

CSE-344 FINAL PROJECT REPORT

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Introduction

In this project, we developed a multi-threaded application named PideShop, which simulates the entire process from receiving customer orders, preparing and baking pides, to their delivery. The application coordinates chefs who prepare and cook the pides based on incoming orders and delivery personnel who are responsible for delivering these pides to customers.

System Components and Roles

Cooks

Cooks are the primary workforce in the system, responsible for receiving and processing customer orders, preparing and cooking them. Each cook can work on only one order at a time, managing the necessary cooking time in the oven. They synchronize with oven capacities and available shovels to manage the prepared orders for delivery.

Delivery Persons

Delivery persons are responsible for delivering the prepared orders from the cooks to the customers. Each delivery person can carry up to three orders at a time. They aim to deliver orders to the customers' locations as quickly as possible, optimizing the delivery routes.

Oven

The oven is designed to bake six pides simultaneously. Cooks place the pides to be baked in the oven and remove them after the baking time is completed. The oven facilitates efficient working for cooks with two separate entries and optimizes shovel usage.

Order Queue

The order queue is a data structure where all orders from customers are stored. This structure maintains the sequence of incoming orders, allowing cooks to take orders on a first-in, first-out (FIFO) basis.

Ready Queue

The ready queue is a structure that stores orders that have been cooked and are ready for delivery. Delivery personnel fetch orders from this queue to perform their deliveries.

Shovel Pool

The shovel pool manages the limited number of shovels used by cooks to place and remove pides in and from the oven. Efficient use of shovels accelerates and optimizes the workflow of cooks, ensuring timely preparation and baking of pides.

These components work in concert to ensure the seamless operation of PideShop, from the initial order reception to the final delivery, enhancing the efficiency and responsiveness of the service.

HungerVeryMuch.c

Data Structures

- **char server_ip[16]:** Stores the IP address of the server.
- **int port:** Stores the connection port of the server.
- **int client_id:** A unique identifier for the client.
- **int order_id:** A unique identifier for the order.
- **int p, int q:** Used to determine the location coordinates of the order.
- **pid_t pid:** Process ID of the client process.

Functions

1. main() Function:

- ✓ At the start of the program, necessary arguments are taken from the user (IP address, port, number of clients, and values of p and q).
- ✓ The global_data array is dynamically allocated to consist of client_data structures for each client.
- ✓ Connection establishment, preparation of order details, and sending to the server are executed for each client.
- ✓ After the client connection is successful, an order is sent from a random location.
- ✓ After all clients have completed their tasks, the global_data array is freed.

2. `handle_signal()` Function:

- ✓ Operates in response to external signals received by the program (e.g., SIGINT).
- ✓ Using the open connection for each client, sends a cancellation (CANCEL) message to the server.
- ✓ After all connections are closed, the program terminates.

Signal Handling

- ✓ Using struct sigaction, a signal handler (`handle_signal`) is assigned for the SIGINT signal.
- ✓ When the program is interrupted with Ctrl+C, the `handle_signal` function is executed, and all active orders are cancelled.

Network Operations

- ✓ `socket()`, `connect()`, `send()`, and `close()` functions are used for establishing connections via TCP/IP to the server and for sending data.
- ✓ A separate TCP connection is opened for each client to the server, order information is sent, and the connection is closed.

This setup simply simulates multiple clients connecting to a server to place orders and canceling these orders in an emergency. Without concurrency management, each client operates as its independent process. This is useful for understanding challenges and solutions that might be encountered in real-world scenarios, especially when multiple clients try to access the same resource (server) concurrently.

PideShop.c

This project involves the development of a multi-threaded application that simulates the entire process, from receiving customer orders, to preparing and baking pitas, to delivery. This application, called PideShop, takes and processes customer orders and provides coordination between the cooks who prepare and bake the pitas and the couriers who deliver these pitas to customers.

Data Structures:

1. Cook:

- **id**: Unique identifier for each cook.
- **is_busy**: Indicates if the cook is currently preparing a meal.
- **meals_cooked**: Tracks the number of meals a cook has prepared.
- **lock**: Mutex lock to manage concurrent access to cook's properties.

