***1. (a) Write a program in assembly language to print the numbers from 0 to 9.***

**CODE:**

ORG 100h

\_start:

MOV CX, 10 ; Set loop counter to 10 (for numbers 0 to 9)

MOV AL, '0' ; Start with ASCII code for '0' (character '0')

print\_loop:

MOV DL, AL ; Move the character in AL to DL for printing

MOV AH, 02h ; Set up DOS function to print character in DL

INT 21h ; Call DOS interrupt to print the character

; Increment AL to get the next ASCII character (from '0' to '9')

INC AL ; Increase AL by 1 (next character)

LOOP print\_loop ; Loop back to print\_loop until CX becomes 0

exit:

MOV AH, 4Ch ; Prepare to exit the program

INT 21h ; Call DOS interrupt to exit

END \_start ; Mark the end of the program and the entry point

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**

***1.*** ***(b) Write an assembly language program to print the characters from A to Z in reverse order.***

**CODE:**

ORG 100h ; Start program at offset 100h

\_start:

MOV CX, 26 ; Set loop counter to 26 (for letters Z to A)

MOV AL, 'Z' ; Start with ASCII code for 'Z'

print\_loop:

MOV DL, AL ; Move the current character in AL to DL for printing

MOV AH, 02h ; DOS function to print character in DL

INT 21h ; Call DOS interrupt to print the character

DEC AL ; Decrement AL to get the previous ASCII character (from 'Z' to 'A')

LOOP print\_loop ; Loop until CX becomes 0 (prints characters from 'Z' to 'A')

; Print a newline after printing letters

MOV DL, 0Dh ; Move carriage return (CR) into DL

MOV AH, 02h ; Set up for printing a character

INT 21h ; Call DOS interrupt to print the carriage return

MOV DL, 0Ah ; Move line feed (LF) into DL

INT 21h ; Call DOS interrupt to print the line feed

exit:

MOV AH, 4Ch ; DOS function to exit program

INT 21h ; Call DOS interrupt to exit

END \_start ; Mark the end of the program and the entry point

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**