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main 8-Bit-Arithmetic-Operations-Using-8051- / README.md

dhanwanth07 Update README.md bf11b95 · 8 minutes ago

62 lines (55 loc) · 1.91 KB

Preview Code Blame Raw

8-Bit Arithmetic Operations Using 8051

Aim:

To perform 8-bit arithmetic operations such as addition, subtraction, multiplication, and division using the 8051 microcontroller.

Apparatus Required:

Laptop with Keil uVision software

Algorithm:

For Addition:

1. Load the first number from memory location 30H into register A.
2. Load the second number from memory location 31H into register B.
3. Add the contents of registers A and B.
4. Store the result in memory location 40H.
5. Store the carry (if any) in 41H.

For Subtraction:

1. Load the first number from memory location 30H into register A.
2. Load the second number from memory location 31H into register B.
3. Subtract B from A.
4. Store the result in memory location 40H.

For Multiplication:

1. Load the first number from memory location 30H into register A.
2. Load the second number from memory location 31H into register B.
3. Multiply A and B.
4. Store the lower byte of the result in memory location 40H.
5. Store the higher byte of the result in memory location 41H.

For Division:

1. Load the dividend from memory location 30H into register A.
2. Load the divisor from memory location 31H into register B.
3. Divide A by B.
4. Store the quotient in memory location 40H.
5. Store the remainder in memory location 41H.

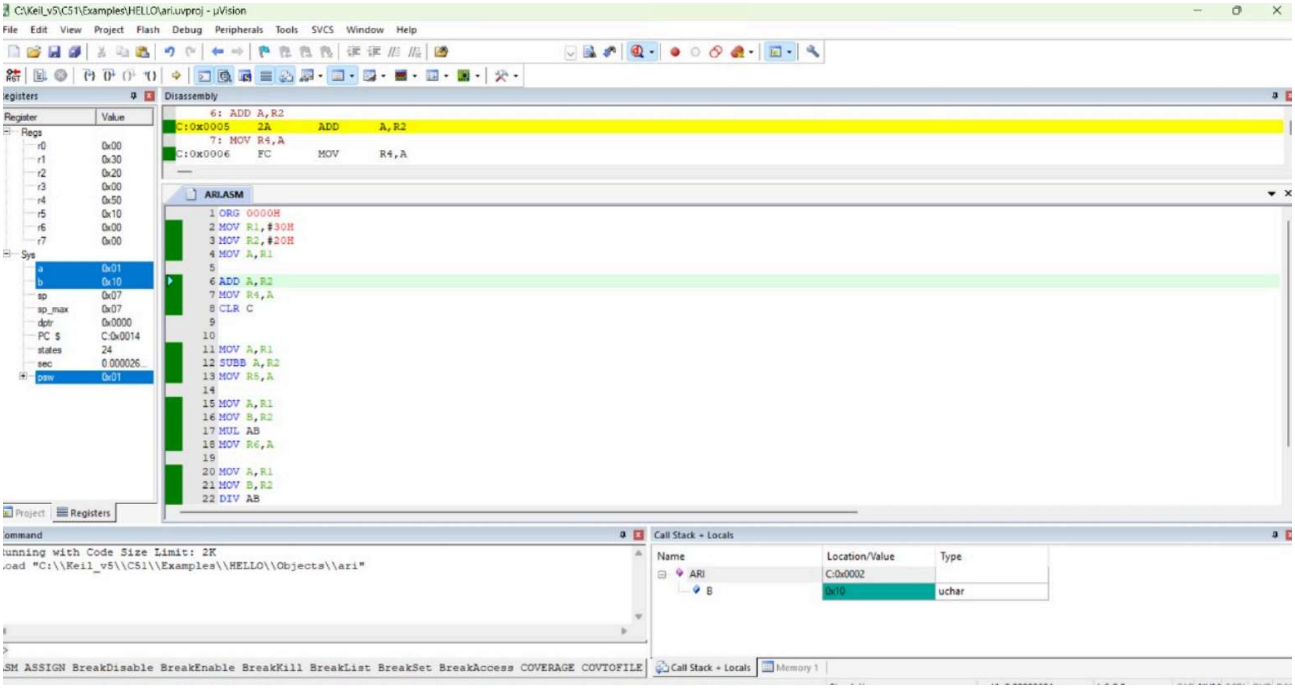
Programs:

```
ORG 0000H
MOV R1,#30H
MOV R2,#20H
MOV A,R1

ADD A,R2
MOV R4,A
CLR C

MOV A,R1
SUBB A,R2
MOV RS,A

MOV A,R1
MOV B,R2
```

```
MUL AB
MOV R6,A

MOV A,R1
MOV B,R2
DIV AB
MOV R7
```

Output:

The results of addition, subtraction, multiplication, and division operations will be stored in memory locations 40H and 41H as specified in the program.



Result:

The 8-bit arithmetic operations using the 8051 microcontroller have been successfully executed and verified using Keil software.