

algorithmic

- sequence of steps that should be followed to solve a problem

→ Cooking recipe

INPUT



OUTPUT

2 eggs

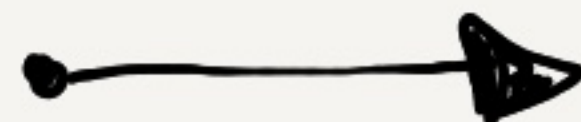
- break
- mix

- pour into hot pan
- wait until cooked

omelette

13 min

200 eggs



omelette

Complexity ≠

- time comp.
- memory / space comp.
- efficiency overall *as input ↑*
- difficulty (nb of steps)
- how it scales (when input ↑)

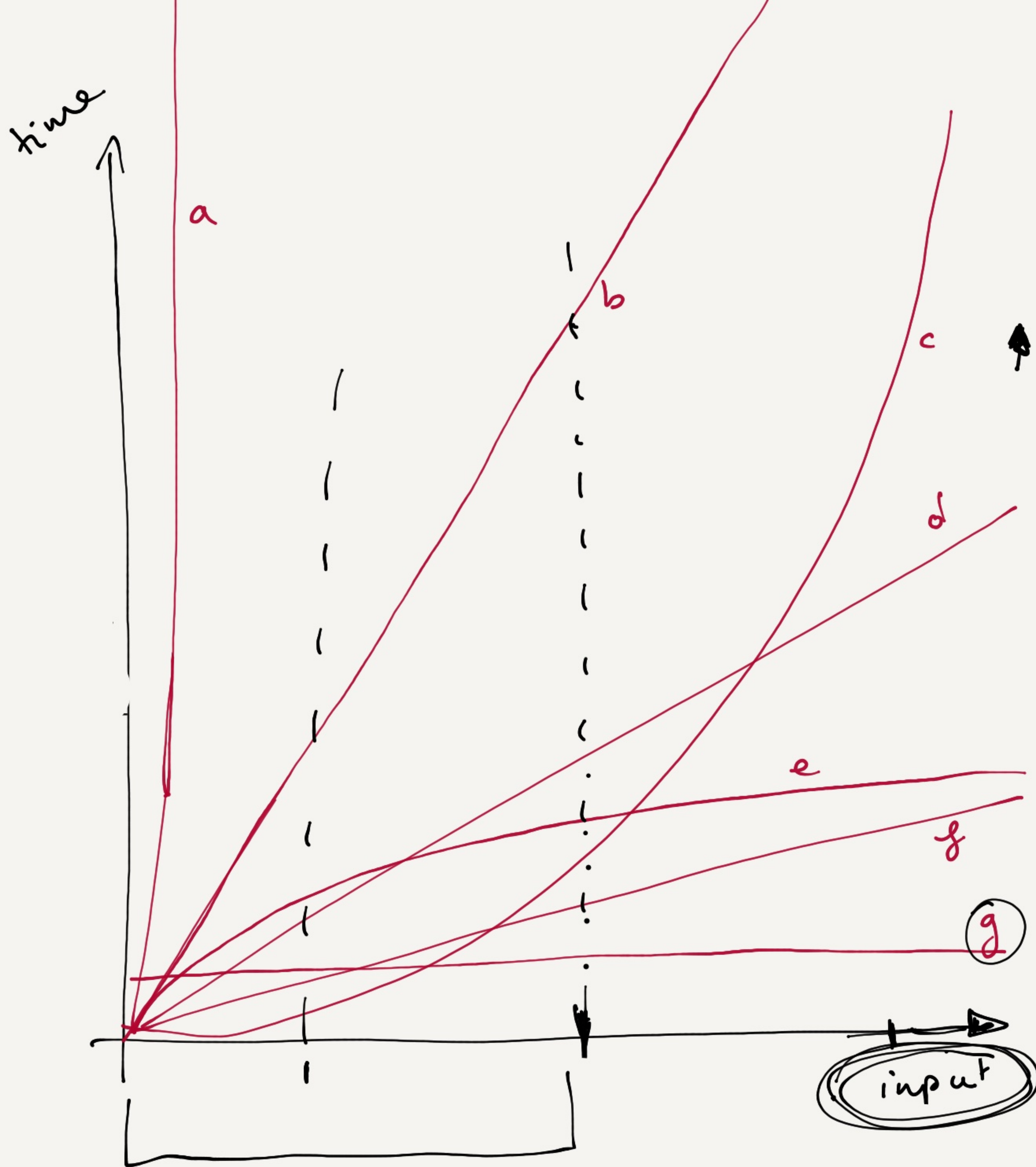
[cyclomatic complexity]
(readability)

13 * 50

$$\begin{aligned} & 13 \text{ min} \times 100 \rightarrow 1300 \text{ min} \\ & 200 \times 1 + 1 + 10 \rightarrow 211 \text{ min} \end{aligned}$$

1300 min

211 min



in order of complexity

- g • constant • $O(1)$
- e • logarithmic • $O(\log_2 n)$
- f, d, b • linear • $O(n)$
- c • quadratic • $O(n^2)$
- • cubic • $O(n^3)$
- polynomial
- a • exponential • $O(2^n)$