Write a MASM program to add two 16-bit nos

Program

Data segment

```
opr1 db oah,odh,"enter first no: $"
opr2 db oah,odh,"enter second no: $"
result db oah,odh,"result $ "
num dw?
num1 dw?
num2 dw?
num3 dw?
sum  dw?
```

str and opnd declr

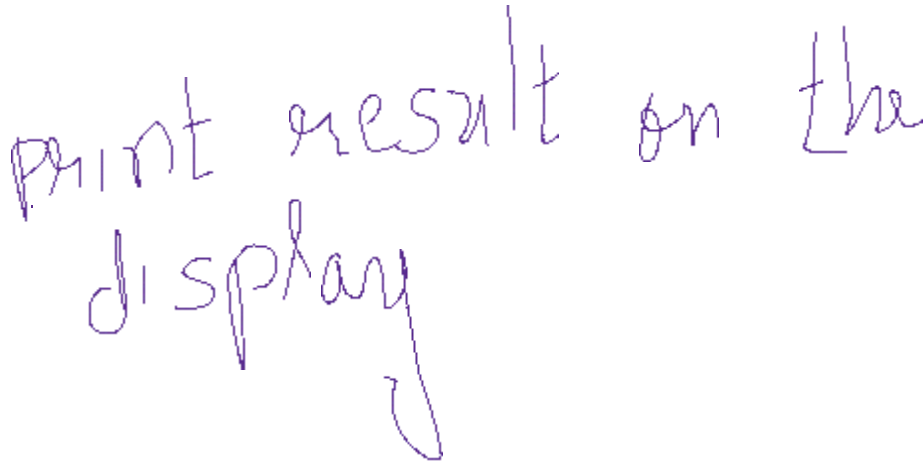
```
display macro msg
mov dx,offset msg
mov ah,09h
int 21h
endm
```

macro - str display

```
read macro num
local l1,exit
mov ah,01h
int 21h
mov ah,00h
sub ax,0030h
mov num,ax
L1:mov ah,01h
int 21h
cmp al,0dh
je exit
```

```
mov ah,00h
sub ax,0030h
mov num1,ax
mov ax, num
mov bx,000ah
mul bx
add ax,num1
mov num,ax
jmp L1
exit:nop
end m
```


```
print macro num
local l2,l3
mov ax,num
mov cx,0000h
L2:mov dx,0000h
mov bx,000ah
div bx
push dx
inc cx
cmp ax,0000h
jnc  L2
L3:pop dx
add dx,0030h
mov ah,02h
int 21h
loop L3
end m
```



data ends

Code segment

Assume cs:code,ds:data

```
start:mov ax,data
      mov  ds,ax
      display opr1
      read num1
      mov cx,num1
      display opr2
      read num2
      mov bx,num2
      display result
      add cx,bx
      mov sum,cx
      print sum
      mov ah,4ch
      int 21h

      code ends
      end start
```

Program to check whether a given string is palindrome or not

```
Data segment
msg1 db "Enter the string:$"
msg2 db 0ah,0dh,"The reverse of the string is:$"
msg3 db 0ah,0dh,"The string is palindrome:$"
msg4 db 0ah,0dh,"not palindrome:$"
```

```
msg5 db 0ah,0dh,"$"
str1 db 20 dup(?)
rev db 20 dup(?)
print macro msg
   lea dx,msg
   mov ah,09h
   int 21h
endm
read macro
  mov ah,01h
  int 21h
endm
Data ends
Code segment
start:
      mov ax,data
      mov ds,ax
```

```
  mov ch,00h
  mov cl,00h
  mov si,offset str1
  print msg1
l1:read
   mov bl,al
   cmp bl,0dh
   je l0
   mov [si],al
   mov bh,00h
   push bx
   inc si
   inc cl
   jmp l1
 l0:mov al,'$'
    mov [si],al
    mov bh,cl
```

```
  mov di,offset rev
l2:pop dx
   mov [di],dl
   inc di
   loop l2
   mov al,'$'
   mov [di],al
   print msg2
   print msg5
   print rev
   mov si,offset str1
   mov di,offset rev
   mov cl,bh
 l4:mov al,[si]
  cmp al,[di]
  jnz l3
  inc si
```

```
    inc di
    loop l4
    print msg3
    jmp l5
l3:print msg4
l5:mov ah,4ch
    int 21h
    end start
```

Output

```
Enter the String: madam
The reverse String is:madam
The String is Palindrome.
```