CS 103000 Prof. Madeline Blount

Week 0



Dall-E 2: cats learning C++ in the forest on '90's technology

PARTICIPATION ACTIVITY 1.1.5: Computational thinking: Creating algorithms to draw shapes using turtle graphics.

A common way to become familiar with algorithms is called turtle graphics: You instruct a robotic turtle to walk a certain path, via instructions like "Turn left", "Walk forward 10 steps", or "Pen down" (to draw a line while walking).

The 6-instruction algorithm shown below ("Pen down", "Forward 100", etc.) draws a triangle.

- 1. Press "Run" to see the instructions execute from top to bottom, yielding a triangle.
- 2. Can you modify the instructions to draw a square? Hint: "Pen down", "Forward 100", "Left 90", "Forward 100", "Left 90"—keep going!
- 3. Experiment to see what else you can draw.

Note: The values after a Left or Right turn are angles in degrees.

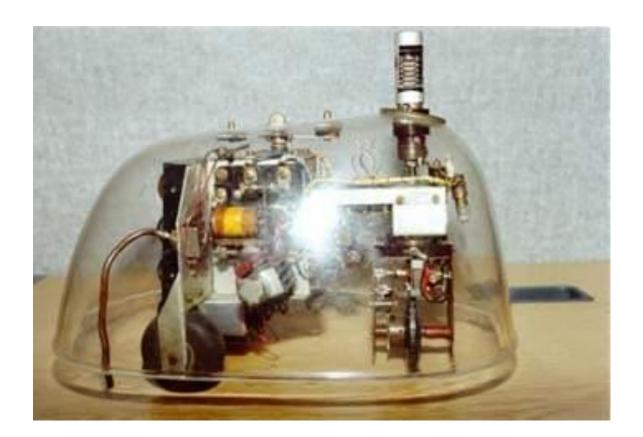
How to:

- Add an instruction: Click an orange button ("Pen up", "Pen down", "Forward", "Turn left").
- Delete an instruction: Click its "x".
- Move an instruction: Drag it up or down.



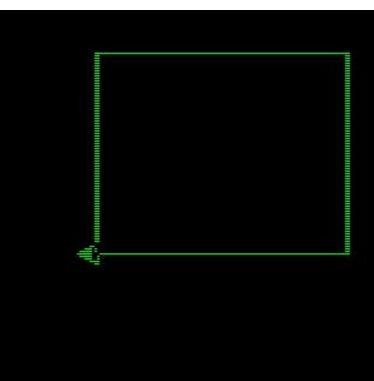
Grey Walter: 1940's, UK Elmer & Elsie

ELectro
MEchanical
Robots, Light
Sensitive



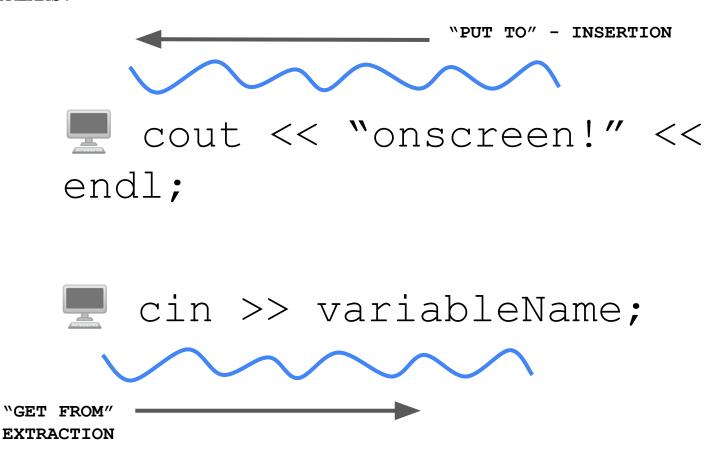


Cynthia Solomon, Wally Feurzeig, Seymour Papert, 1969 Cambridge, Mass.: LOGO





STREAMS:





Write me a program in C++ that says "hello world"



Certainly! Writing a "Hello, World!" program in C++ is straightforward. Here's a simple example:

```
cpp

#include <iostream>

int main() {
    std::cout << "Hello, World!" << std::endl;
    return 0;
}</pre>
```