**Assembly Language (G,H)**

**Fall 2023**

**Project**

**Total Marks:100**

**Submission: This project should be done alone or in pairs. Submit only one .asm file on the google classroom. DONOT SHARE YOUR CODE WITH ANYONE. DO NOT COPY ANYONES CODE. DO NOT PLACE YOU CODE AT UNSECURE LOCATION.**

**Deadline 8th December 2023, till midnight. No late submissions allowed.**

**You are required to implement a game “CatchAlphabets” with following requirements:**

* The game will start when you run your program on DOSBox.
* Clear your screen and place a box on the middle of the last row on the screen. The ASCII value for box is 0xDC. This box can be moved Left when left arrow key is pressed and Right when right arrow key on the keyboard is pressed. Hint: Hook keyboard interrupt (9h) and move the box. [20 marks]
* Characters A-Z will randomly fall for top to bottom of the screen. The subroutine to generate random number is given in the rand.asm file. The characters start falling from top of screen towards bottom of screen until it disappears. Please note that the character appears randomly in the first row and then starts falling down. At one time, there should be at least 5 characters falling down with different speeds. Hint: Hook timer interrupt (8h) and make the movement of the characters in the timer interrupt service routine. [40 marks]
* If any alphabet touches the box, it will disappear and one point will be added to the score. Display score on the right upper corner of the screen. [10 marks]
* The game is over when the box misses 10 falling alphabets 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 Left - 0x4B

Scan Code for Right – 0x4D