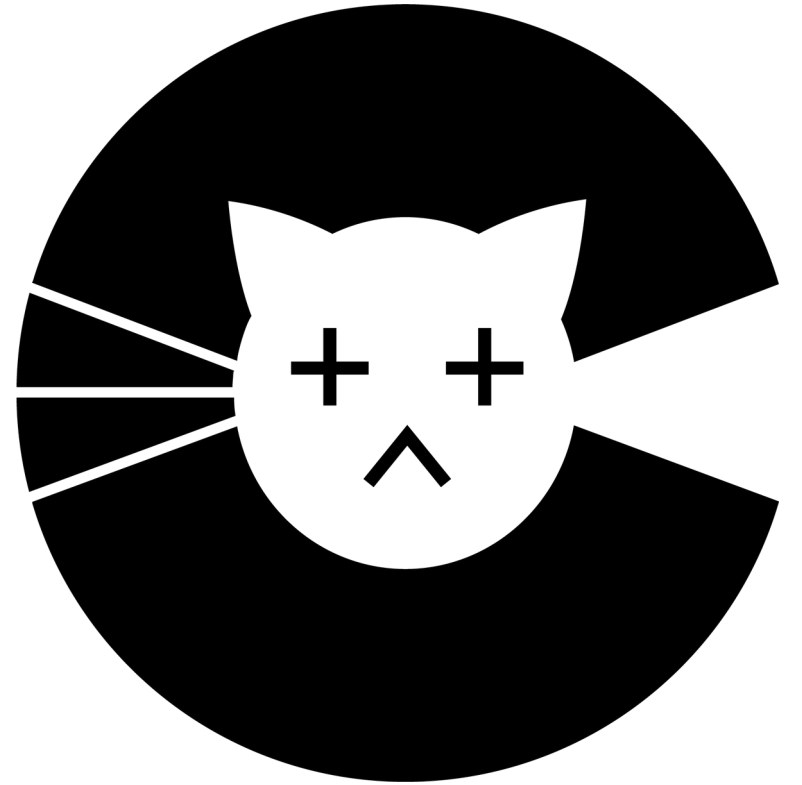


Let Them Eat Cake

Rahel Natalie Engel





OOOOOOH

SO MANY CHOICES

Illusionary Environments

”

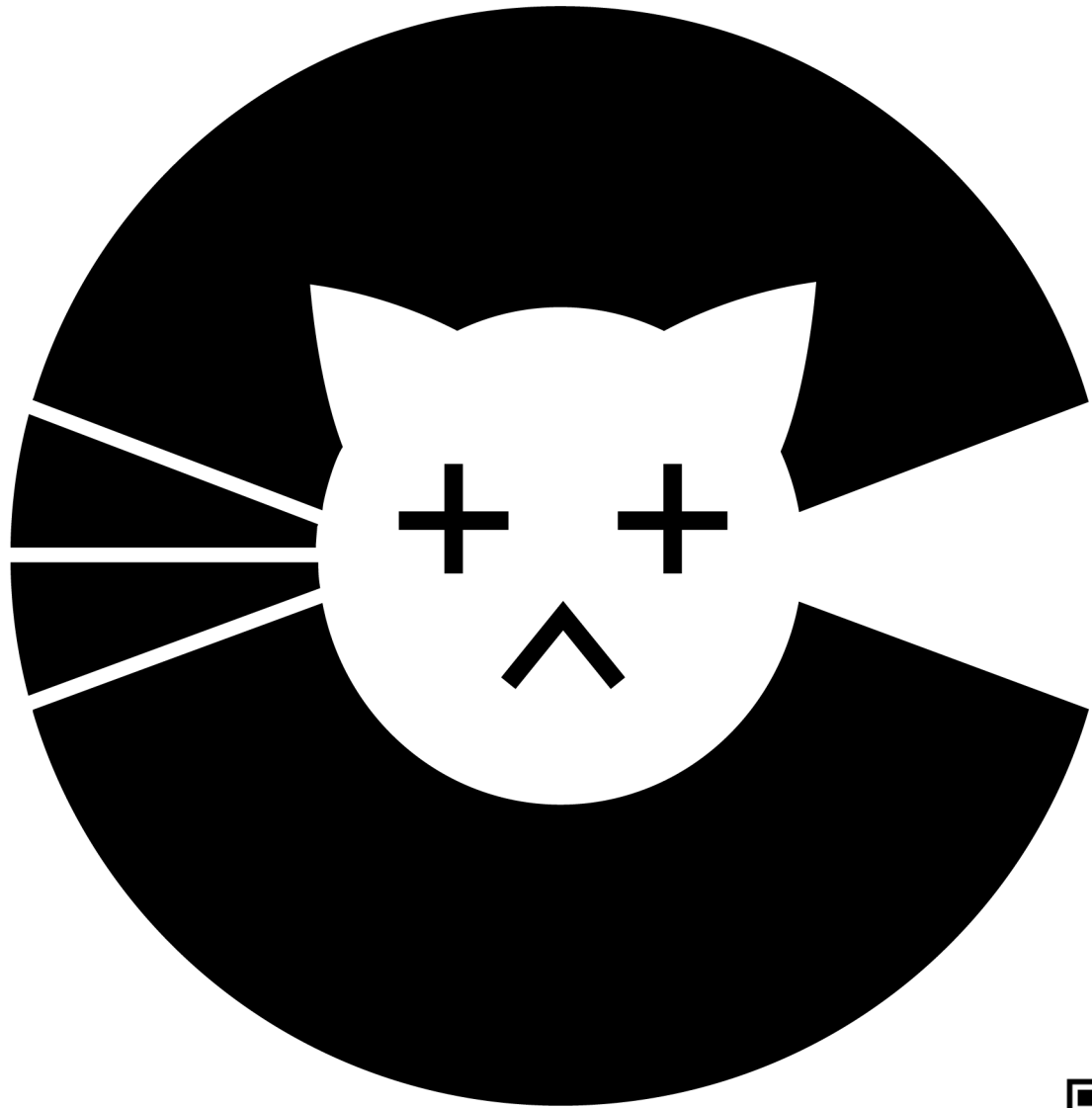
It has also been noted that students cannot grasp the concept of “real” programming with visual environments and that they feel it is more discouraging when they begin to switch into text-based programming languages after working with such **illusionary environments**.

