Lab 6: JavaScript Client-side Canvas Drawing

ELEC Computer Networks
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Overview:

- Make on C drive of your PC files (html and js). Run the html file on the browser.
- Setup 2D canvas and draw on it.
- Manipulate a polygon based on mouse events.

- ***Do this lab as an individual*** (may consult with others, but work and demo result on your Laptop PC).

Procedure

- Make a folder for this lab on your PC (such as MyDocuments/ folder for this class). In that folder copy the start files (html and js files) from BlackBoard.
- Rename replace starter with your name or initials. Look for that same name inside the html file, and modify that line of code.
- In web browser (such as Chrome), open the html file (either click on html file or else do CNTL-O and browse for the file). The html file refers to the JavaScript file and runs it.
    - Hopefully on browser a rectangle canvas is visible with on polygon draw at it in position of (x,y) = (0,0) in pixels on the canvas. Note, (0,0) is in the upper left corner.
- Study the code so understand.
- Modify the code as follows. Always change just a few things at once, save file, and refresh the file in the browser to see the result.

- **Required Challenges:** Modify the code to have the following functions.
    - Modify code so your polygon is not a triangle. Still ensure that one vertex is at the (0,0) position.
    - Modify the size of the canvas so different from that of starter code.
    - On mouse click event in the canvas, determine the (X,Y) position of the mouse in pixels. Then translate the polygon to that position. Translate means to maintain the same size, shape and orientation, but move in X and Y directions. In other words, add the mouse X value to all X vertex value, and add the mouse Y to all Y vertex values of the polygon.
    - After translate and redraw, ensure only one polygon is visible, not also the old polygon.
- **Optional Challenges:** *To earn above a mediocre score for the lab*
    - Translate the polygon based on mouse move events, not just mouse clicks.
    - Modify the color of canvas background, lines.
    - Modify the line width.
    - Fill in the polygon with color.
    - Use images in or around the canvas.
    - Have several types of events do different things in the drawing.

Demo the functions to the instructor *(make sure any optional parts are shown)*.

- Submit to BlackBoard a document that contains
  - The Two files of the lab
    - html file
    - JavaScript file