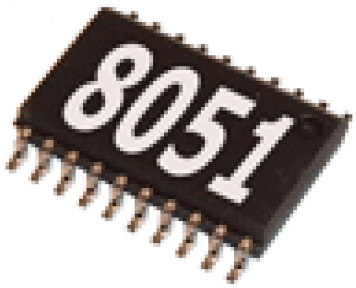
July 25, 2017 - 8051

GCD of two numbers using 8051 microcontroller.



This program finds the GCD of given two numbers and stores it in the register.

Algorithm.

1) Store the num1 in R1 register and num2 in R2 register.
2) Compare whether num1>num2 and directly store result if num1=num2.
3) If num1>num2 assign numerator register to num1 and denominator register to num2 otherwise assign numerator register to num2 and denominator register to num1 otherwise.

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4) Store the remainder in remainder register.

5) Repeat step 3 until the remainder is zero.

6) Store the value of gcd to the denominator.

CODE:

```
        org 0000h
        ljmp main
        org 40h
main:   mov R1,#09        ; The first number to fi
        mov R2,#06        ; The second number to f
        mov a,R1
        mov b,R2
        cjne a,b,next     ; compares and jumps to
        ljmp stop         ; if two numbers are equ
next:   jnc loop          ; if num1>num2 it jumps
        mov a,R2          ; if num1<num2 it assign
        mov b,R1
loop:   mov R3,b          ; temperorily storing th
        div ab
        mov a,R3
        mov R7,b          ; storing the remainder
        cjne R7,#00h,loop; the loop repeats till
stop :  mov R4,a          ; Stores the result in r
         end
```

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