

CS 103000

Prof. Madeline Blount

Week 0

hello world, cont.



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



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.

The interface consists of several components:

- Top Buttons:** Four orange buttons labeled "Pen up", "Pen down", "Forward", and "Turn left".
- Clear Button:** A blue button labeled "Clear" located to the right of the top row.
- Command List:** A vertical list of six commands in a blue box:
  - Pen down (with an 'x' to its right)
  - Forward 100 (with an 'x')
  - Left 120 (with an 'x')
  - Forward 100 (with an 'x')
  - Left 120 (with an 'x')
  - Forward 100 (with an 'x')
- Run Button:** An orange button labeled "Run" positioned above the execution area.
- Execution Area:** A large light-gray rectangular area where the turtle's path would be drawn. It currently contains a single small black dot at the center.

**Grey Walter:**  
**1940's, UK**  
**Elmer & Elsie**



**ELectro  
MEchanical  
Robots, Light  
Sensitive**



LOGO =

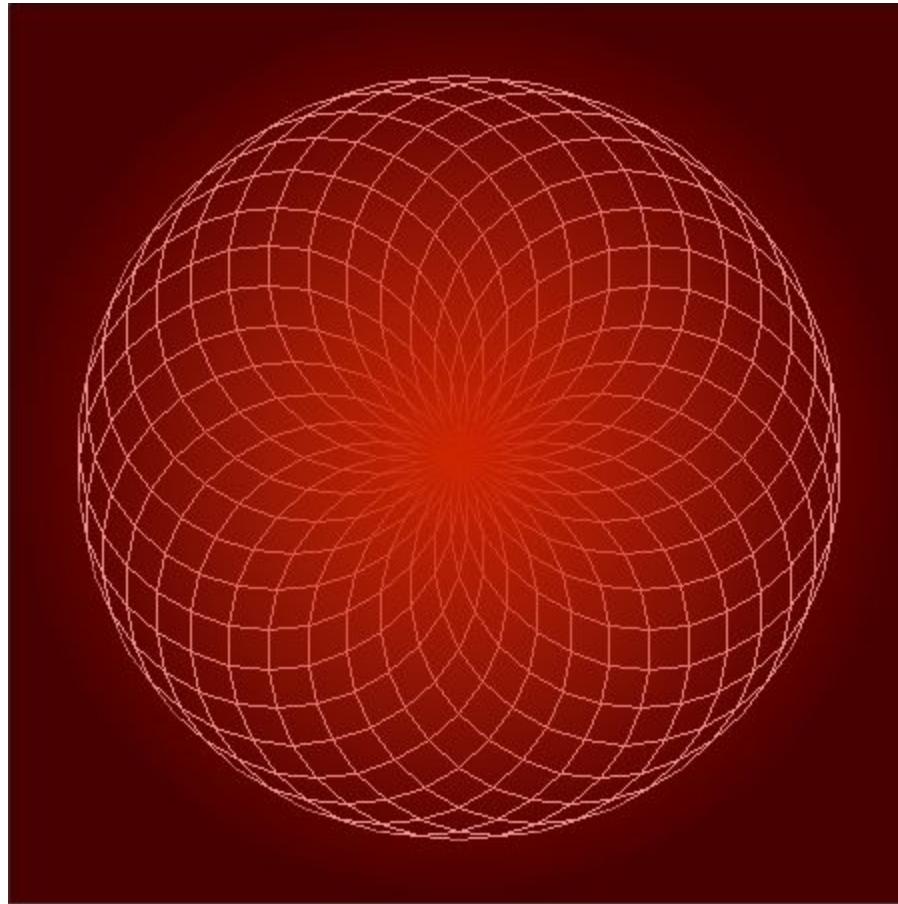
"body-syntonic"