2. Order:

- **id**: Unique identifier for each order.
- **random_id**: Additional identifier used for tracking within logs.
- **address**: Delivery address for the order.
- **order_id**: Mirrors id for clarity in different contexts.
- **is_cancelled**: Status to indicate if an order has been cancelled.
- **cook_id**: ID of the cook who prepares the order.
- **client_pid**: Process ID of the client who placed the order.
- **x, y**: Coordinates representing the delivery location.
- **lock**: Mutex lock for synchronous access to the order details.
- **status**: String describing the current status of the order (e.g., "Preparing", "Delivered").

3. DeliveryPerson:

- **id**: Unique identifier for each delivery person.
- **deliveries**: Count of deliveries made.
- **orders_in_bag**: Current number of orders in the delivery bag.
- **meals_delivered**: Total count of meals delivered.
- **bag**: Array storing pointers to orders currently assigned to be delivered.
- **lock, log_lock**: Mutex locks for managing access to delivery person data and logs.

4. OrderQueue and ReadyQueue:

- **orders**: Array of Order structures.
- **count**: Current number of orders in the queue.
- **lock**: Mutex for protecting access to the queue.
- **cond**: Condition variable to manage queue operations efficiently.

5. Oven:

- **meals_in_oven**: Count of meals currently in the oven.
- **lock**: Mutex to synchronize access to the oven.
- **cond_place, cond_remove**: Condition variables to manage the placement and removal of meals in/from the oven.
- **place_door_used, remove_door_used**: Flags to manage usage status of oven doors.

6. ShovelPool:

- **shovels_available**: Count of available shovels for placing and removing pizzas.
- **lock**: Mutex for accessing the shovel count.
- **cond**: Condition variable for shovel availability.

7.ThreadPoolArg:

- **id**: Worker (cook or delivery person) ID.
- **order_queue**: Pointer to the OrderQueue.
- **oven**: Pointer to the Oven.
- **shovel_pool**: Pointer to the ShovelPool.
- **ready_queue**: Pointer to the ReadyQueue.

1. handle_order(int client_sock):

- **Purpose**: This function is invoked to process incoming orders received through the server socket.
- **Process**:
 - ✓ Reads the incoming data from the socket into a buffer.
 - ✓ Parses the order details such as client ID, location coordinates, and order ID from the buffer.
 - ✓ Locks the OrderQueue to ensure thread-safe access.
 - ✓ Creates a new Order object, initializes it with the parsed data, and adds it to the OrderQueue.
 - ✓ Signals any waiting threads (potentially cooks) that a new order is available in the queue using a condition variable.
 - ✓ Releases the lock on the OrderQueue.
- **Synchronization**: Uses mutexes to protect access to the shared OrderQueue and condition variables to manage the signaling of thread states related to order availability.

2. cook_function(void *arg):

- **Purpose**: Represents the lifecycle of a cook who prepares orders.
- **Process**:
 - ✓ Continuously checks for new orders in the OrderQueue.
 - ✓ Once an available order is found, the cook marks it as being processed by setting the cook_id.

- ✓ Calculates the preparation time using the `calculate_preparation_time()` function, which simulates the time taken to prepare the meal based on a complex calculation (e.g., matrix pseudo-inverse calculation for simulation).
- ✓ Manages oven resources by checking if the oven is available for placing a new meal. If not, the cook waits until the oven is available.
- ✓ Places the meal in the oven, waits for the meal to cook (half of the preparation time), and then removes it from the oven.
- ✓ Updates the ReadyQueue with the cooked order.

- **Synchronization:**

- ✓ Mutex and condition variables are used extensively to manage access to the oven and coordinate the placing and removing of meals.
- ✓ The cook's busy status is managed through a mutex to ensure that each cook can only process one order at a time.

