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) | columnY is an array that randomly assigns a size between 0 and the height of the canvas to each created column. The elements of columnY gets the pixelsPerColumn added to it. If an element of columnY is now bigger than the height, then the height is subtracted from the columnY element. |
| 2  (7 pts) | The fading rain effect is created using c.fillText, which takes three entries to alter the fading rain. These entries can affect the height that the letters/numbers fall, the amount of letters/numbers in each column as they fall, and if letters are used at all vs. letters/numbers. |
| 3  (7 pts) | columnY[i] = randomInt(0, height);  **NEW**  columnY[i] = i \* 100; |
| 4  (7 pts) | c.fillStyle = "rgba(0,0,0,0.05)";  **NEW**  c.fillStyle = "rgba(0,0,0,1)"; |
| 5  (7 pts) | var characters = "0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!@#$%^&\*";  **NEW**  var characters = "0123456789; |
| 6  (7 pts) | columnY[i] += pixelsPerColumn;  if (columnY[i] > height) {  **NEW**  columnY[i] -= pixelsPerColumn;  if (columnY[i] <= 0) { |

Part B

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| 7  (7pts) | Stars are made that start out very dim and become brighter as they are moved. Once the stars exceed the boundaries of the canvas, the stars are reset and begin again. The speed and angles of the stars are randomized to make the effect look more spontaneous. |
| 8  (7 pts) | c.fillStyle = "#000";  **NEW**  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); |