, LOW);
  digitalWrite(led_green_D, LOW);

  delay(3000);

  // FECHA A ABRE B E D
  digitalWrite(led_red_A, LOW);
  digitalWrite(led_yellow_A, HIGH);
  digitalWrite(led_green_A, LOW);

  digitalWrite(led_red_B, LOW);
```

```
digitalWrite(led_yellow_B, LOW);
digitalWrite(led_green_B, HIGH);

digitalWrite(led_red_C, LOW);
digitalWrite(led_yellow_C, LOW);
digitalWrite(led_green_C, LOW);

digitalWrite(led_red_D, LOW);
digitalWrite(led_yellow_D, HIGH);
digitalWrite(led_green_D, LOW);

delay(3000);

// FECHA D ABRE C
digitalWrite(led_red_A, HIGH);
digitalWrite(led_yellow_A, LOW);
digitalWrite(led_green_A, LOW);

digitalWrite(led_red_B, HIGH);
digitalWrite(led_yellow_B, LOW);
digitalWrite(led_green_B, LOW);

digitalWrite(led_red_C, LOW);
digitalWrite(led_yellow_C, HIGH);
digitalWrite(led_green_C, LOW);

digitalWrite(led_red_D, LOW);
digitalWrite(led_yellow_D, HIGH);
digitalWrite(led_green_D, LOW);

delay(3000);

// FECHA B E C
digitalWrite(led_red_A, HIGH);
digitalWrite(led_yellow_A, LOW);
digitalWrite(led_green_A, LOW);

digitalWrite(led_red_B, LOW);
digitalWrite(led_yellow_B, LOW);
digitalWrite(led_green_B, LOW);

digitalWrite(led_red_C, LOW);
digitalWrite(led_yellow_C, LOW);
digitalWrite(led_green_C, HIGH);

digitalWrite(led_red_D, LOW);
```

```
    digitalWrite(led_yellow_D, HIGH);
    digitalWrite(led_green_D, LOW);

    delay(3000);
}
```

Captura da tela do simulador com o circuito em funcionamento