

CSS450: Assignment 2 and Assignment 3 Question Sheet

Instructions:

- In questions where you are asked to explain, please be concise.
- Show your work when necessary, be neat, precise, and brief!
- To help us grade your assignments and return this to you in a timely fashion please:
 - Put your name and answers in the answer sheet only (separate link provided). Anything you write outside of the answer sheet **will not** be graded.
 - Provide your answers in the order of the problems.
 - Please use only one side of 8.5x11 paper.
 - Please make sure you bring a hardcopy print out **of the answer sheet (!!only!!)** to submit at the beginning of class. Please do not print out the problems.

Your assignment may not be graded if any of the above is violated, you have been warned.

Assignment 2:

1. Assuming proper AngularJS setup. In my html source code, I have the following:

```
<label ng-repeat="w in radioDetails">
  {{w.what w.yes 1b}}: <input type="radio"
    ng-model="$parent.mSelection" value={{w.what w.no 1c }}><br>
</label>
<input id="idEcho" type="text" ng-model="mSelection" 1a>

<script>
  myModule = angular.module("appEX", []);
  myModule.controller("ctrl", function ($scope) {
    $scope.mSelection = "a1";
    $scope.radioDetails = [
      {what: "a1", yes: "W1", no: "N1"},
      {what: "a2", yes: "W2", no: "N2"},
      {what: "a3", yes: "W3", no: "N3"},
      {what: "a4", yes: "W4", no: "N4"}
    ];
  });
</script>
```

In the given code, show how you will modify the code such that:

- a. The input element, *idEcho*, prints the value of the radio button being clicked.
 - b. Instead of the current label display, the labels beside each of the radio buttons show: W1, W2, W3, and W4, correspondingly.
 - c. The values returned by the clicked radio buttons become: N1, N2, N3, and N4, correspondingly.
2. Please refer to my MP2 implementation,
 - a. In the context of MVC, my application state is defined in a Model, a View, or a Controller? Another way of asking this question is, what is the component that defines, allocates, and manages the object that

represents my application state?

Controller (in almost all of our examples, model will be *hanging-off*, or defined in, the main controller)

- b. What is the name of the component for your answer in part-a?

MainCtrl

- c. In which file are the strings for the labels of Unit selection radio buttons defined in? Another way of asking this question is, if I want to display “mm” instead of “millimeter” as the label beside the corresponding radio button, which file would I need to modify?

MeasuringCore.js: The point of this question is that, the label that appears in the UI, ultimately is part of the core model.

- d. List two example variables that I have defined to represent my model.

Any two of the instance variables defined in MeasuringCore.js:

mViewModel, sUnitString, sUnitScale, sStatusMessage,
mMeasuringState, mScale, mCurrentPoint

NOTE: eMessageState and eMeasureUnit: these are NOT part of the state.

Assignment 3:

1. The output of VertexShader with x/y values in the range between min value of (a) **-1.0** and max value of (b) **+1.0** will be scan converted where the corresponding covered pixels will be switched on in the canvas. For this reason, a square defined by the vertices of (-0.5, -0.5) and (0.5, 0.5) will cover (c) **25%** percent of the entire canvas area.

The entire area is 2x2 (or 4), our square is 1x1, or ¼, or 25% of the entire area.

2. In WebGL, the main() function of the VertexShader is executed once per (a) **Vertex** while the main() function of the FragmentShader is executed once per (c) **Covered Pixel or just Pixel**. For this reason for Example 2.3: Draw One Square of the Game Engine Development book, the source code to this example is provided under Week2 for our class), given that the canvas occupies exactly 640x480 pixels, the defined VertexShader will be invoked (c) **4 (since there are only 4 vertices in the square)** number of times, while the FragmentShader will be invoked (d) **320x240=76800** number of times. Here is the link to the example:

http://faculty.washington.edu/ksung/2DGameEngine/BookChapters/Chapter2/2.3.DrawOneSquare/public_html/index.html

3. Please refer to Example 2-13, from Week2 of our class examples:
- a. In the context of Model-View-Controller, the model is defined in which component?

Controller. This is almost exactly the same question as Q2 from A2.

OK to say: **MyWorld(.js)** ←

- b. What is the variable name we used to represent the model?

mMyWorld (defined in **MainController.js**)

- c. What defines the model in this case? Or, what are the data types of the variables that define the application state?

Shader and Color

any combinations of SimpleShader, Array[4], Array-4 of integers, etc. are ok.

Must list the two items (shader and color), no partial credit.

Here is the link to the example:

http://courses.washington.edu/css450/2016.Fall/WeeklyExamples/Week2/2.13.GUI+Drawing/public_html/index.html