Assembly Language (C, D, E)
Fall 2022
Assignment-4
Total Marks:100
Submission: Submit only one .asm file on the google classroom, which should be named on your roll number. DONOT SHARE YOUR CODE WITH ANYONE. DO NOT COPY ANYONES CODE. DO NOT PLACE YOU CODE AT UNSECURE LOCATION.
Deadline 3rd December 2022, till midnight. No late submissions allowed.

You are required to implement a game with following requirements:

- The game will start when you run your program on DOSBox.

- Clear your screen and Place Green and Red cells on the whole screen at the start of your game i.e., some of the locations have red background and some of the locations have green background. [20 marks]

- Initially an asterisk '*' (ASCII code 0x2A) will be moving towards right i.e., the '*' will start from a starting position (0, 0) and it will keep moving from the first to last column of the first row until the user changes its direction, making each movement after one second. Hint: Hook timer interrupt (8h) and make the movement in the timer interrupt service routine after 1 second. Timer interrupt comes 18 times per second. [20 marks]

- Direction of the '*' can be changed by using Up, Down, Left or Right arrow keys. Hint: Hook keyboard interrupt (9h) and change the direction variable when Up, Down, Left or Right arrow keys are pressed. [20 marks]

- Downward movement means the '*' will keep moving from first to last row of same column until user changes its direction. Upward movement means the '*' will keep moving from last to first row of same column until user changes its direction. Leftward movement means that '*' will keep moving from the last to first column of the particular row until user changes the direction.

- If the '*' crosses a green cell, one point is added to your score and the cell is cleared (i.e., it becomes black). Display score on the right upper corner of the screen. [10 marks]

- If the '*' hits a Red cell, the game is over and it terminates successfully i.e. your program will terminate and DOSBOX and command prompt will run normally. [10 marks]

Note: 20 marks reserved for viva

Scan Code for Up – 0x48
Scan Code for Down – 0x50
Scan Code for Left - 0x4B
Scan Code for Right – 0x4D