University of Central Punjab

Faculty of Information Technology

Computer Organization and Assembly Language (COAL)
Final Term Exam Lab FALL 2021

Name: **Registration Number:**

Total Marks: 40 **Time Allowed: 120 Minutes**

Instructions:

1. **Read Problem Statement carefully.**
2. **This is closed book and closed notes paper.**
3. **Only computer calculator is allowed.**
4. **Attempt all questions.**
5. **Submit only .asm files on UCP student portal of all questions.**

Good Luck

Question # 1: 20 marks

Write a function "**writestring**" that takes two parameters. The first parameter is the string starting index to write the string and the second is the address of a memory area containing current row, current column and normal attribute.

The function writes the passed string at (**current row, current column**) using the **string instructions** and normal attribute. It then increments current column, If current column goes outside the window, it makes it **zero** and increments current row. If current row gets out of window, it scrolls the window one line up and write the string.

Example 1:

String db "I LOVE COAL",0

Current_row: db 2

Current_col: db 5

Attribute: db 0x0F

Example 2:

String db "I LOVE COAL",0

Current_row: db 7

Current_col: db 68

Attribute: db 0x0F

Note: Must use String Instructions and your code must be generic.

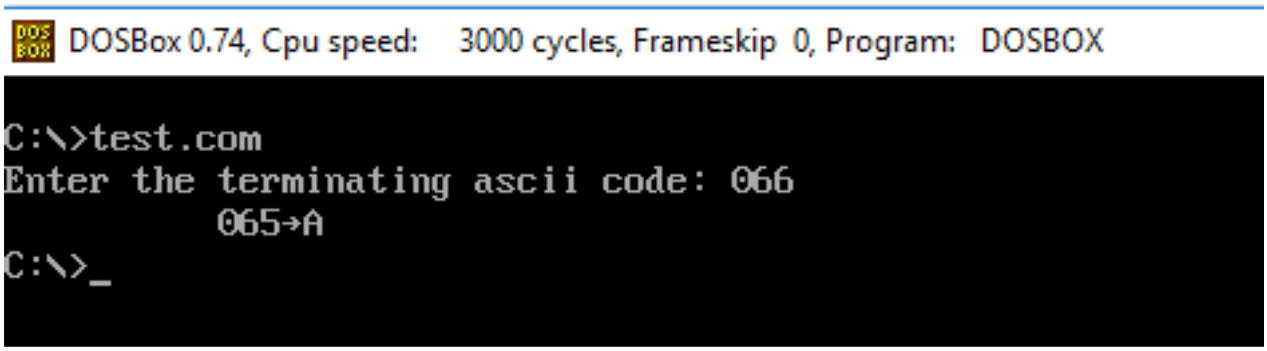
Question # 2: 20 marks

Write a program which will **display** the character along with their respective ascii codes. **Hook** interrupt number **16h** against your print_ascii subroutine. Display the ascii table starting from **65** till a number **n** entered by a user.

