Winter ’14 CIS 115 Final Review

You may bring one page of notes, front and back, and a calculator.

Questions will be in short-answer format with partial credit for partial answers.

Questions will require you to read HTML and JavaScript code, but not write code.

Topics:

• All midterm topics
• Canvas: pixel coordinates; fillRect, clearRect, beginPath, closePath, lineTo, arc, fill, stroke methods
• Video: play, pause methods; currentTime property
• Postprocessing: getImageData, putImageData methods; format of pixels in ImageData data array
• Local storage: setItem, removeItem methods; accessing items
• Putting it all together: Using arrays, objects, and functions effectively.

Sample questions:

1. [10] Consider the following Javascript code:
   ```javascript
   var canvas = document.getElementById("myCanvas");
   var context = canvas.getContext("2d");
   context.fillRect(100, 100, 100, 100);
   ```
   Assuming that the canvas is 300x300 pixels, describe (and draw) what is drawn to the screen. Be specific.

2. [10] Consider the following Javascript code:
   ```javascript
   var canvas = document.getElementById("myCanvas");
   var context = canvas.getContext("2d");
   context.beginPath();
   context.arc(250, 250, 50, 0, Math.PI, false);
   context.closePath();
   context.fill();
   ```
   Assuming that the canvas is 300x300 pixels, describe (and draw) what is drawn to the screen. Be specific.

3. [10] Consider the following Javascript code:
   ```javascript
   var canvas = document.getElementById("myCanvas");
   var context = canvas.getContext("2d");
   var imageData = context.getImageData(0, 0, canvas.width, canvas.height);
   var numPixels = imageData.width*imageData.height;
   var numChannels = 4*numPixels;
   for (var i = 0; i < numChannels; i = i + 4) {
       imageData.data[i] = 0;
   }
   context.putImageData(imageData, 0, 0, canvas.width, canvas.height);
   ```
   Describe the effect that the above code would have on the canvas.

4. [10] Assume that you’re building a page which allows the user to edit a sports roster. The page contains text fields for the player’s name, jersey number, position, and points scored on the season. When the user clicks an “Add” button, the page should store (but not display) the player data currently in the text fields. When the user clicks a “Show best” button, a dialog should be displayed showing the name of the player who has scored the most points on the season. Describe how you’d implement the page in terms of arrays, objects, and functions.