# OS Assignment 4

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## Implementation

The my_semaphore structure contains a value that is incremented using signal() function and decremented using wait() function.

We initialize the semaphore using init_semaphore() function in our main file.

The main c file creates a number of threads corresponding to the philosophers and has multiple semaphores used to control the behaviour.

An array of semaphores called forks denotes the forks on the table while a singular semaphore called bowls represents the 2 sauce bowls.

The 1st philosopher starts by picking up the left fork, while the other philosophers start with the right fork, this avoids deadlock.

We wait for a philosopher to gain both the forks by using the wait() function, after which he waits for the bowls. Once the bowls are acquired the philosopher can eat.

After this the philosopher puts down the bowls and the forks using signal() function, and they become free to be picked up by the other philosophers.

This keeps on looping infinitely.