

Codes Explorer

Learn Embedded C, ML, Python, C++, 8051, ARM

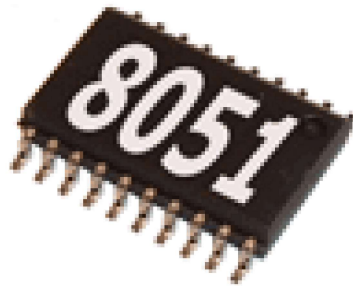


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July 28, 2017 - 8051

8051 code to check whether the number is prime or not...!!



What is a prime number?

A prime number is a number which divides by 1 and itself. So when we are taking in the program we have to take and check for the numbers which are not divisible by half of the number to be checked as a prime number.

eg: If we are checking for 11 as a prime number then it should not be divisible by numbers from 2 to 5(11/2).

Algorithm:



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1)Store the number to be checked as a prime number in the register R2.
 2)Divide the number by 2 and store it in the register R0.
 3)Check whether the R0 is 1 if it is one then it is a prime number.
 4)If R0 is not 1 then go on dividing the prime number with all the numbers till R0 is 1 (By decrementing R0 by 1).
 5)Then check if R0 is 1.If it is 1 then set the carry flag to 1 indicating that it is a prime number.
 6)Suppose if the remainder dividing R2 by any number is zero then set the carry flag to 0 indicating it is not a prime number.
 In this program let's learn how to check whether the number is prime or not.....!!!

Code goes here:

```

ORG 0000h
LJMP MAIN
ORG 40h
MAIN:    MOV R2,#11          ; Loading the numb
LABEL5:  MOV A,R2
          MOV B,#02
          DIV AB              ;Dividing the numb
          MOV R0,A
          CJNE R0,#01H,LABEL2 ;Checking whether
          SETB C
          SJMP LABEL4
LABEL1:  DEC R0               ; decrementing and
          CJNE R0,#01H,LABEL2
          SETB C               ; setting the carr
          SJMP LABEL4
LABEL2:  MOV A,R2
          MOV B,R0
          DIV AB
          MOV R3,B
          CJNE R3,#0H,LABEL1
          CLR C                ; setting the carry

```

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Programming

Categories

- 8051

- ARM

- C++

- databricks

- Java

- Machine Learning

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- Verilog

LABEL4:

END

« 8051 code to find
number of zeros and
ones in a given
number...!!

8051 code to find number
of prime numbers in
array stored in memory
with starting address
0xA0 »

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