Devon Knudsen

Branson Hanzo

CSC 345

21 April 2019

Dining Problem Solution Explanation

Per the assignment instructions, the dining philosopher problem is a classic example of a synchronization and deadlock problem. The most common way for a deadlock to occur within this problem is, when each philosopher takes a seat at the table, they all grab either the chopstick to their left or their right. Due to there being only as many chopsticks as there are philosophers, the deadlock occurs because no one is ever able to eat.

3

2

4

0

1

We modeled our solution after the asymmetrical solution presented within the instructions. In our solution, all even numbered philosophers first pick up their right chopstick and then their left chopstick, while odd numbered philosophers pick up their left chopstick and then their right chopstick. This would cause each even philosopher and their odd neighbor to the right to go for the same chopstick. Since they are both going for the same chopstick, this leaves their other chopsticks free to either one of their neighbors, so they can eat while one of the original philosophers is still waiting. Thus, the issue of deadlocking is alleviated.

3

2

4

0

1