HOW STANDARDS PROLIFERATE:

(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)



Catpie

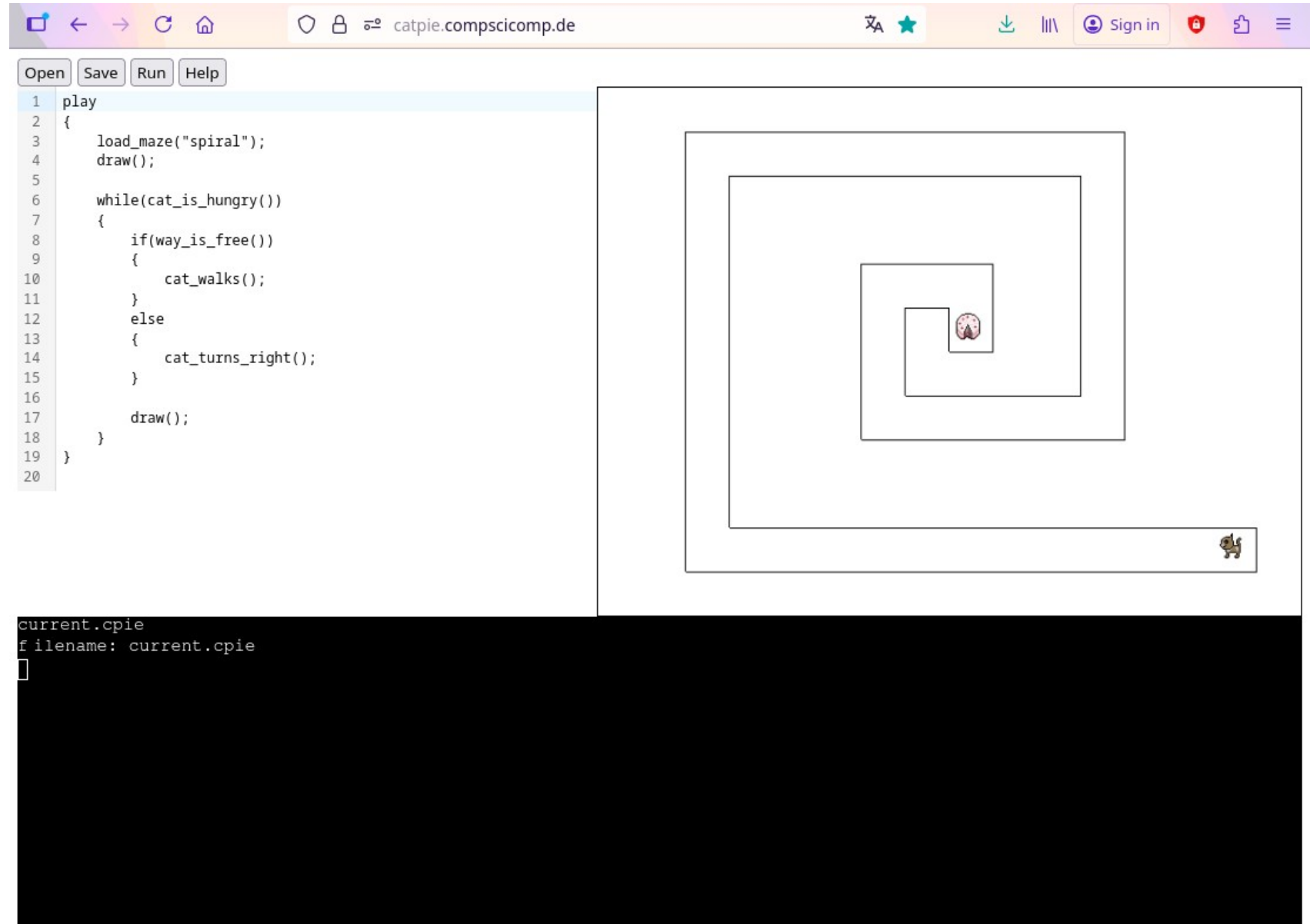


Logo by Anna Dokuchaeva



Basic Example

Using
if, while,
built-in functions



The screenshot displays a web browser window at `catpie.compsci.comp.de`. The browser's address bar and navigation icons are visible at the top. Below the browser window is a code editor with a toolbar containing 'Open', 'Save', 'Run', and 'Help' buttons. The code editor shows a Python script for a maze-solving game. The script starts with a `play` function that loads a 'spiral' maze and enters a `while` loop that continues as long as the cat is hungry. Inside the loop, it checks if the way is free; if so, the cat walks; otherwise, it turns right. The `draw()` function is called at the end of each loop iteration. To the right of the code editor is a large rectangular window showing a spiral maze. A small cat icon is positioned at the center of the spiral, and a small dog icon is at the bottom right corner of the maze. Below the code editor and maze window is a black terminal window. The terminal shows the prompt `current.cpie` followed by the command `f filename: current.cpie` and a cursor on the next line.

```
1 play
2 {
3     load_maze("spiral");
4     draw();
5
6     while(cat_is_hungry())
7     {
8         if(way_is_free())
9         {
10             cat_walks();
11         }
12         else
13         {
14             cat_turns_right();
15         }
16
17         draw();
18     }
19 }
20
```

