Phase 1 Document

In this phase we have used a total of 11 Queue and 2 Priority queue.

Orders queues

We have divided the orders, according to their type, in the waiting into 3 queue of type Order\* and 1 priority queue of type Order\*. The priority queue is for the VIP orders in the waiting and the priority is decided by an equation that we developed. And an additional queue for the VIP to help print the orders in the waiting according to their arrival time.

We added 1 queue of type Order\* for all the orders in the serving. They are sorted by time they were assigned to a cook.

We added one last queue of type Order\* for all the orders that is being served. They are sorted by the finishing time.

**Cooks queues**

The cooks that are available for serving is divided, according to their type (e.g. VIP, Normal, Vegan), into 3 queue of type Orders\*. Any cook in this queues can be assigned to an order and if they are empty, no orders will be assigned to any cook.

We added 1 priority queue for the cooks that are serving clients at the moment. Their priority is decided by the finishing time, which is the sum of the waiting time + arrival time + serving time, of the Order they are assigned to. It will help find the order that is finished easily and also will help us print the order in the serving queue sorted by the assignment time as it doesn’t interfere with the serving queue.

Lastly, we added 3 queues for the orders that are currently in a break to find which cook finishes its break without looping the whole queue.