

GENERATION OF TRIANGULAR WAVE USING PROTEUS

NAME: S.G.DEVSACHIN

REG NO: 192111088

COURSE CODE: ECA1487, Embedded Systems for IOT Applications

PROGRAM:

ORG 00H ; Start of the program

; Initialize

MOV P1, #00H ; Clear Port 1 (connected to DAC0808)

MOV A, #00H ; Initialize accumulator to 0 (starting value)

UPWARD:

INC A ; Increment the value in the accumulator (rising edge of triangle)

MOV P1, A ; Send the incremented value to Port 1 (connected to DAC)

ACALL DELAY ; Call delay for waveform frequency control

CJNE A, #0FFH, UPWARD ; Continue incrementing until the maximum value (0xFF)

DOWNWARD:

DEC A ; Decrement the value in the accumulator (falling edge of triangle)

MOV P1, A ; Send the decremented value to Port 1

ACALL DELAY ; Call delay for waveform frequency control

CJNE A, #00H, DOWNWARD ; Continue decrementing until it reaches 0

SJMP UPWARD ; Repeat the process indefinitely to generate a continuous waveform

; Delay Subroutine

DELAY:

MOV R1, #255 ; Outer loop for delay

DELAY_LOOP1:

MOV R2, #255 ; Inner loop for delay

DELAY_LOOP2:

DJNZ R2, DELAY_LOOP2 ; Decrement inner loop

DJNZ R1, DELAY_LOOP1 ; Decrement outer loop

RET ; Return from delay

END ; End of the program

OUTPUT:

