

Dining Philosophers

The Dining Philosophers is a well-known model used in operating systems to illustrate resource sharing, fairness and synchronization. There are five philosophers and five chopsticks. A philosopher must obtain the use of his left and right chopstick concurrently to be able to eat, which means two neighboring philosophers can not eat simultaneously since they share the resource, the chopstick. If he is unable to eat, he rests and thinks. Fairness is enforced by random selection of the ordering in which a philosopher picks up his chopsticks. This example serves as a demonstration of creating a metaphor on top of a Petri Net. We use the dining philosopher metaphor with places, transitions and traces. The spheres represent the places in the Petri Net. Cubes represent the control for a philosopher to pick up a chopstick or put it down. The ellipsoids connecting the places to the transitions represent the trace the chopstick takes between eating and resting.

