Graphics Lab Answer Sheet.

Please complete this answer sheet and turn it in at the beginning of class on the due date posted in LEARN.

Part A

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| Question | Answer |
| 1  (7 pts) | The role of the array in columnY is to store the initial Y coordinate of the droplet. The ranodmInt operation ensures that all of the droplets start at different positions on the canvas. In the step() function the background and canvas are drawn, the character color is specified and a for loop is created where the variable r is going to randomly be chosen from the variable characters and draw it on the canvas. |
| 2  (7 pts) | The code creates the fading effect by specifying in the canvas element c.fillStyle the background color of black in the first three 0’s listed then that the trail opacity is to be .05. Editing the character trail opacity to 0 will leave no trail on the letters as they fall. |
| 3  (7 pts) | The line of code in the for loop that needs to be changed is  columnY[i] = randomInt(0, height);  It should be changed to this:  column[Y]=i\*12 |
| 4  (7 pts) | The line that was previously  c.fillStyle = "rgba(0,0,0,0.05)";  Now becomes  c.fillStyle = "rgba(0,0,0,10)"; |
| 5  (7 pts) | To make the droplets consist of only numbers the line that was previously  var characters = "0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!@#$%^&\*";  Now becomes  var characters = "0123456789"; |
| 6  (7 pts) | The line in the for loop that was previously  columnY[i] += pixelsPerColumn;  if (columnY[i] > height) {  columnY[i] -= height;  Now becomes  columnY[i] -= pixelsPerColumn;  if (columnY[i] < 0) {  columnY[i] += height; |

Part B

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| 7  (7pts) | Over time each star is being drawn on the canvas at a certain particular angle from the center and having a certain initial value, then follows that angle off the canvas and then resets. |
| 8  (7 pts) | You need to change the line that was previously  c.fillStyle = "#000";  To now become  c.fillStyle = "rgba(0,0,0,0.05)"; |
| 9  (14 pts) | function resetStar(star) {    star.x = width/2;    star.y = height/2;    var speed = randomFloat(.1, 5);    var angle = randomFloat(0, 2\*Math.PI);    star.dx = speed \* Math.cos(angle);    star.dy = speed \* Math.sin(angle);    star.brightness = randomFloat(2, 5);    var r = randomInt(0, characters.length);    star.char = characters.substring(r, r+1);  }  var characters = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";  c.font = "12px Courier";  var stars = [];  for (var i=0; i<500; i++) {    var star = {};    resetStar(star);    stars.push(star);  }  function step() {    c.fillStyle = "#000";    c.fillRect(0, 0, width, height);    c.lineWidth = 2;    for (var i=0; i<stars.length; i++) {      var star = stars[i];      star.x += star.dx;      star.y += star.dy;      star.brightness = Math.min(star.brightness\*1.05, 255);      var b = Math.round(star.brightness);      c.fillStyle = "rgb(" + b + "," + b + "," + b + ")";      c.fillText(star.char, star.x , star.y);      star.dx \*= 1.05;      star.dy \*= 1.05;      if (star.x < 0 || star.x > width || star.y < 0 || star.y > height) {        resetStar(star);      }    }  }  loop(step, 20); |