

## **9. PROGRAMS ON DAC INTERFACING**

**AIM:** Develop necessary interfacing circuit to interface DAC with 8051 and program to generate different stair case pattern.

**TOOLS REQUIRED:** PC, Keil  $\mu$ vision5

### **PROCEDURE:**

1. Turn on the computer, create a folder on D drive saved with Register Number.
2. Open Keil uVision5 in desktop, or windows start menu → all programs → open Keil uVision5.

### **Creating Project:**

3. Go to project → click on new uVision project → create a new folder saved with experiment number within the already existed register number folder in D drive mentioned in step 1, → enter the project name → click on save.
4. Select the device for target → In devices → Enter P89C51RD2XX in Search toolbar → click on ok → select **No** for dialog box message “Copy STARTUP.A51 to project folder and add files to project”.

(or)

Choose NXP → to select the device P89C51RD2xx → click on ok → select **No** for Copy STARTUP.A51 to the project folder.

### **Creating Coding File:**

5. Go to file → click on new → go to save (choose the path to save the file, It is saved within the name of experiment number folder mentioned in step 3) → enter a filename with extension **.asm** → save the file.

### **Linking the Coding File to Project:**

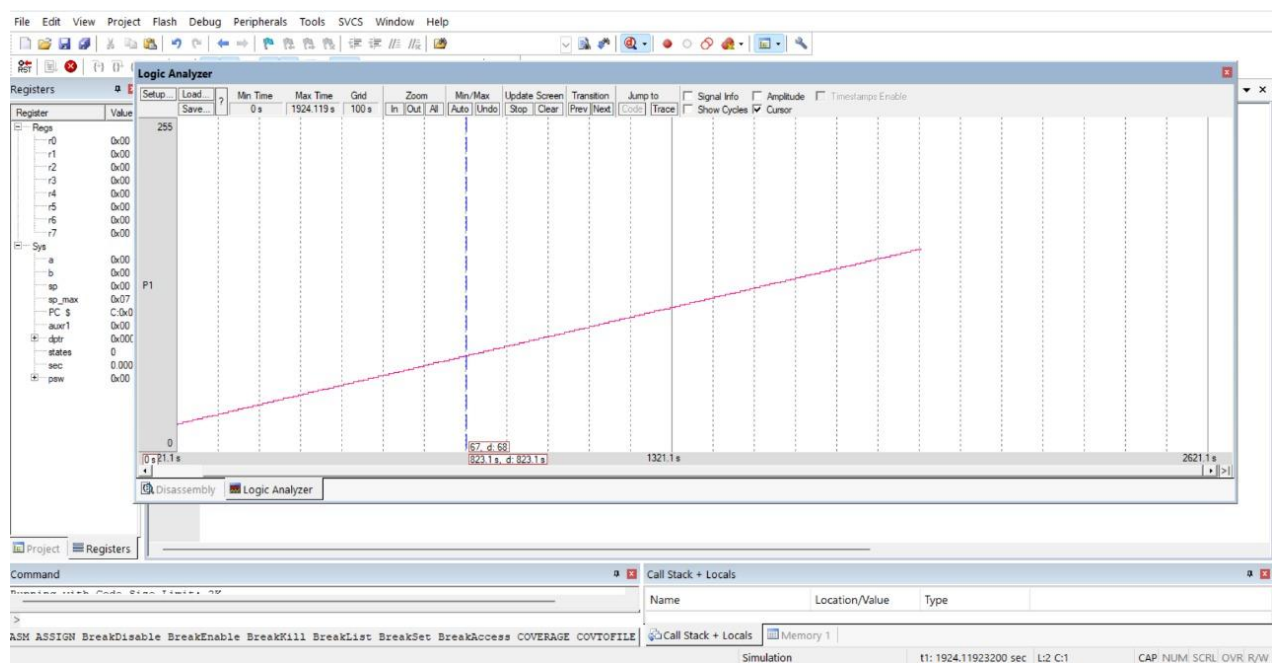
