

490✓ (talking philosophers) Two philosophers, Socrates and Plato, are sitting in a room. Each philosopher thinks for a while, and when one of them has an interesting thought, he says it aloud, and then goes back to thinking. But they must not talk at the same time. Write a program whose execution simulates the life of these philosophers.

§ See textbook Section 8.0.

If we don't want to use probability distributions to say how long thinking and talking take and whose turn it is to speak, we can make them be functions of time.

$life \Leftarrow bothThink. SocratesTalks \neq PlatoTalks. life$

$bothThink \Leftarrow (Sthinks \parallel Pthinks). t := t + boththinktime t$

$SocratesTalks \Leftarrow (Stalks \parallel Pthinks). t := t + Stalktime t$

$PlatoTalks \Leftarrow (Ptalks \parallel Sthinks). t := t + Ptalktime t$

$SocratesTalks \neq PlatoTalks \Leftarrow \mathbf{if\ turn\ t\ then\ SocratesTalks\ else\ PlatoTalks\ fi}$