

HEXADECIMAL TO DECIMAL

AIM

To develop an assembly language program to convert a number in Hexadecimal to it's decimal equivalent.

ALGORITHM


Algorithm 1 Hex to decimal conversion

- 1: Start
- 2: Read the input in hexadecimal (hex).
- 3: $m = \text{hex}/A$
- 4: $\text{dec} = \text{hex} + 6 * m$
- 5: Print the result in decimal (dec).
- 6: Stop

SOURCE CODE

```
mov a , r0
mov b,#0ah
div ab
mov b,#06h
mul ab
add a , r0
mov r1 , a
stop: sjmp stop
```

INPUT:

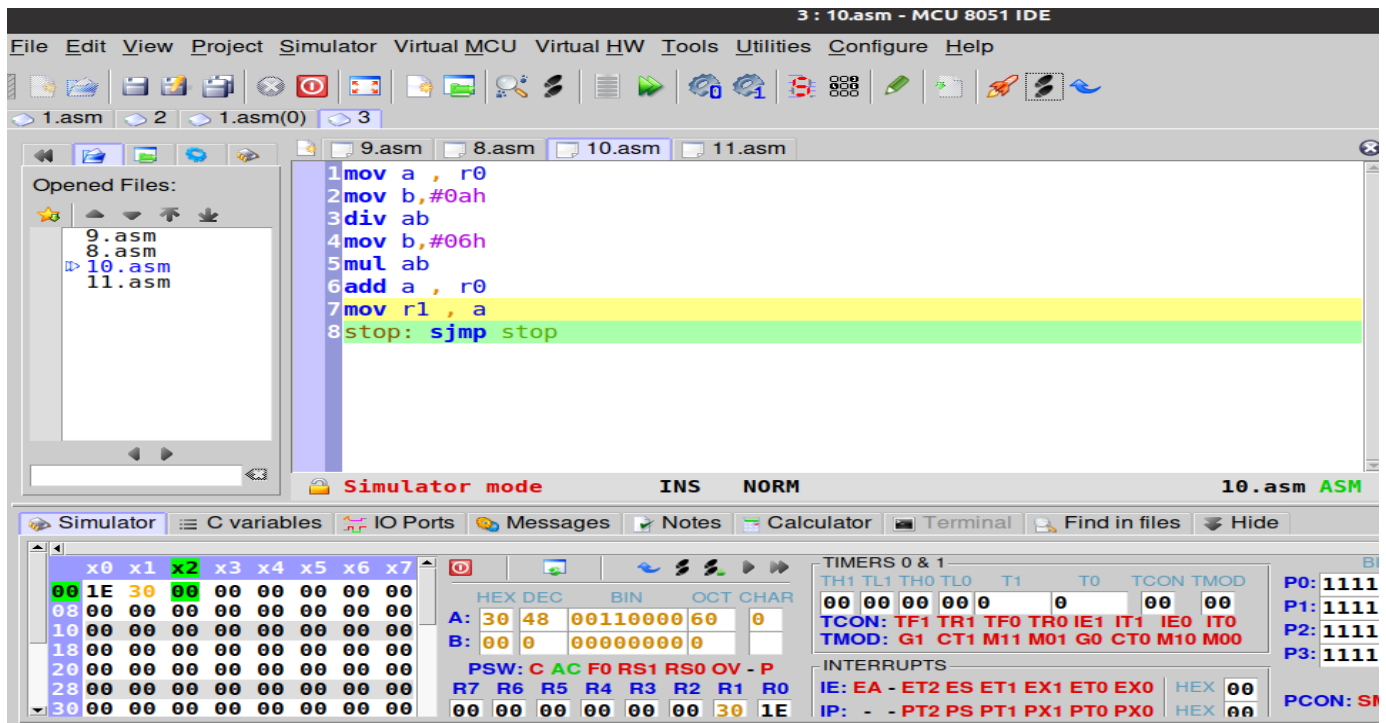


The image shows a microcontroller simulator interface. At the top, there are several icons: a red circle with a white '0', a blue square with a green plant, a blue square with a white 'X', a blue square with a white 'X', a blue square with a white 'X', a blue square with a white 'X', a blue square with a white 'X', and a blue square with a white 'X'. Below these icons, there are several registers displayed in a table format. The registers are labeled A, B, PSW, and R0 through R7. The values are shown in hexadecimal, decimal, binary, octal, and character formats. The PSW register shows the status of various flags: C (Carry), AC (Auxiliary Carry), F0 (Flag 0), RS1 (Register Select 1), RS0 (Register Select 0), OV (Overflow), and P (Parity). The R0 register contains the value 1E.

| | HEX | DEC | BIN | OCT | CHAR | | |
|-----------------------------|-----|-----|----------|-----|------|----|----|
| A: | 00 | 0 | 00000000 | 0 | | | |
| B: | 00 | 0 | 00000000 | 0 | | | |
| PSW: C AC F0 RS1 RS0 OV - P | | | | | | | |
| R7 | R6 | R5 | R4 | R3 | R2 | R1 | R0 |
| 00 | 00 | 00 | 00 | 00 | 00 | 00 | 1E |

Input in R0

OUTPUT:



Output in R1

RESULT:

Assembly language program for converting a number in hexadecimal to its equivalent decimal has been developed and verified using MCU-8051-IDE.

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