

# LAB3

## #Debugging

Registers

Register	Value
R0	0x00000000
R1	0x00000000
R2	0x00000000
R3	0x00000000
R4	0x00000000
R5	0x00000000
R6	0x00000000
R7	0x00000000
R8	0x00000000
R9	0x00000000
R10	0x00000000
R11	0x00000000
R12	0x00000000
R13 (SP)	0x00000000
R14 (LR)	0x00000000
R15 (PC)	0x00000000
xPSR	0x00000000

Disassembly

```
48: Delay_count(200000);
49: LDR r0,[pc,#40] ; 0x0000000C
50: BLW 0x00000000 Delay_count
51: TOG_BIT(GPIO_PORTF_DATA_R, 3);
52: ...
```

Port F Hardware

Port F Registers

DATA	PUR	LOCK
0x19	0x00	0x01

DIR	PDR	CR
0x08	0x00	0x1E

DEN	RCGC2	Clock enabled
0x08	0x00000020	

Grading Controls

Number from	Grade	Score
		0

Command

Running with Code Size Limit: 32K

Load "...\\Karem\_Lab3.axf"

Call Stack - Locals

Name	Location/Value	Type
main	0x0000001C	int f0

Registers

Register	Value
R0	0x00000000
R1	0x00000000
R2	0x00000000
R3	0x00000000
R4	0x00000000
R5	0x00000000
R6	0x00000000
R7	0x00000000
R8	0x00000000
R9	0x00000000
R10	0x00000000
R11	0x00000000
R12	0x00000000
R13 (SP)	0x00000000
R14 (LR)	0x00000000
R15 (PC)	0x00000000
xPSR	0x00000000

Disassembly

```
50: Delay_count(200000);
51: ...
52: return 0;
53: ...
```

Port F Hardware

Port F Registers

DATA	PUR	LOCK
0x11	0x00	0x01

DIR	PDR	CR
0x08	0x00	0x1E

DEN	RCGC2	Clock enabled
0x08	0x00000020	

Grading Controls

Number from	Grade	Score
		0

Command

Running with Code Size Limit: 32K

Load "...\\Karem\_Lab3.axf"

Call Stack - Locals

Name	Location/Value	Type
main	0x0000001C	int f0

# #Logic Analyzer to display the wave form.

The screenshot displays the Keil uVision IDE interface for a project named "uVision [Non-Commercial Use License]". The main window shows a logic analyzer waveform for a signal named "PORTF". The waveform is a square wave with a period of approximately 100 ns, ranging from 0 to 1. The time scale is set to 0.5 s. The signal is connected to a hardware schematic of a TM4C123 microcontroller. The schematic shows the microcontroller connected to a 16 MHz clock, two push buttons (SW1, SW2), and two LEDs (LED Green, LED Red). The SW1 button is connected to PF4, and the SW2 button is connected to PF0. The LED Green is connected to PF1, and the LED Red is connected to PF2. The hardware schematic is titled "Port F Hardware".

The "Registers" window on the left shows the register values for the microcontroller. The "Command" window at the bottom shows the command "BS \\Karem\_Lab3\\main.c\\50 LA (PORTF & 0x0F) >> 3".

The "Port F Registers" window shows the register values for the microcontroller. The "Grading Controls" window shows the score for the project.

The "Simulation" window at the bottom shows the simulation time: 99.57550000 sec, L:60 C:23, CAP: NUM SCRL: OVR: R/W.