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1  /* COM1003 Java Programming
2     Autumn Semester 2018-9
3     Programming Assignment 2
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8  */
9
10 import sheffield.*;
11
12 public class Dragon {
13
14     public static void main(String[] args) {
15
16         // Set scaling variable, window dimensions, and original picture dimensions
17         final int SCALLING = 3;
18         final int WINDOW_WIDTH = 188;
19         final int WINDOW_HEIGHT = 130;
20         final int PICTURE_WIDTH = 130;
21         final int PICTURE_HEIGHT = 188;
22
23         EasyReader fileInput = new EasyReader("dragon.txt");
24
25         // Creating a scaled graphics window
26         EasyGraphics picture = new EasyGraphics(WINDOW_WIDTH * SCALLING, WINDOW_HEIGHT * SCALLING);
27
28         // creating character array for storing the encrypted picture version
29         char[][] letter = new char[PICTURE_HEIGHT][PICTURE_WIDTH];
30
31         // Read characters from the file one row at a time
32         for (int i = 0; i < letter.length; i++) {
33             for (int j = 0; j < letter[i].length; j++) {
34
35                 letter[i][j] = fileInput.readChar();
36             }
37         }
38
39         // Plots the drawing on to the canvas
40         for (int i = 0; i < letter.length; i++) {
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41     for (int j = 0; j < letter[i].length; j++) {
42
43         // if the number is even then it's represented area is coloured green for the dragon
44         if ((int) letter[i][j] % 2 == 0) {
45
46             picture.setColor(0, 255, 0);
47             picture.fillRect(i * SCALLING, j * SCALLING, SCALLING, SCALLING);
48         }
49         // if the number is odd, then it's represented area is coloured black
50         else {
51
52             picture.setColor(0, 0, 0);
53             picture.fillRect(i * SCALLING, j * SCALLING, SCALLING, SCALLING);
54         }
55     }
56 }
57
58 // minimum and maximum fire burst duration
59 int minFireTime = 1;
60 int maxFireTime = 5;
61
62 // minimum and maximum wait duration between fire bursts
63 int minWaitTime = 1;
64 int maxWaitTime = 3;
65
66 // produces 3 randomly timed fire bursts
67 for (int k = 0; k < 3; k++) {
68
69     // waits between 1 and 3 sec for the fire burst to appear
70     picture.waitSeconds(minWaitTime +
71                         (int) (Math.random() * ((maxWaitTime - minWaitTime) + 1)));
72
73     // plots the fire burst on the canvas
74     for (int i = 0; i < letter.length; i++) {
75         for (int j = 0; j < letter[i].length; j++) {
76
77             /* if the Unicode number is odd and divisible by 3
78              then number's represented area will be plotted red to make fire appear*/
79             if (((int) letter[i][j] % 3 == 0) && ((int) letter[i][j] % 2 != 0)) {
80

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81         picture.setColor(255, 0, 0);
82         picture.fillRect(i * SCALLING, j * SCALLING, SCALLING, SCALLING);
83     }
84 }
85 }
86
87 // waits between 1 and 5 sec for the fire burst to disappear
88 picture.waitSeconds(minFireTime +
89     (int) (Math.random() * ((maxFireTime - minFireTime) + 1)));
90
91 // fire burst is plotted with black and it disappears
92 for (int i = 0; i < letter.length; i++) {
93     for (int j = 0; j < letter[i].length; j++) {
94
95         /* if the Unicode number is odd and divisible by 3
96            then number's represented area will be plotted
97            black to make the fire disappear */
98         if (((int) letter[i][j] % 3 == 0) && ((int) letter[i][j] % 2 != 0)) {
99
100             picture.setColor(0, 0, 0);
101             picture.fillRect(i * SCALLING, j * SCALLING, SCALLING, SCALLING);
102         }
103     }
104 }
105 }
106 }
107 }

```