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

|  |  |
| --- | --- |
| Question | Answer |
| 1  (7 pts) | ColumnY stores the values of each columns Y axis. The step function ColumnY is a character for each position and if the position is higher than the height of the canvas the character is sent back to the top by subtracting the height of the canvas |
| 2  (7 pts) | The fading effect is made by the step function making the background more opaque by filling the background as the function loops |
| 3  (7 pts) | The line that needs to be changed  columnY[i] = randomInt(0, height);  What it should say for more orderly rain  column[i] = i\*pixelsPerColumn |
| 4  (7 pts) | Line to be replaced  c.fillStyle = "rgba(0,0,0,0.05)";  What it should look like  c.fillStyle= “rgb(0,0,0)” |
| 5  (7 pts) | Line to be replaced  var characters = "0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!@#$%^&\*";  What it should say  var characters = "0123456789” |
| 6  (7 pts) | Lines to be replaced  columnY[i] += pixelsPerColumn;  if (columnY[i] > height) {  columnY[i] -= height;  What they should say  column[i] -=pixelsPerColumn  If (column[i] < 0)  columnY[i] += height |

Part B

|  |  |
| --- | --- |
| 7  (7pts) | The star objects are created and given 5 values: position in x and y velocity in x and y and brightness. The step function makes the background black, starts a line segment at current x and y position then adds the components of velocity to each direction and finishes the line at the new x and y position. If the stars are off screen then it resets |
| 8  (7 pts) | Line to be changed  c.fillStyle = "#000";  What it should look like  c.fillStyle = "#0001” |
| 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); |