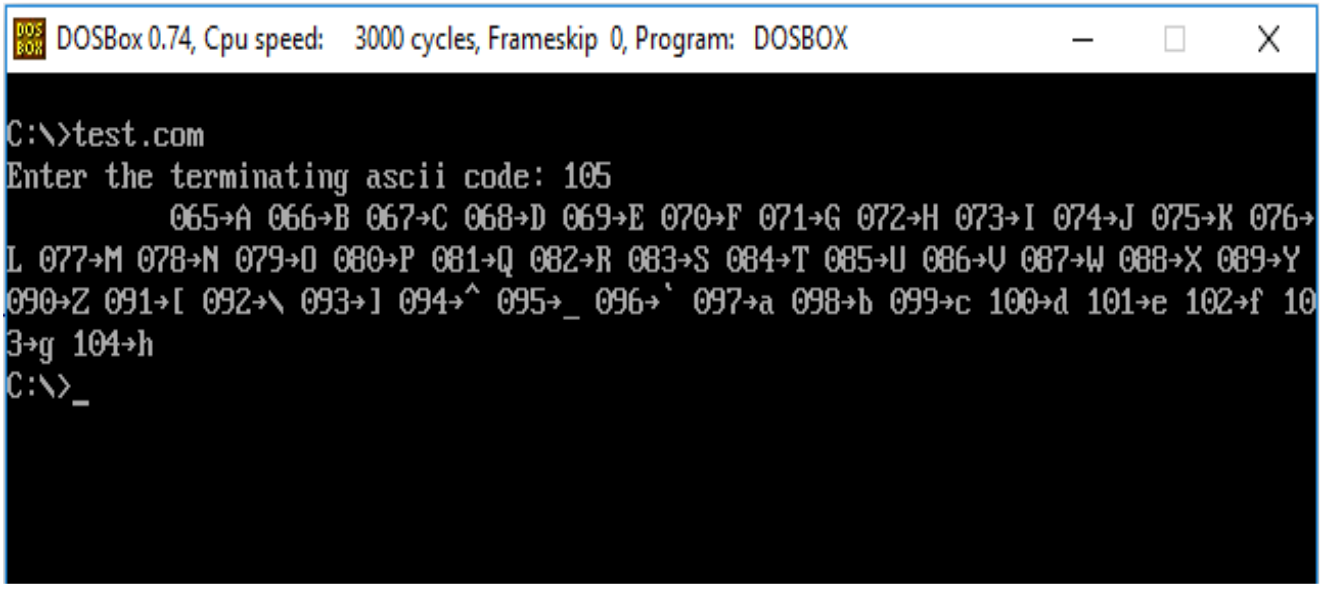
Note: Don't Display anything if number **n** is less than **65** and greater than **255**

Hint: Complete the major functionality and then implement the hooking, unhooking in your code.

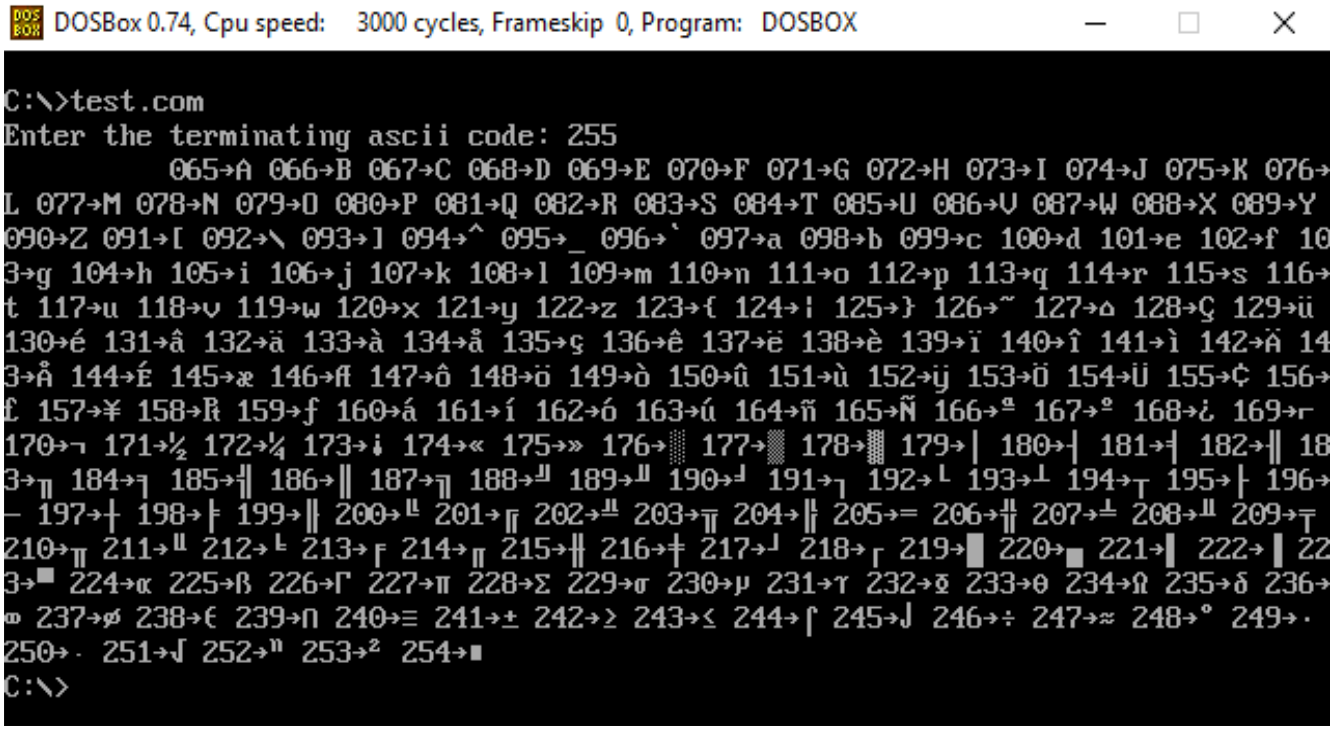
Example 1:



