Matthew Mohler

ECE 427: Microcomputer Architecture Lab

Experiment #1

Supplement to Task 1

Performed: 9/10/2013

Submitted: 9/17/2013

Objective:

Step 1: Read two strings at a time after corresponding user prompt in different lines. This way both strings will be on the command prompt.

Step 2: Output both the strings in the next line. Take a screenshot at this point. This will be the 'output' part of your lab report.

Step 3: Clear the screen after user approval.

Algorithm:

Allocate Memory to store the user's input, and define the prompt strings.
Clear the screen
Display a message prompting the user for their first name
Get user input (first name) and store in memory
Move the cursor to the second line
Display a message prompting the user for their last name
Get user input (last name) and store in memory
Move the cursor to line three
Print the first and last names on line three
Wait for user input
Clear the screen
Return control

Word Description:

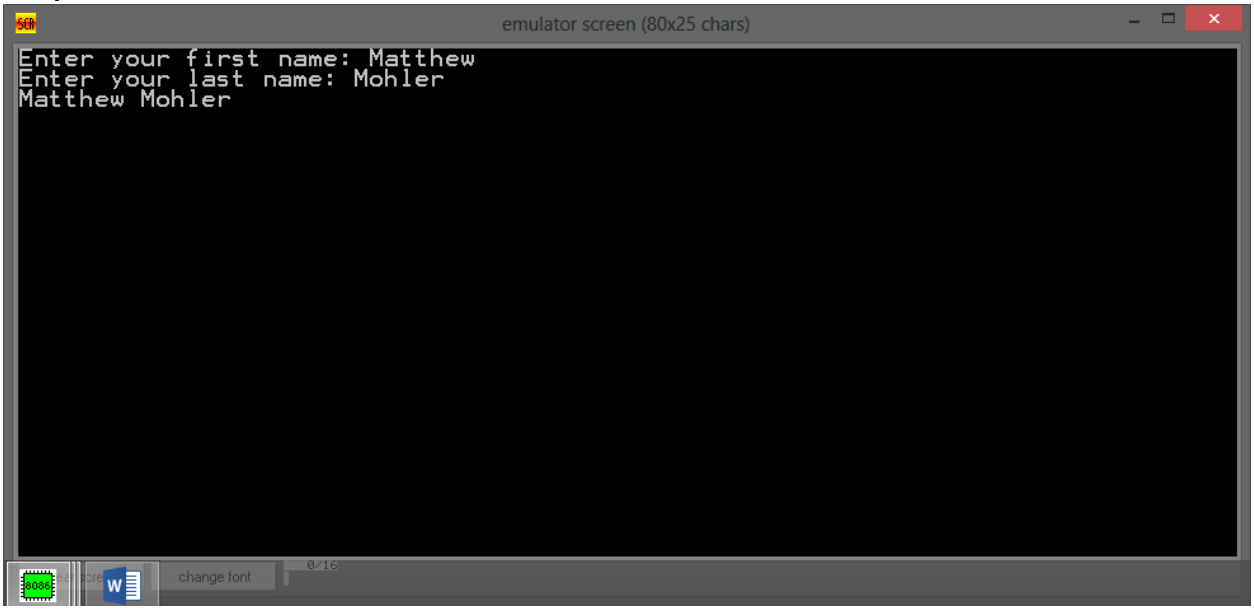
In this lab, we read two strings in from the user, specifically their first and last name, and then printed them out to the screen.

Code:

```
org 100h ;Start from memory location 100h

;Allocate Memory
.data
MSG1 DB 'Enter your first name: ','$'
MSG2 DB 'Enter your last name: ','$'
FIRSTNAME DB 8,?,8 DUP (255), '$'
LASTNAME DB 8,?,8 DUP (?),'$'

.code
;Clear the screen
MOV AH,06
MOV AL,00
MOV BH,07
MOV CH,00
MOV CL,00
MOV DH,24
MOV DL,79
INT 10H

;Display a message
LEA DX,MSG1
MOV AH,09
INT 21H

;Get FIRSTNAME from Keyboard
MOV AH,0AH
LEA DX,FIRSTNAME
INT 21H

;Move Cursor to line 2
MOV AH,02
MOV BH,00
MOV DL,00
MOV DH,01
INT 10H

;Display a message
LEA DX,MSG2
MOV AH,09
INT 21H

;Get LASTNAME from Keyboard
MOV AH,0AH
LEA DX,LASTNAME
INT 21H
```

```
;Move Cursor to line 3
MOV AH,02
MOV BH,00
MOV DL,00
MOV DH,02
INT 10H

;Move Cursor Position
MOV AH,02
MOV BH,00
MOV DL,08
MOV DH,02
INT 10H

;Display Last Name
MOV DX,OFFSET LASTNAME
ADD DX,02H
MOV AH,09
INT 21H

;Display First name
LEA DX,FIRSTNAME
MOV AH,09
INT 21H

;Wait for user input
MOV AH,01
INT 21H

;CLEAR SCREEN
MOV AH,06
MOV AL,00
MOV BH,07
MOV CH,00
MOV CL,00
MOV DH,24
MOV DL,79
INT 10H

;end program
ret
```

Output:



Conclusion & Comments:

In this lab, we were able to gather input from the keyboard, store the data in memory, and then return the same data back to the user. While not including data modification, this lab develops the framework of how to define data segments, and allocate memory for the data you need, and in addition, provides practical experience with some of the common interrupts used (INT 10H & 21H).