

COE 205, Term 092

Computer Organization & Assembly Programming

Programming Assignment# 1 Due date: Saturday, April 10, 2010

- Q.1.** Write a procedure, **VLine**, that receives an **(x, y) coordinate** of the **top point** of a line, the line length **l**, and draws a line of stars **downward**.
- Q.2.** Write a procedure, **HLine**, that receives an **(x, y) coordinate** of the **left point** of a line, the line length **l**, and draws a line of stars **to the right**.
- Q.3.** Write a procedure, **SLine1**, that receives an **(x, y) coordinate** of the **top point** of a line, the line length **l**, and draws a line of stars **downward with 45 degrees**.
- Q.4.** Write a procedure, **SLine2**, that receives an **(x, y) coordinate** of the **top point** of a line, the line length **l**, and draws a line of stars **upward with 45 degrees**.
- Q.5.** Write a procedure, **RECT**, that receives an **(x, y) coordinate** of the **top left corner** of a rectangle, the rectangle length **l** and width **W**, and draws a star filled rectangle.
- Q.6.** Write a procedure, **RAITR**, that receives an **(x, y) coordinate** of the **bottom left corner** of a right angle isosceles triangle and a **length, l**, and draws a star filled right angle isosceles triangle.
- Q.7.** Using the procedures developed in Q.1- Q.6, write an assembly program that does the following:
- (i)** Ask the user to enter a maximum object length.
 - (ii)** Ask the user to enter the number of objects to be displayed. An object includes lines, rectangles or triangles.
 - (iii)** Randomly generate a color for an object, an **(x, y) coordinate** within the maximum window size, a length and width as needed within the maximum size specified by the user. Then, Display the object, wait for 2 s and delete the displayed object. Display a number of objects as selected by the user. Make sure that the randomly generated color is not black (i.e. 0) and that the minimum randomly generated object size is 2. Your program should alternate between displaying lines, rectangles and triangles.

This assignment is to be done in groups of two. The solution should be well organized and your program should be well documented. Submit a soft copy of your solution in a zip file. Your solution should be submitted in a word file that contains the following items:

- i) Your names and IDs*
- ii) Assignment number*
- iii) Problem statement*
- iv) Your solution along with the code*
- v) Discussion of what worked and what did not work in your program. Include snapshots that demonstrate the working parts of your program. If things did not work and you attempted to solve them, mention that and write about the difficulty that you have faced.*

The soft copy should also contain both source code file (i.e. .asm) and the executable file (i.e. .exe).