

Semaphores

- **infoDeskAvailable**
 - Tells the info desk to accept the next customer
 - Initial value is 0
- **customerEntersWaitroom**
 - Tells the announcer that a customer has entered the wait room
 - Initial value is 0
- **customerEntersAgentline**
 - Assists with keeping track of the amount of customers in the agent line
 - Used to make sure multiple threads aren't requesting the same current customer global variable
 - Initial value is 4
- **finishedInfoDesk**
 - Customer notifies the info desk to continue because they are done
 - Initial value is 0
- **numberCalled**
 - Array of semaphores that keeps track of the given numbers for each customer
 - Size is the amount of customers
 - Initial value is 0
- **walkingToAgentLine**
 - Customer notifies announcer that they are entering the waiting line
 - Initial value is 0
- **agentAvailable**
 - Agent waits for signal from customer to begin serving the customer
 - Initial value is 0
- **agentAsks**
 - Tells the customer to take the photo and eye exam
 - Initial value is 0
- **customerFinished**
 - Tells the agent that the customer is done with photo and eye exam
 - Initial value is 0
- **giveCustomerLicense**
 - Tells the customer that the agent has given the license
 - Initial value
- **callingCustomerFromAgentLine**
 - Used to make sure that the right customer is being removed from the agent line queue
 - Initial value is 0

Pseudocode

- **InfoDesk**
 - signal(infoDeskAvailable);
 - *Give customer number*
 - wait(finishedInfoDesk);
- **Customer**
 - wait(infoDeskAvailable);
 - signal(finishedInfoDesk);
 - signal(customerEntersWaitroom);
 - *Add customer to agent line*
 - wait(customerEntersAgentline);
 - *Customer waits for number to be called*
 - signal(customerEntersAgentline);
 - signal(agentAvailable);
 - wait(agentAsks);
 - signal(customerFinished);
 - wait(giveCustomerLicense);
- **Announcer**
 - wait(customerEntersWaitroom);
 - signal(numberCalled);
 - wait(walkingToAgentLine);
- **Agent**
 - wait(agentAvailable);
 - wait(callingCustomerFromAgentLine);
 - *Customer is removed from agent line*
 - signal(callingCustomerFromAgentLine);
 - signal(agentAsks);
 - wait(customerFinished);
 - signal(giveCustomerLicense);