Example 2:



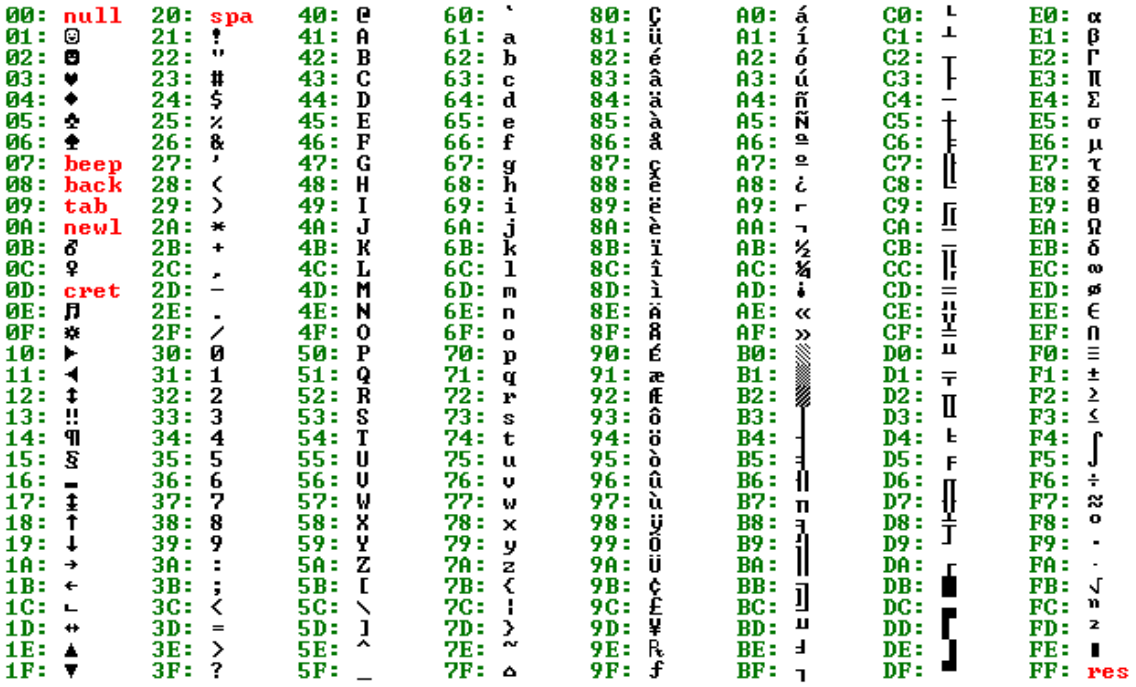
Example 3:



Note: Your code must be generic.

ASCII CODES

HEX format



ASCII CODES

Decimal format