**Task 1**

1. Yes I did encounter deadlock, it was resolved by dropping the left chopstick if the right one is not available. This way another philosopher would not be stuck because another philosopher is using up the resource without accomplishing anything.

**Task 2**



**Task 3**



**Task 4**

1. I experienced deadlocks when a thread was trying to send a message to a full mailbox. Another source of deadlocks was the special case of 1 mailbox in the post office. This task was different from Task 3 because the semaphore library was available for the wait and signal functions. It was simpler to perform mutual exclusion.

**Task 5**



1. The algorithm used in Task 1 is described as the pseudo-code as follow.