* Solution for Dining Philosopher Problem :

A solution of the Dining Philosophers Problem is to use a semaphore to represent a chopstick. A chopstick can be picked up by executing a wait operation on the semaphore and released by executing a signal semaphore.

The structure of the chopstick is shown below −

semaphore chopstick [5];

Initially the elements of the chopstick are initialized to 1 as the chopsticks are on the table and not picked up by a philosopher.

The structure of a random philosopher i is given as follows −

do {

wait( chopstick[i] );

wait( chopstick[ (i+1) % 5] );

. .

. EATING THE RICE

.

signal( chopstick[i] );

signal( chopstick[ (i+1) % 5] );

.

. THINKING

.

} while(1);

In the above structure, first wait operation is performed on chopstick[i] and chopstick[ (i+1) % 5]. This means that the philosopher i has picked up the chopsticks on his sides. Then the eating function is performed.

After that, signal operation is performed on chopstick[i] and chopstick[ (i+1) % 5]. This means that the philosopher i has eaten and put down the chopsticks on his sides. Then the philosopher goes back to thinking.