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 columnY is to generate random columns on the display. In the step() function, the elements of columnY generate random characters included letters and integers of color. |
| 2  (7 pts) | The code creates a fading rain effect, such that the rain droplets leave a trail as they fall by using the graphics canvas context in the step() function of the code. |
| 3  (7 pts) | The line of code that need to be replaced is columnY[i] = randomInt(0,height); and the new line of code would be “columnY[i] = 10 \* i;” |
| 4  (7 pts) | The line of code that need to be replaced is “c.fillStyle = "rgba(0,0,0,0.05)"; and the new line of code would be “c.fillStyle = "rgba(0,0,0,0.0)";” |
| 5  (7 pts) | The line of code that need to be replaced is “var characters = "0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!@#$%^&\*";” and the new line of code would be “var characters = "0123456789;” |
| 6  (7 pts) | The lines of code that need to be replaced:  columnY[i] += pixelsPerColumn;  if (columnY[i] > height) {  columnY[i] -= height;  the new line of code would be:  columnY[i] -= pixelsPerColumn;  if (columnY[i] < 0) {  columnY[i] += height; |

Part B

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| 7  (7pts) | The basic idea behind the animation is to visualize the space. In particular, overtime each star when it come to the endpoint it gets larger and brighter and the it is reset using the resetStar() function and its cycle starts over again. |
| 8  (7 pts) | The lines of code that need to be replaced:  c.fillStyle=”#000”;  the new line of code would be:  c.fillStyle= “rgba(0,0,0,0.05)”; |
| 9  (14 pts) | var characters = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";  c.font = "12px Courier";  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 stars = [];  for (var i=0; i<500; i++) {  var star = {};  resetStar(star);  stars.push(star);  }  function step() {  c.fillStyle = "rgba(0,0,0,1)";  c.fillRect(0, 0, width, height);  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); |