

```

1 import tkinter
2 from time import sleep
3 import random
4
5 class Window:
6     def __init__(self, xdim, ydim, scale):
7         self.root = tkinter.Tk()
8         self.canvas = tkinter.Canvas(self.root, bg="white", height=ydim*scale,
width=xdim*scale)
9         self.scale = scale
10        self.canvas.pack()
11
12        def drawPixel(self, x, y, colour):
13            s = self.scale
14            self.canvas.create_rectangle(x*s, y*s, (x+1)*s, (y+1)*s, fill=colour,
outline=colour)
15            self.canvas.pack()
16
17 global sizex, sizey, speed
18 sizex = 250
19 sizey = 150
20 speed = 0.01
21
22 win = Window(sizex,sizey,6)
23 pixels = [[0 for i in range(sizex)] for i in range(sizey)]
24
25 def updateCanvas(win, pixels):
26     win.canvas.delete("all")
27     global size
28     for y in range(sizey):
29         for x in range(sizex):
30             if pixels[y][x] == 1:
31                 win.drawPixel(x,y,"black")
32     win.root.update()
33
34 def getNeighbourCount(array, x, y):
35     global size
36     count = 0
37     if array[(y-1)%sizey][(x-1)%sizex] == 1:
38         count += 1
39     if array[(y-1)%sizey][x%sizex] == 1:
40         count += 1
41     if array[(y-1)%sizey][(x+1)%sizex] == 1:
42         count += 1
43     if array[y%sizey][(x+1)%sizex] == 1:
44         count += 1
45     if array[(y+1)%sizey][(x+1)%sizex] == 1:
46         count += 1
47     if array[(y+1)%sizey][x%sizex] == 1:
48         count += 1
49     if array[(y+1)%sizey][(x-1)%sizex] == 1:
50         count += 1
51     if array[y%sizey][(x-1)%sizex] == 1:
52         count += 1
53     return count
54
55 liveConditions = [[3],[2,3]]
56
57 pixels[5][1] = 1

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```
58 pixels[6][1] = 1
59 pixels[5][2] = 1
60 pixels[6][2] = 1
61
62 pixels[5][11] = 1
63 pixels[6][11] = 1
64 pixels[7][11] = 1
65 pixels[4][12] = 1
66 pixels[3][13] = 1
67 pixels[3][14] = 1
68 pixels[8][12] = 1
69 pixels[9][13] = 1
70 pixels[9][14] = 1
71 pixels[6][15] = 1
72 pixels[4][16] = 1
73 pixels[8][16] = 1
74 pixels[5][17] = 1
75 pixels[6][17] = 1
76 pixels[7][17] = 1
77 pixels[6][18] = 1
78
79 pixels[5][21] = 1
80 pixels[4][21] = 1
81 pixels[3][21] = 1
82 pixels[5][22] = 1
83 pixels[4][22] = 1
84 pixels[3][22] = 1
85 pixels[2][23] = 1
86 pixels[6][23] = 1
87 pixels[2][25] = 1
88 pixels[1][25] = 1
89 pixels[6][25] = 1
90 pixels[7][25] = 1
91
92 pixels[3][35] = 1
93 pixels[4][35] = 1
94 pixels[3][36] = 1
95 pixels[4][36] = 1
96
97
98 updateCanvas(win, pixels)
99 sleep(speed)
100
101 while True:
102     newPixels = [[0 for i in range(sizex)] for i in range(sizey)]
103     for y in range(sizey):
104         for x in range(sizex):
105             if getNeighbourCount(pixels, x, y) in liveConditions[pixels[y][x]]:
106                 newPixels[y][x] = 1
107     pixels = list(newPixels)
108     updateCanvas(win, pixels)
109     sleep(speed)
110
```