

```
1 from gasp import *
2 import random
3 import sys
4
5
6 class Player:
7     pass
8
9
10 class Robot:
11     pass
12
13
14 def place_thing(thing):
15     thing.x = random.randint(0, 63)
16     thing.y = random.randint(0, 47)
17
18
19 def safely_place_thing(list_of_things, is_player=False):
20     thing = Player() if is_player else Robot()
21     place_thing(thing)
22
23     while collided(thing, list_of_things):
24         place_thing(thing)
25
26     if isinstance(thing, Player):
27         thing.shape = Circle((10*thing.x+5, 10*thing.y+5), 5, filled=True)
28     else:
29         thing.shape = Box((10*thing.x, 10*thing.y), 10, 10)
30
31     return thing
32
33
34 def place_robots(numbots):
35     robots = []
36
37     while len(robots) < numbots:
38         robot = safely_place_thing(robots)
39         robot.junk = False
40         robots.append(robot)
41
42     return robots
43
44
```

```
45 def move_player(player, robots):
46     key = update_when("key_pressed")
47
48     while key in ["KP_5", "s", "k"]:
49         remove_from_screen(player.shape)
50         place_thing(player)
51         while collided(player, robots):
52             place_thing(player)
53         player.shape = Circle(
54             (10*player.x+5, 10*player.y+5), 5, filled=True
55         )
56
57     key = update_when("key_pressed")
58
59     if key in "lzm":
60         if player.x > 0:
61             player.x -= 1
62         if player.y > 0:
63             player.y -= 1
64     elif key in ["KP_2", "x", "comma"] and player.y > 0:
65         player.y -= 1
66     elif key in ["KP_3", "c", "period"]:
67         if player.x < 63:
68             player.x += 1
69         if player.y > 0:
70             player.y -= 1
71     elif key in ["KP_4", "a", "j"] and player.x > 0:
72         player.x -= 1
73     elif key in ["KP_6", "d", "l"] and player.x < 63:
74         player.x += 1
75     elif key in ["KP_7", "q", "u"]:
76         if player.x > 0:
77             player.x -= 1
78         if player.y < 47:
79             player.y += 1
80     elif key in ["KP_8", "w", "i"] and player.y < 47:
81         player.y += 1
82     elif key in ["KP_9", "r", "o"]:
83         if player.x < 63:
84             player.x += 1
85         if player.y < 47:
86             player.y += 1
87
88     move_to(player.shape, (10*player.x+5, 10*player.y+5))
89
90
91 def move_robots(robots, player):
92     for robot in robots:
93         if not robot.junk:
94             if robot.x > player.x:
95                 robot.x -= 1
96             elif robot.x < player.x:
97                 robot.x += 1
98
99             if robot.y > player.y:
100                 robot.y -= 1
101             elif robot.y < player.y:
102                 robot.y += 1
103
104             move_to(robot.shape, (10 * robot.x, 10 * robot.y))
105
106
107 def collided(thing1, list_of_things):
108     for thing2 in list_of_things:
109         if thing1 == thing2:           # things can't collide with themselves
110             continue
111         if thing1.x == thing2.x and thing1.y == thing2.y:
112             return True
113     return False
114
115
```

```
116 def still_surviving(robots):
117     for robot in robots:
118         if not robot.junk:
119             return True
120     return False
121
122
123 def check_collisions(player, robots):
124     # Handle player crashes into robot
125     if collided(player, robots):
126         Text("You've been caught!", (320, 240), size=20)
127         sleep(3)
128         clear_screen()
129         Text("Game Over", (320, 240), size=26)
130         sleep(2)
131         end_graphics()
132         sys.exit()
133
134     # Handle robots crashing into each other
135     for robot in robots:
136         if not robot.junk and collided(robot, robots):
137             robot.junk = True
138             remove_from_screen(robot.shape)
139             robot.shape = Box(
140                 (10*robot.x, 10*robot.y), 10, 10, filled=True
141             )
142
143     if not still_surviving(robots):
144         finished_level = True
145         clear_screen()
146         Text("You beat the level!", (320, 240), size=20)
147         sleep(3)
148         return True
149
150
151 begin_graphics()
152 numbots = 4
153
154 while True:
155     finished_level = False
156
157     robots = place_robots(numbots)
158     player = safely_place_thing(robots, is_player=True)
159
160     while not finished_level:
161         move_player(player, robots)
162         move_robots(robots, player)
163         finished_level = check_collisions(player, robots)
164
165     clear_screen()
166     if numbots < 17:
167         numbots *= 2
168     else:
169         Text("You win!", (280, 240), size=26)
170         sleep(3)
171         end_graphics()
172         sys.exit()
```