current.cpie
f filename: current.cpie
█

Error Messages

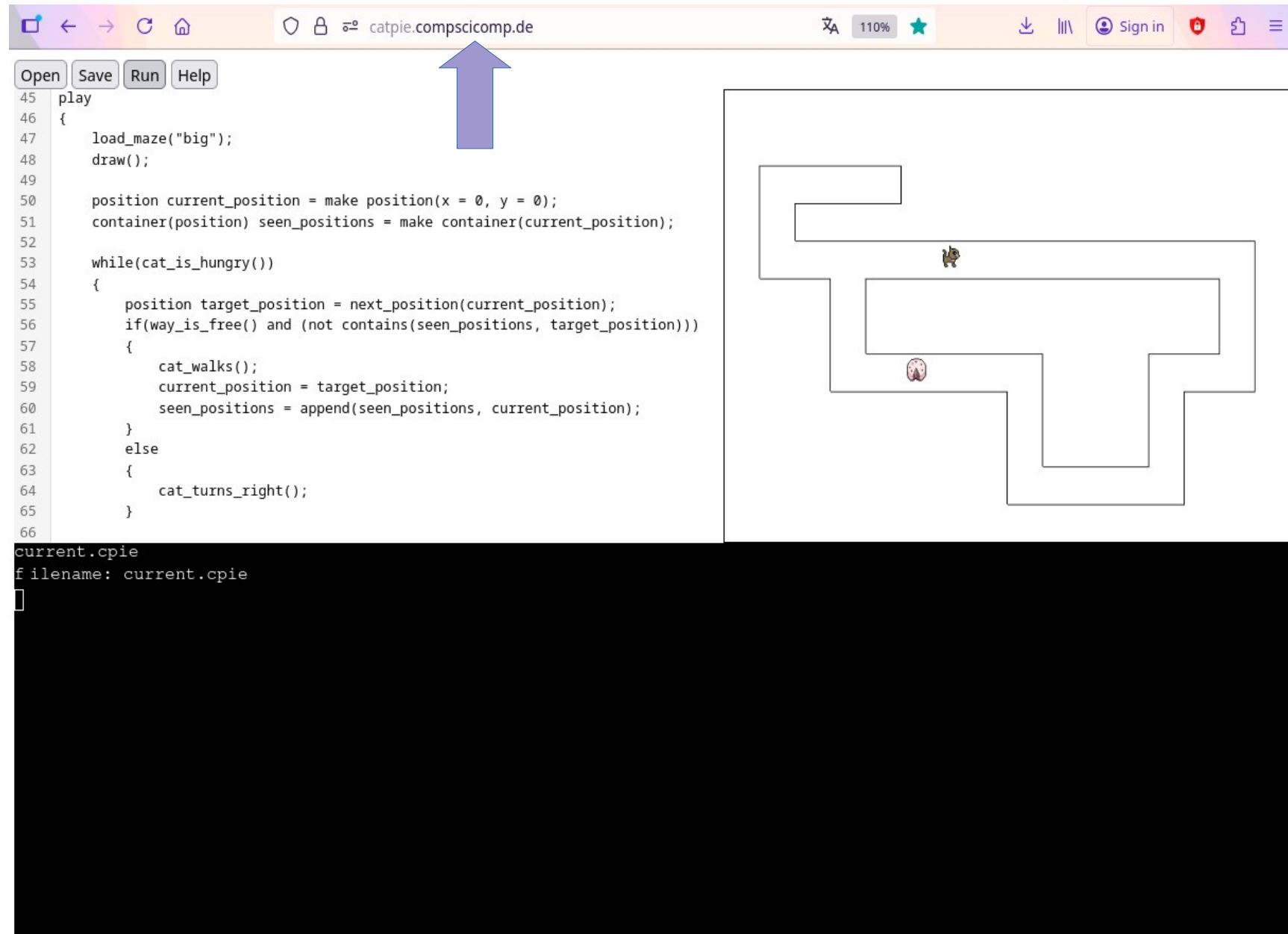
```
Open Save Run Help
1 struct position
2 {
3     int x = 0;
4     int y = 0;
5 }
6
7 play
8 {
9     position current = make (x = 2, y = 4);
10    container(position) seen = make container(current);
11 }
```

```
current.cpie
filename: current.cpie
Parser error in line 9: You used 'make' where it is not possible. You can 'make'
struct or container.
```

```
    position current = make (x = 2, y = 4);
```

```
        ^
        identifier or
        container or
        map
```

Runs In Browser



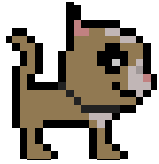
Browser address bar: catpie.compsicomp.de

Buttons: Open, Save, Run, Help

```
45 play
46 {
47     load_maze("big");
48     draw();
49
50     position current_position = make position(x = 0, y = 0);
51     container(position) seen_positions = make container(current_position);
52
53     while(cat_is_hungry())
54     {
55         position target_position = next_position(current_position);
56         if(way_is_free() and (not contains(seen_positions, target_position)))
57         {
58             cat_walks();
59             current_position = target_position;
60             seen_positions = append(seen_positions, current_position);
61         }
62         else
63         {
64             cat_turns_right();
65         }
66     }
```

current.cpie
f filename: current.cpie

Maze visualization showing a cat and a target.



Engel, Rahel Natalie; Lenk, Hannah; Greubel, André; Weber, Dorian (2025):

Cats, Code, and Concepts: Learn to Program with Catpie.

23. Fachtagung Bildungstechnologien (DELFI 2025). DOI:

10.18420/delfi2025_50. Bonn: Gesellschaft für Informatik e.V.. PISSN: 2944-7682. pp. 407-411. Demo-Beiträge. Freiberg. 8.–11. September 2025