**תרגיל בית 1**

מגישים:

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**קוד:**

; find the Greatest common divisor between two numbers

.MODEL SMALL

.STACK 100h

.DATA

TEN DB 10

TWO DB 2

FirstN DB 13,10,'Enter first two digit number',13,10,'$'

SecoN DB 13,10,'Enter second two digit number',13,10,'$'

GCD DB 13,10,'gcd(XX, XX) = XX',13,10,'$'

q1 DB ?

q2 DB ?

T DB ?

.CODE

MOV AX,@DATA

MOV DS,AX

; get the first number

FirstNum:

MOV AH, 9 ; output first Number string

MOV DX, OFFSET FirstN

INT 21H

MOV AH, 1 ; get the first digit of the first number

INT 21h

MOV GCD[6], AL ; place it in GCD string

SUB AL,'0' ; subtract the ASCII value of the number

MUL TEN ; multiplie by 10

MOV q1, AL

MOV AH, 1 ; get the second digit of the first number

INT 21h

MOV GCD[7], AL

SUB AL,'0'

ADD q1,AL ; add the second digit to the number

; get the second number

SecondNum:

MOV AH, 9 ; output Second Number string

MOV DX, OFFSET SecoN

INT 21H

MOV AH, 1 ; get the first digit of the second number

INT 21h

MOV GCD[10], AL ; place it in GCD string

SUB AL,'0'

MUL TEN

MOV q2, AL

MOV AH, 1 ; get the second digit of the srcond number

INT 21h

MOV GCD[11], AL

SUB AL,'0'

ADD q2,AL ; add the second digit to the number

Compere:

MOV AL,q1

CMP AL,q2 ; if q1 >= q2 jump to set label

JAE Set ; "else" replace their values

MOV AH,q2

MOV q1, AH

MOV q2, AL

Set: ; set in cx value for the loop

MOV CX,5

Calc:

CMP q2,0 ; compare between q2 and 0

JE SetGCD ; if equal, jump to label SetGCD

MOV AL, q1 ; al = q1

CBW ; spred al to ah

DIV q2 ; divide ax by q2

MOV T, AH ; set the remain in T

MOV AL,T

MUL TWO ;

CMP AL,q2

JBE Next ; if AL(2\*T)<=q2 jump to label Next

; "else" set T=q2-T

MOV AL, q2

SUB AL, T

MOV T, AL

Next:

MOV AL, q2 ; q1 = q1

MOV q1, AL

MOV AH, T ; q1 = T

MOV q2, AH

LOOP Calc ; loop Calc label - CX times (5)

SetGCD:

MOV AL, q1

CBW ; spred al to ah

DIV TEN ; ax / 10 - for answer with 1 digit, we divide the remain with 10

ADD AL, '0' ; add ascii value to the numbers

ADD AH, '0'

MOV GCD[16], AL ; we set the whole part first

MOV GCD[17], AH ; then the "remain" of the divide

PrintGCD: ; printing GCD string

MOV AH, 9

MOV DX, OFFSET GCD

INT 21H

MOV AH,4Ch ; Set terminate option for int 21h

INT 21h ; Return to DOS (terminate program)

END

**פלטים:**



