# BCD TO ASCII CONVERSION USING 8051

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#### AIM:

To write an assembly language program to convert a given BCD value to its corresponding ASCII value using an 8051 microcontroller.

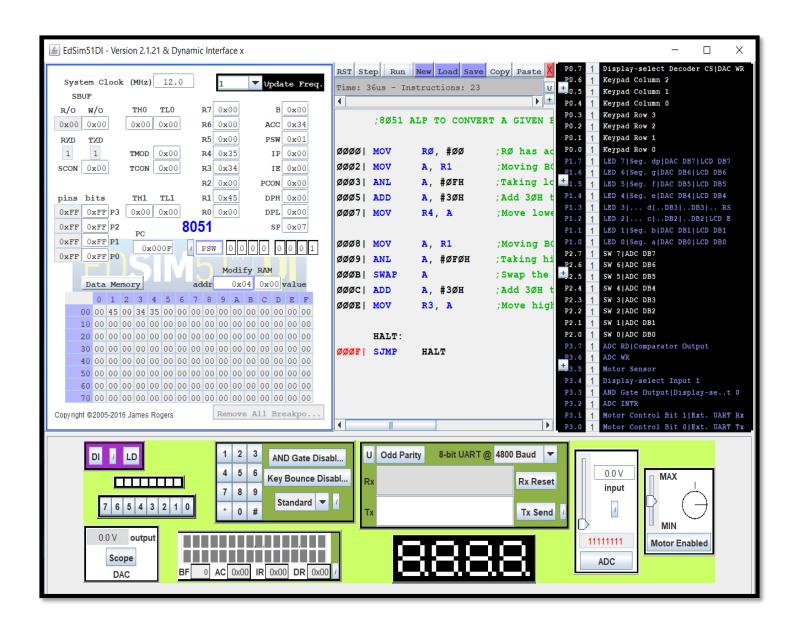
### PROGRAM – 1: BCD TO ASCII CONVERSION:

#### **ALGORITHM:**

- 1. Begin.
- 2. Move the value in R1 to A.
- 3. Get the lower byte at A by performing logical AND over A & 0F.
- 4. Add 30h to A.
- 5. Move A to R4.
- 6. Move the value in R1 to A.
- 7. Get the higher byte at A by performing logical AND over A & F0.
- 8. Swap the lower and higher nibble in A.
- 9. Add 30h to A.
- 10. Move A to R3.
- 11. End.

	PROGRAM	COMMENTS
MOV	R0, #00	R0 has address of 0x00
MOV	A, R1	Moving BCD value to A
ANL	A, #0FH	Taking lower byte value of A by doing (byte & 0F)
ADD	A, #30H	Add 30H to lower byte to convert it to ASCII
MOV	R4, A	Move lower ASCII byte to R4 from A
MOV	A, R1	Moving BCD value again to A
ANL	A, #0F0H	Taking higher byte value of A by doing (byte & F0)
SWAP	A	Swap the lower and higher bytes in A
ADD	A, #30H	Add 30H to higher byte to convert it to ASCII
MOV	R3, A	Move higher ASCII byte to R3 from A
HALT:		
SJMP	HALT	Halt the program with a loop.

#### **SAMPLE I/O SNAPSHOT:**



## **RESULT:**

An assembly level program was written to convert a given BCD value to its corresponding ASCII value using an 8051 microcontroller and the output was verified.