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



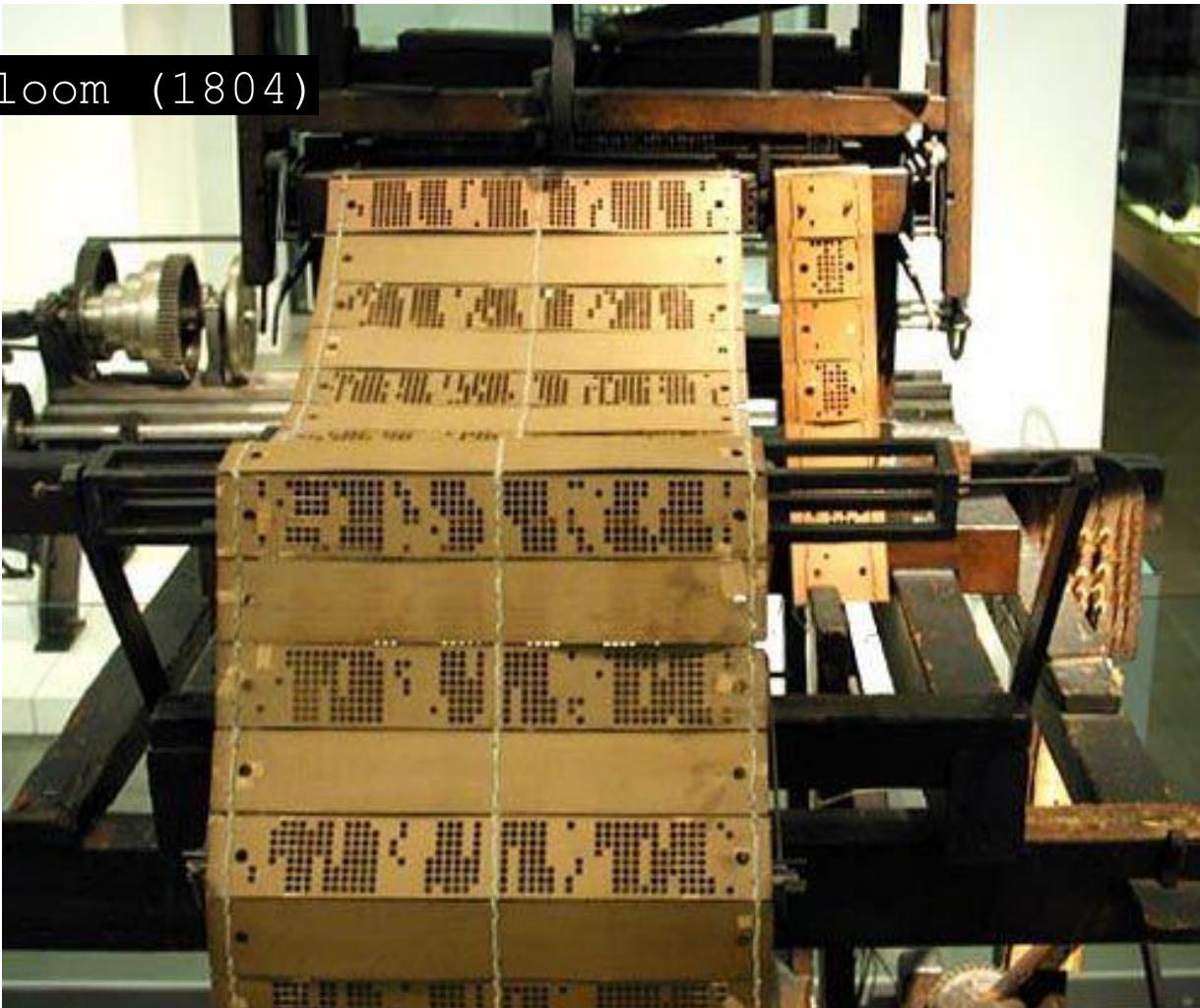
HD 100  
100%  
HDMI  
Display



textiles



Jacquard loom (1804)



## STREAMS :



"PUT TO COMPUTER" - INSERTION

cout << "onscreen!" <<  
endl;



cin >> variableName;



"GET FROM COMPUTER"  
EXTRACTION



cout = "character output"   cin = "character input"