SUKKUR IBA UNIVERSITY

LAB 03

Assembly language

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CAA

1. Write an assembly language program that displays your name 10 times (using a loop).

```
.MODEL SMALL ;64KB
.STACK 100H  ;256
.data
   msg1 DB 'Abdul Samad $'
.CODE
MAIN PROC

   mov ax, @data
   mov ds, ax
   MOV AH, 02  ;Code for standard out (display)

   MOV CX,10

   MY_LABEL:

   mov ah, 09
   lea dx,msg1
   int 21h

   mov ah,02
   mov dl,13
   int 21h
   mov dl,10
   int 21h

   LOOP MY_LABEL

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

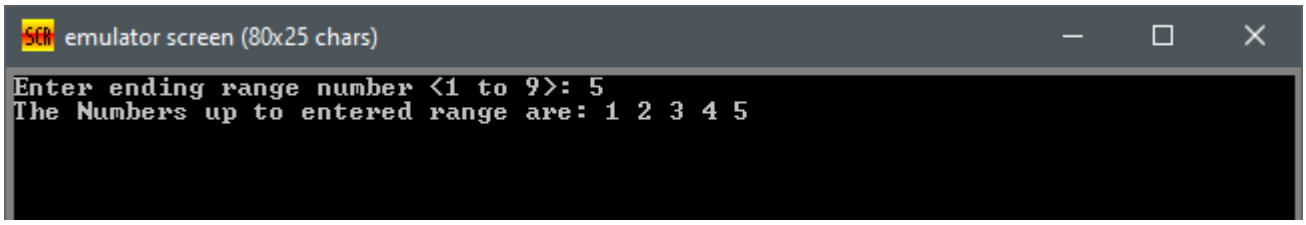
2. Write an assembly language program that displays numbers from 0 to 9, as shown below:

```
.MODEL SMALL ;64KB
.STACK 100H  ;256

.CODE
MAIN PROC
   MOV AH, 02  ;Code for standard out (display)

   MOV CX,10
   MOV BL,48

   MY_LABEL:

   MOV DL, BL  ;Data/character to be displayed
   INT 21H     ;Interrupt

   INC BL ; BL = BL+1

   LOOP MY_LABEL

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

3. Write an assembly language program that asks the user to input a number as an ending range. Then, the program should display numbers from 1 to that ending range (entered by the user), as shown below:

```
 .MODEL SMALL ; 64KB
.STACK 100H   ; 256

.DATA
msg DB 'Enter ending range number <1 to 9>: $'
msg1 DB 'The Numbers up to entered range are: $'

.CODE
MAIN PROC
   mov ax, @data
   mov ds, ax

   mov ah, 09h     ;
   lea dx, msg
   int 21h

   mov ah, 01h     ; Read input from user
   int 21h
   sub al, 30h
   mov cx, ax


   mov ah,02
   mov dl,13
   int 21h
   mov dl,10
   int 21h


   mov ah, 09h
   lea dx, msg1
   int 21h

   mov bl, 01h
loop_start:
   mov ah, 02h
   mov dl, bl
   add dl, 30h
   int 21h

   mov ah, 02h
```

```
    mov dl, ' '
    int 21h

    inc bl
    cmp bl, cl
    jle loop_start

    mov ah, 4ch
    int 21h
MAIN ENDP

END MAIN
```



4. Write an assembly language program to display English alphabet (in upper case A - Z) on the screen (using a loop), as shown below:

```
.MODEL SMALL ;64KB
.STACK 100H  ;256

.CODE
MAIN PROC
    MOV AH, 02  ;Code for standard out (display)

    MOV CX,26
    MOV BL,65

    MY_LABEL:

    MOV DL, BL  ;Data/character to be displayed
    INT 21H     ;Interrupt

    INC BL ; BL = BL+1

    LOOP MY_LABEL

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

5. Write an assembly language program to display English alphabet (in small cases a - z) on the screen (using a loop), as shown below:

```
.MODEL SMALL ;64KB
.STACK 100H  ;256

.CODE
MAIN PROC
    MOV AH, 02  ;Code for standard out (display)

    MOV CX,26
    MOV BL,97

    MY_LABEL:

    MOV DL, BL  ;Data/character to be displayed
    INT 21H     ;Interrupt

    INC BL ; BL = BL+1

    LOOP MY_LABEL

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

6. Combine the previous two programs to display capital alphabets on one line and small alphabets on the second line, as shown below:

7. 

CAA