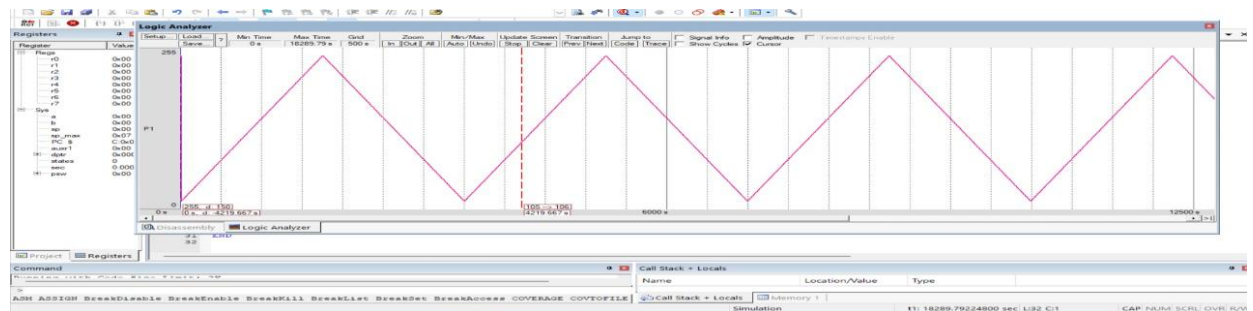
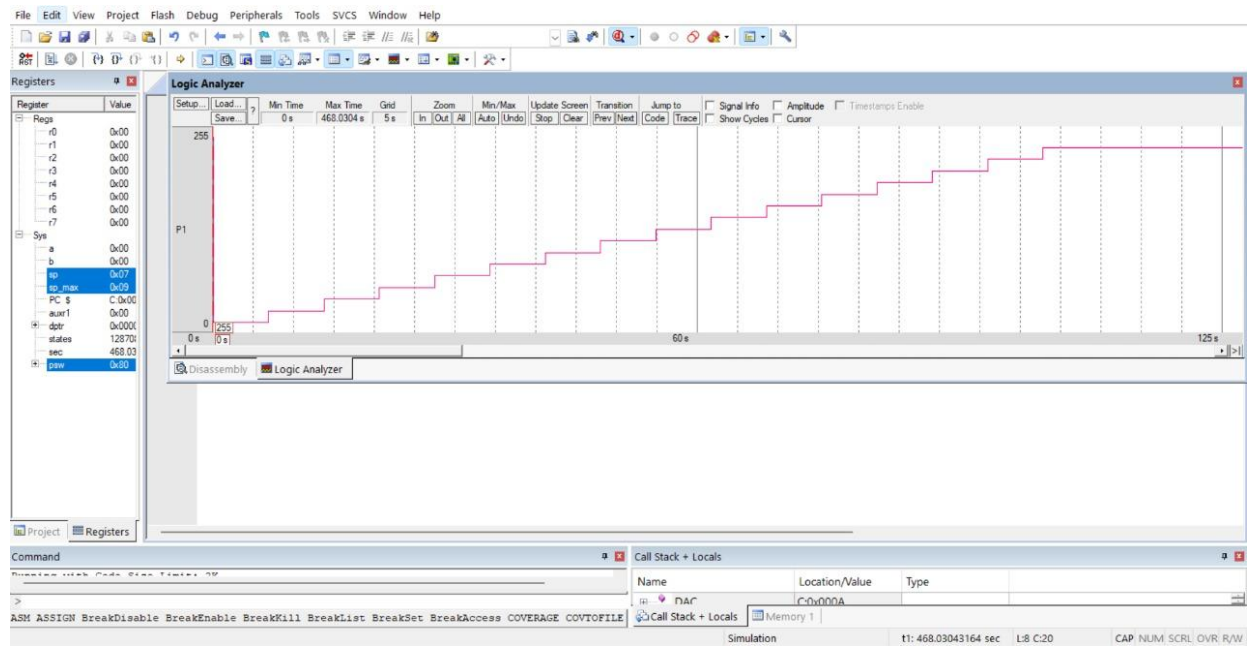
6. Right-click on Source group1 in project bar → Add existing files to source group1 → choose the experiment number folder path and select all files in the folder → select .asm code file → click on add → click on close.
7. Write the assembly language program in .asm code file and save it.

### **Executing the Code File:**

8. Right-click on .asm code file → Click on Build target to check the errors (i.e 0-Errors,0-Warning)
9. Go to debug → Click on Start/Stop Debug Session → click on ok for dialog box message “running code size limit 2K” → and Click on RUN in debug label
10. Observe the output in Register windows, Memory windows, Serial window.

## OUTPUT:

View → Analysis Windows → Logic Analyzer





**PROGRAM:**

ADDRESS	OPCODES	LABELS	MNEMONICS	OPERANDS
0000	7400		MOV	A, #00H
0002	F590	BACK:	MOV	P1, A
0004	2410		ADD	A, #10H
0006	110C		ACALL	DELAY
0008	70F8		JNZ	BACK
000A	80FE	HERE:	SJMP	HERE
000C	7890	DELAY:	MOV	R0, #90H
000E	79FF	WAIT1:	MOV	R1, #0FFH
0010	7AFF	WAIT2:	MOV	R2, #0FFH
0012	DAFE	WAIT3:	DJNZ	R2, WAIT3
0014	D9FA		DJNZ	R1, WAIT2
0016	D8F6		DJNZ	R0, WAIT1
0018	22		RET	
			END	

**RESULT:** The stair case is generated successfully in P1 port.

