

# BCD to ASCII conversion using 8051

**Expt No:** 14

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## **Aim:**

To convert a number from BCD to ASCII using **8051 microcontroller**.

## **Algorithm:**

- Move hex value 00 to register 0.
- Move the value of register 1 to A.
- Mask upper bits of A using ANL A, 0FH.
- Add hex value 30 using ADD A, 30H to convert it to ASCII.
- Store converted lower bits in Register 5.
- Move value of register 1 to A.
- Mask lower bits of A using ANL A, 0F0H.
- Swap upper and lower nibbles using SWAP A.
- Add hex value 30 using ADD A, 30H to convert it to ASCII.
- Store converted upper bits in Register 4.

## Program:

Program	Comments
mov r0, #00	Move hex value 00 to Register 0
mov a, r1	Move value in Register 1 to A
anl a, #0FH	Mask upper bits
add a, #30H	Add hex value 30 to convert to ASCII
mov r5, a	Store converted lower bits into Register 5
mov a, r1	Move value in Register 1 to A
anl a, #0F0H	Mask lower bits
swap a	Swap upper and lower nibbles of A
add a, #30H	Add hex value 30 to convert to ASCII
mov r4, a	Store converted upper bits into Register 4
here: sjmp here	Halt

## Input and Output:

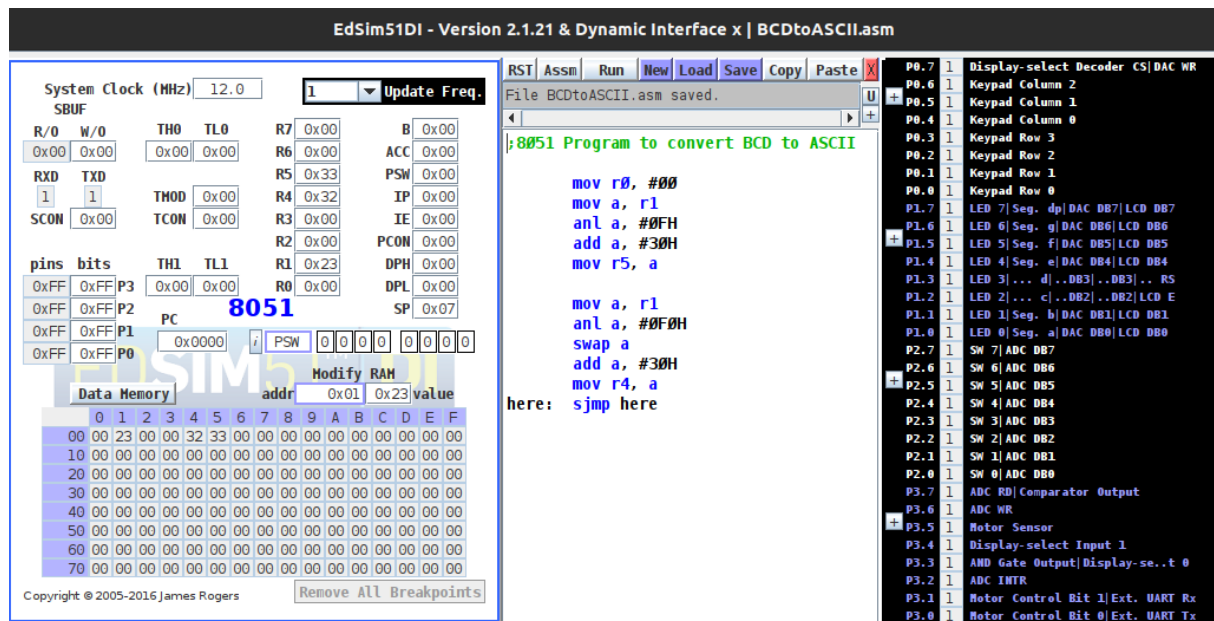


Figure 1: **Input:** r1: 23h; **Output:** Higher: 32h, Lower: 33h

## Result:

The 8051 program to convert a number from BCD to ASCII was written, and the results observed.