



PRACTICE 3: Procedures and macros

Objectives:

The aim of these practices is to help students in the understanding of software reuse via procedures and macros

Programs used:

Microsoft Assembler 5.1 will be used to assemble (MASM), link (LINK) and execute (CODE VIEW) assembly programs.

ACTIVIDADES PARA LA PRÁCTICA 3

Some of the next activities may have coding mistakes in order of learning how errors are shown and corrected.

Exercise #	Exercise
1	<pre>Write, assemble, link and execute next program code: dosseg .model small .stack 100h .data Texto1 DB "This program calculates powers", 13,10,' ' Texto2 DB "Please, enter Base < 255: ", 13,10,' ' Texto3 DB "Please, introduce Exponent < 255: ", 13,10,' ' Base DB ? Exp DB ? Resul DW ? .code convierte proc sub al,30h ret convierte endp potencia macro LaBase, Exponente mov cx, Exponente mov ax, 1 jcxz cero otro: mul LaBase loop otro</pre>

Exercise #	Exercise
	<pre> cero: endm Inicio: mov ax, @data mov ds, ax mov ah,9 lea dx,Texto1 int 21h lea dx,Texto2 int 21h mov ah,1 int 21h call convierte mov Base, al mov ah,9 lea dx,Texto3 int 21h mov ah,1 int 21h call convierte mov Exp, al potencia Base, Exp mov Resul, ax mov ah, 4Ch int 21h END Inicio </pre>
2	Display Base, Exp y Resul variables (E.g. CODE VIEW line order > Wb Base 1 1) Is the result correct?
3	Display stack values before and after jumping into the procedure E.g.: Code View line order > Wb SS:SP 16 What can be observed?

PRACTICE 3

Procedures and Macros

Create an assembly program (without using string instructions) that read two strings of characters from the keyboard (maximum length 120 characters). Both strings must be compared using a macro and finally the program must display the number of different characters only. It's mandatory to distinguish between uppercase and lowercase.

E.g.

If the read string were:

To be or not to be, that is the question

To BE or not to be

The program will show:

Number of different characters: 24