**את"מ מעבדה 7:  
  
מגישים:  
 אורי מלכא- 314862996   
אלן ציפין- 313206062**

;

; lab7 ori and alan

;

.MODEL SMALL

.STACK 100h

.DATA

;Vars

Stack\_Size DW (?)

Counter DW 0

Num1 DD (?)

Num2 DD (?)

Sum1 DD (?)

Sum2 DD (?)

Ten DD 10

;Strings

Menu DB 'Please enter two numbers (1-4,294,967,295)',13,10,'$'

Amicable DB 13,10,'Amicable Numbers',13,10,'$'

NotAmicable DB 13,10,'Not Amicable Numbers',13,10,'$'

.CODE

.386

;------- getNum ---------------------------------------------

getNum PROC NEAR

;We Store num ESI

PUSH ESI

XOR ESI,ESI

MOV CX,11

Build:

XOR EAX,EAX

MOV AH,1

INT 21h

CMP AL,13

JE EndBuild

XOR EBX,EBX

MOV BL,AL

SUB BL,'0'

;NUM\*10 +input

MOV EAX,ESI

MUL TEN ;EDX:EAX=NUM\*10

MOV ESI,EAX

ADD ESI,EBX ;ESI=NUM

Loop Build

EndBuild:

MOV AX,SI

SHR ESI,16

MOV DX,SI

POP ESI

RET

getNum ENDP

;-------End getNum ----------------------------------------------

;------ PNum ---------------------------------------------------

Pnum PROC NEAR

;Sum will be saved in EBX

;X will be saved in ESI

;POP EAX ;EAX=X

PUSH ESI ;We save ESI

MOV ESI,EAX

XOR EBX,EBX

ADD EBX,1

CMP ESI,1

JE EndAlgo

MOV ECX,2

StartAlgo:

CMP ESI,ECX

JE EndAlgo

MOV EDX,0

MOV EAX,ESI

DIV ECX ;EDX=EDX:EAX%ECX

CMP EDX,0

JNE NotDivider

ADD EBX,ECX

NotDivider:

INC ECX

JMP StartAlgo

EndAlgo:

;MOV AX,WORD PTR [EBX]

;MOV DX,WORD PTR [EBX+2]

SumIs1:

MOV AX,BX

SHR EBX,16

MOV DX,BX

POP ESI

RET

Pnum ENDP

;-------End PNum -----------------------------------------------

Main:

MOV AX,@DATA

MOV DS,AX

MOV AH,9

MOV DX,OFFSET Menu

INT 21H

;input First number

CALL getNum

MOV Word Ptr Num1,DX

SHL Num1,16

XOR EBX,EBX

MOV BX,AX

ADD Num1,EBX

;input Second Number

CALL getNum

MOV Word Ptr Num2,DX

SHL Num2,16

XOR EBX,EBX

MOV BX,AX

ADD Num2,EBX

;First sum

XOR EAX,EAX

MOV EAX,Num1

CALL Pnum

MOV Word Ptr Sum1,DX

SHL Sum1,16

XOR EBX,EBX

MOV BX,AX

ADD Sum1,EBX

;Check sum1 with num2

MOV EAX,Sum1

CMP EAX,Num2

JNE NotAm

;First sum

XOR EAX,EAX

MOV EAX,Num2

CALL Pnum

MOV Word Ptr Sum2,DX

SHL Sum2,16

XOR EBX,EBX

MOV BX,AX

ADD Sum2,EBX

;Check sum2 with num1

MOV EAX,Sum2

CMP EAX,Num1

JNE NotAm

MOV AH,9

MOV DX,OFFSET Amicable

INT 21H

JMP toEnd

NotAm:

MOV AH,9

MOV DX,OFFSET NotAmicable

INT 21H

toEnd:

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

INT 21h ; Return to DOS (terminate program)

END Main  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
