Department of CSE

Lab Report 02

Submitted by: Zahidul Kabir
Roll: 2233081242
Batch: 60
Section: B
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Submitted to:

Rezwanul Haque

Lecturer, Microprocessor Assembly Programming, UU

Problem Statement:

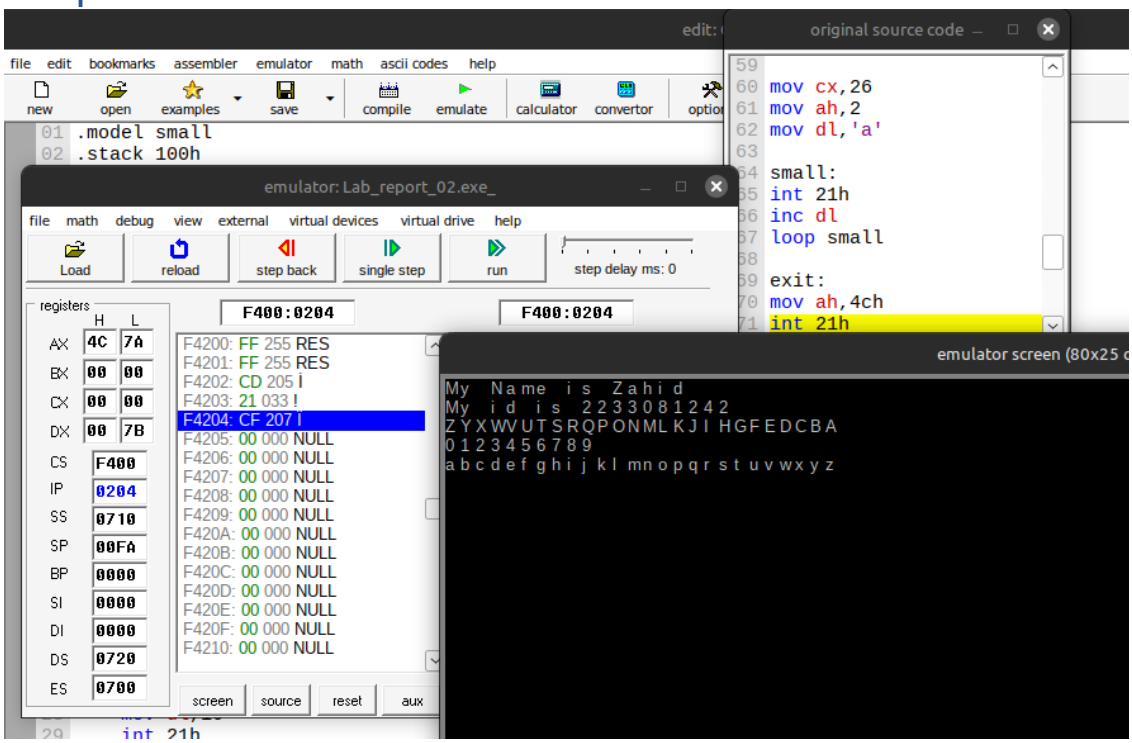
Write an assembly language program that performs the following operations:

1. Declare two variable strings name and id
2. Print the name and id in seperate line using newline
4. Print ‘Z’ to ‘A’ in decending order using a loop in a newline
5. Print ‘0’ to ‘9’ in ascending order using a loop in a newline
7. Print ‘a’ to ‘z’ in ascending order using a loop in a newline

Code:

```
.model small
.stack 100h
.data
   nick db 'My Name is Zahid$'
   id   db 'My id is 2233081242$'

.code
main proc
        mov ax,@data
        mov ds,ax

        mov ah,9
        lea dx,nick
        int 21h

        mov ah,2
        mov dl,10
        int 21h
        mov dl,13
        int 21h

        mov ah,9
        lea dx,id
        int 21h

        mov ah,2
        mov dl,10
        int 21h
        mov dl,13
        int 21h

        mov cx,26
        mov ah,2
        mov dl,'Z'

capital:
        int 21h
        dec dl
        loop capital

        mov dl,10
        int 21h
        mov dl,13
        int 21h

        mov cx,10
        mov dl,'0'

number:
        int 21h
        inc dl
        loop number

        mov dl,10
        int 21h
        mov dl,13
        int 21h

        mov cx,26
        mov ah,2
        mov dl,'a'

small:
        int 21h
        inc dl
        loop small

exit:
        mov ah,4ch
        int 21h
    main endp
end main
```

Output:



Discussion:

Our following code creates a program that first creates two variable named nick and id which has my nickname and ID stored into it. Then we print these two in seperate lines. After that we perform three loop operations. In th first loop we print ‘Z’ to ‘A’. In the seconf loop we print ‘0’ to ‘9’. and in the last and final loop we print ‘a’ to ‘z’ all in their very own seperate line.

We print a newline by moving the value 2 in ah and 13 in display register dl with an interrupt 21h. After that we print a line feed which has the value 10 with an interrupt 21h.

To print the string variables we set ah to 9. then we load the effective address of the variables into our display register and print it by calling an interrupt 21h.

And as for the loops first we set the counter cx as required for the loop which is 26 for the 1st and 3rd loop and 10 for the 2nd loop. Then we set the value of ah to 2 and initailize the display register with an initial value (first ‘Z’, second ‘0’, third ‘a’).

And for the loop we create a section named for the desired loop (capital, number, small) and call an interrupt 21h and then increase or decrease the value of display register accordingly and loop the section which loops until the value of cx becomes zero.