Shettar, KiranChandrashekhar

From: Dr. Haim Levkowitz <haim@cs.uml.edu>
Sent: Sunday, March 5, 2017 07:21 PM
Subject: #comp4270s2017 #comp5460s2017 -- hw2+hw3+hw4: your next programming assignments

hw2: Due: 22-mar-2017
hw3: Due: 29-mar-2017
hw4: Due: 05-apr-2017

hw2: Drawing front, side, and top elevations

(Feel free to bring questions to next class.)

Your next assignment is about standard technical drawing configurations (also referred to as Front, Side, and Top Elevations); do it all in <svg>:

1. [80%] Draw something close to one of "my dream house" or "my dream car (front, side, top)"; feel free to be creative as long as you demonstrate at least comparable capabilities (some straight stuff, some round stuff, etc.);
2. [10%] leave space in the lower right quadrant for a future addition of a "3D" projection view (e.g., the most common for such applications is isometric, but maybe we'll get a bit more sophisticated ...);
3. ["impress me" = 10%]: here are some things you can do to earn those final 10%: save coordinates for future modeling; link matching points across elevations and "lock" their drawing so that they automatically align properly; let me manipulate attributes, such as line/fill colors, line styles; other interactive capabilities; work smartly with the DOM; you can add that 3D projection view right now, if you know how to do it .... be creative.

Due: 22-mar-2017

Don't forget: submission is

1. "submit haim 427546s2017hw2 yourCompleteCodeArchive"; then

2. this submission form.

Add features to your previous assignment (HW2, where you created drawings of Front, Top, and Side elevations), as follows:

hw3: transformations (Due: Tuesday, March 29, 2017, 11:59 pm.)

1. The ability to perform two-dimensional transformations on your Front/Top/Side elevations

[15%] Translation

[15%] Rotation

[15%] Scaling

[15%] Shearing

2. [15%] Make sure all your 2D transformations are 3D-ready for the next iteration.

3. [15%] Interactive, direct manipulations: You can get away in items #1-2 above with a simple text-based transformation parameters input. To get these extra 15% you'll need to provide interactive, direct manipulation abilities to affect these transformations.

4. [10%] Impress me! There are simple ways to do #3, and there are more elegant ways. That's one way to impress. Can you come up with other ways? Make sure to explain in your README file what, so we don't miss it.

Due: **Tuesday, March 29, 2017, 11:59 pm.**

submit haim 427546s2017hw3 <your archive, as usual>

then submit here.

HW4 (Due: Tuesday, April 5, 2017, 11:59 pm.)

Implement a "3 dimensional" projection tree (see figure).

1. [48%] create 8 different projection types of the object you used for the previous assignments. The 8 projection types are those at the leaves of the tree in the figure below (reproduced from my slides). Each one is worth 6%.

2. [16% -- 4% each type] Add 3D transformation manipulation abilities (extending those from HW3 to 3D and applying them here).

3. Add some interactivity. Let me manipulate

1. [12%] vanishing points, and see how they influence the final projection on the screen (we mentioned this in class).
2. [12%] angles of different oblique projections to see their influence on the result.

4. [12%] Impress me. Can you? Maybe link corresponding points on the object in the projections and the elevations of the previous assignment so that if points change in one, all will reflect. Or, come up with your own creative ideas. Again, make sure to tell us in your README what it is that you are trying to impress us with.

Due: Tuesday, April 5, 2017, 11:59 pm.

submit haim 427546s2017hw4 <your archive, as usual>

then submit here

FAQ
Here are some clarifications (in anticipation of some questions):

1. "Isn't the multiview orthographic projection for HW4 the same as the 2-dimensional projections we've already done in HW3?"

A: Correct. You don't have to do it again, if you have done it in HW3.

2. "I'm having a lot of trouble figuring out how to convert my 2d SVGs into a 3d picture"
A: "Converting to 3d" isn't necessarily what you want to do. You should look up the best ways to model your 3d object as a 3d object.

3. "Is SVG required in hw4 to draw 3D views?"
A: No. You can use whatever you want.

Just make sure your documentation is clear about what you used, why you chose to use it, where you got it from, whether you modified it, and all the other usual questions re who really did the work.

--
--L'Haim
Haim Levkowitz, PhD
Computer Science Department
UMass Lowell
"Writing Scientific Papers in English Successfully: Your Complete Roadmap," E. Schuster, H. Levkowitz, and O.N. Oliveira Jr., eds. (Paperback: ISBN: 978-8588533974; Kindle: ISBN: 8588533979). Available now on Amazon.com: http://www.amazon.com/Writing-Scientific-Papers-English-Successfully/dp/8588533979
http://www.cs.uml.edu/~haim
https://www.linkedin.com/in/lhaim
http://lhaim.com
http://quamobrem.com