עבודת בית 3 להגשה – את"מ -   
מגישים:   
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;

; HW3 DECODE

; extern void decode(char code\_array[], char msg[], char decoded\_msg[]);

; encoded msg in -> char msg[]

; we put in decoded in -> char decoded\_msg[]

; we take the code from char code\_array[]

.MODEL LARGE

.STACK 100h

.DATA

.CODE

.386

PUBLIC \_decode

\_decode PROC FAR

; BP+16 -> OFFSET code\_array[] ES:BX

; BP+18 -> SEG code\_array[]

; BP+20 -> OFFSET msg[] GS:SI

; BP+22 -> SEG msg[]

; BP+24 -> OFFSET decoded\_msg[] FS:DI

; BP+26 -> SEG decoded\_msg[]

;save values

PUSH BP

PUSH DI

PUSH SI

PUSH ES

PUSH GS

PUSH FS

MOV BP,SP

MOV ES,[BP+18]

MOV BX,[BP+16]

MOV GS,[BP+22]

MOV SI,[BP+20]

MOV FS,[BP+26]

MOV DI,[BP+24]

Decode:

CMP Byte PTR GS:[SI],0 ; We check if we reached the end of the encoded string

JE EndOfMsg

MOV BX,[BP+16]

XOR AX,AX

XOR CX,CX

XOR DX,DX

MOV AL,Byte PTR GS:[SI] ; AL=encoded msg[0]

FindOriginal:

CMP AL,Byte PTR ES:[BX] ;check the index to find out the correct output.

JE Match

INC BX ;We need the index

INC CX

JMP FindOriginal

Match:

; Code\_array[0] is ES:[BX] now we want the Code\_array[AH] -> SO ES:[BX+AH]

MOV Byte PTR FS:[DI],CL ;decoded\_msg[0]=INDEX=BX

INC SI

INC DI

JMP Decode

EndOfMsg: ;We need to put NULL in the end of decoded msg

MOV Byte PTR FS:[DI],0

POP FS

POP GS

POP ES

POP SI

POP DI

POP BP

RET

\_decode ENDP

END

;

; HW3 ENCODE

;void encode(char code\_array[], char msg[], char encoded\_msg[]);

; original msg in -> char msg[]

; we put in encoded in -> char encoded\_msg[]

; we take the code from char code\_array[]

.MODEL LARGE

.STACK 100h

.DATA

.CODE

.386

PUBLIC \_encode

\_encode PROC FAR

; BP+16 -> OFFSET code\_array[] ES:BX

; BP+18 -> SEG code\_array[]

; BP+20 -> OFFSET msg[] GS:SI

; BP+22 -> SEG msg[]

; BP+24 -> OFFSET encoded\_msg[] FS:DI

; BP+26 -> SEG encoded\_msg[]

;save values

PUSH BP

PUSH DI

PUSH SI

PUSH ES

PUSH GS

PUSH FS

MOV BP,SP

MOV ES,[BP+18]

MOV BX,[BP+16]

MOV GS,[BP+22]

MOV SI,[BP+20]

MOV FS,[BP+26]

MOV DI,[BP+24]

Encode:

CMP Byte PTR GS:[SI],0 ; We check if we reached the end of the msg string

JE EndOfMsg

MOV BX,[BP+16]

XOR AX,AX

XOR DX,DX

MOV AL,Byte PTR GS:[SI] ; AL=msg[0]

ADD BX,AX ; Code\_array[0] is ES:[BX] now we want the Code\_array[AH] -> SO ES:[BX+AH]

MOV DL,Byte PTR ES:[BX]

MOV Byte PTR FS:[DI],DL ;Encoded\_msg[0]=Code\_array[AH]

INC SI

INC DI

JMP Encode

EndOfMsg: ;We need to put NULL in the end of encoded msg

MOV Byte PTR FS:[DI],0

POP FS

POP GS

POP ES

POP SI

POP DI

POP BP

RET

\_encode ENDP

END

