CUBE OF A NUMBER USING 8051

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<u>AIM:</u>

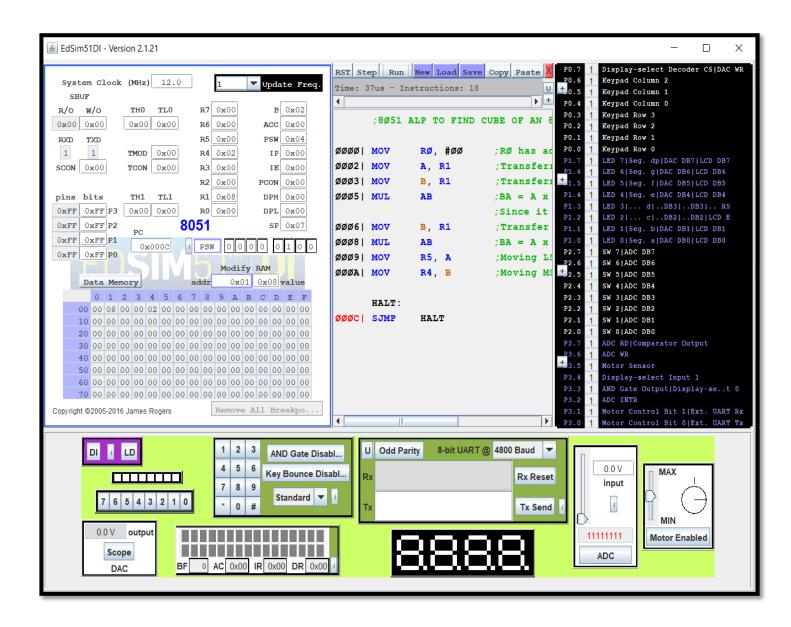To write an assembly language program to calculate the cube of an 8-bit number using an 8051 microcontroller.

PROGRAM – 1: CUBE OF A NUMBER:

ALGORITHM:

1. Begin.

2. Initialize R0 with 00h.
3. Move the value in R1 to A.
4. Move the value in R1 to B.
5. Multiply A and B.
6. Move the value in R1 to B.
7. Multiply A and B.
8. Move B to R4 (MSB of cube) and A to R5 (LSB of cube)

9. End.

PROGRAM	COMMENTS
MOV R0, #00	R0 has address of 0x00
MOV A, R1	Transferring 8-bit number to reg A
MOV B, R1	Transferring 8-bit number to reg B
MUL AB	BA = A x B
	Since it is 8-bit B = 0x00
MOV B, R1	Transfer 8-bit value to B
MUL AB	BA = A x B
MOV R5, A	Moving lower byte to R5
MOV R4, B	Moving higher byte to R4
HALT:	
SJMP HALT	Halt the program with a loop.

SAMPLE I/O SNAPSHOT:

RESULT:

An assembly level program was written to calculate the cube of a given 8-bit number using an 8051 microcontroller and the output was verified.