Kreirati program za 8051 mikrokontroler tako da generiše niz impulsa na P1.0 pinu. Uraditi ovo koristeći tajmer 0 u režimu 0.

1. Način

#include <reg51.h> // Include 8051 header file

sbit Test = 0x90; // P1.0

// Function to generate a 1ms delay using Timer 0 in Mode 0

void Delay() {

 TMOD &= 0x00; // Set Timer 0 in Mode 0 (16-bit timer)

 TL0 = 0x17; // Load low byte with initial value (adjust as needed)

 TH0 = 0x1C; // Load high byte with initial value (adjust as needed)

 TF0 = 0; // Clear Timer 0 overflow flag

 TR0 = 1; // Start Timer 0

 while (!TF0); // Wait until Timer 0 overflows

 TR0 = 0; // Stop Timer 0

 TF0 = 0; // Clear Timer 0 overflow flag

}

void main() {

 while (1) { // Infinite loop

 // Generate impulse (1ms ON)

 Test = 1; // Set P1.0 high

 Delay(); // Wait for 1ms

 // Pause (1ms OFF)

 Test = 0; // Set P1.0 low

 Delay(); // Wait for 1ms

 }

}

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1. Način

#include <8051.h>

// Define the delay value for 1 ms (adjust as needed)

#define DELAY\_MS 1

// Function to generate a 1 ms delay using Timer 0

void delay\_ms() {

 // Calculate the timer value for 1 ms

 unsigned int timer\_value = 65536 - (DELAY\_MS \* 1000 / 1.085);

 // Configure Timer 0 in Mode 1 (16-bit timer)

 TMOD = 0x01; // Set Timer 0 to Mode 1

 TH0 = timer\_value >> 8; // Load high byte

 TL0 = timer\_value & 0xFF; // Load low byte

 // Start Timer 0

 TR0 = 1;

 // Wait until Timer 0 overflows (TF0 flag set)

 while (!TF0);

 // Stop Timer 0

 TR0 = 0;

 // Clear the overflow flag

 TF0 = 0;

}

void main() {

 // Configure P1.0 as an output pin

 P1 = 0x00; // Initialize P1

 P1\_0 = 0; // Set P1.0 low initially

 while (1) {

 // Generate an impulse (high level) on P1.0

 P1\_0 = 1;

 delay\_ms(); // 1 ms delay

 // Pause (low level) on P1.0

 P1\_0 = 0;

 delay\_ms(); // 1 ms delay

 }

}