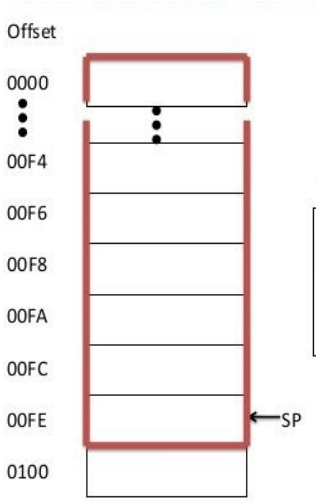
CSE 331L / EEE 332L: Microprocessor Interfacing & Embedded System

Section: 7&9, Spring 2020

Lab - 07 (Stack)

STACK:

1. PUSH: **PUSH source**
   source must be a **16-bit register or memory word.**
2. First **decrease SP by 2**, then copy of the source is moved to **SS:SP.**
3. SP contains the offset address of the top of the stack.
4. POP: **POP destination**
   destination must be a **16-bit register or memory word**.
5. First, the content of **SS:SP** (top of the stack) is moved to destination, then SP **increases by 2.**



Example: Write a program that takes a text input from the user until the user enters **a carriage return.** Display the text in reverse order (you must use stack instructions).

```
ORG 100H
.MODEL SMALL
.STACK 100H
.CODE

MAIN PROC
        MOV AH, 1
        MOV CX, 0

        INPUT:
        INT 21H

        CMP AL, 13
        JE NEWl

        MOV BL, AL
        PUSH BX
        INC CX
```

```
        JMP INPUT

        NEWl:
        MOV AH, 2
        MOV DL, 10
        INT 21H
        MOV DL, 0Dh
        INT 21H
        JMP REVERSE

        REVERSE:
        POP DX
        INT 21H
        LOOP REVERSE

        EXIT:
        MOV AH, 4CH
        INT 21H
MAIN ENDP
END MAIN
```

Tasks:

1. Write a program that takes some words separated by blank spaces from the user until the user enters a **carriage return**, and displays the text with the same word order but with the reverse letter order in each word.
   Example:
   Input: **This is an example**
   Output: **sihT si na elpmaxe**