3. `delivery_function(void *arg):`

- **Purpose:** Manages the lifecycle of a delivery person from picking up ready orders to delivering them.
- **Process:**
 - ✓ Waits for orders to be placed in the ReadyQueue.
 - ✓ Picks up orders up to the capacity of the delivery bag.
 - ✓ Simulates the delivery process by calculating travel times based on the order's delivery coordinates.
 - ✓ Marks orders as delivered and updates the delivery person's statistics.
- **Synchronization:**
 - Uses mutexes to synchronize access to the ReadyQueue and delivery person's data (bag).
 - Uses condition variables to manage the availability of orders in the ReadyQueue and to ensure deliveries are made efficiently.

4. `log_activity(const char *activity):`

- **Purpose:** Logs activities and significant events within the system to a log file.
- **Process:**
 - ✓ Opens a file in append mode.
 - ✓ Writes the passed activity string into the file.
 - ✓ Closes the file to ensure all data is written and the file is not corrupted.
- **Synchronization:** Although not detailed in the original description, using a mutex to synchronize file access could prevent potential file write conflicts when multiple threads log simultaneously.

5. `order_processing_function()`:

- Dedicated to handling each client connection for order processing in a separate thread to improve responsiveness and manage multiple incoming requests concurrently.

6. `calculate_preparation_time()`, `calculate_travel_time()`:

- Utility functions to simulate realistic time delays for cooking and delivery based on operational and geographical parameters.

7. `setup_signal_handling()` and `handle_signal(int signal)`:

- **Purpose:** Setup and handle UNIX signals (like SIGINT for graceful shutdown).
- **Process:**
 - ✓ `setup_signal_handling()` configures the signal handler.
 - ✓ `handle_signal()` defines actions to be taken when a signal is received, such as cleaning up resources, cancelling all orders, and logging the shutdown activity.
- **Synchronization:** Ensures that cleanup operations are performed safely without leaving the system in an inconsistent state, especially when dealing with multi-threaded operations.

Test Cases:

Test-1 : `./PideShop 8080 6 6 1` and `./HungryVeryMuch 8080 25 10 20`

```
arife@LAPTOP-SRROEDP3:~/finalyeni$ ./HungryVeryMuch 8080 25 10 20
Order sent: Order from client 0 at location (4, 1) (PID 119683) (RID 464) (PID 119683)
Order sent: Order from client 1 at location (7, 3) (PID 119683) (RID 196) (PID 119683)
Order sent: Order from client 2 at location (6, 6) (PID 119683) (RID 358) (PID 119683)
Order sent: Order from client 3 at location (5, 14) (PID 119683) (RID 421) (PID 119683)
Order sent: Order from client 4 at location (4, 14) (PID 119683) (RID 177) (PID 119683)
Order sent: Order from client 5 at location (1, 7) (PID 119683) (RID 9) (PID 119683)
Order sent: Order from client 6 at location (1, 19) (PID 119683) (RID 237) (PID 119683)
Order sent: Order from client 7 at location (2, 10) (PID 119683) (RID 90) (PID 119683)
Order sent: Order from client 8 at location (1, 15) (PID 119683) (RID 58) (PID 119683)
Order sent: Order from client 9 at location (5, 16) (PID 119683) (RID 106) (PID 119683)
Order sent: Order from client 10 at location (0, 12) (PID 119683) (RID 164) (PID 119683)
Order sent: Order from client 11 at location (7, 10) (PID 119683) (RID 185) (PID 119683)
Order sent: Order from client 12 at location (4, 6) (PID 119683) (RID 428) (PID 119683)
Order sent: Order from client 13 at location (5, 3) (PID 119683) (RID 186) (PID 119683)
Order sent: Order from client 14 at location (3, 19) (PID 119683) (RID 341) (PID 119683)
Order sent: Order from client 15 at location (1, 0) (PID 119683) (RID 287) (PID 119683)
Order sent: Order from client 16 at location (7, 11) (PID 119683) (RID 154) (PID 119683)
Order sent: Order from client 17 at location (8, 15) (PID 119683) (RID 185) (PID 119683)
Order sent: Order from client 18 at location (5, 9) (PID 119683) (RID 228) (PID 119683)
Order sent: Order from client 19 at location (2, 14) (PID 119683) (RID 415) (PID 119683)
Order sent: Order from client 20 at location (5, 14) (PID 119683) (RID 363) (PID 119683)
Order sent: Order from client 21 at location (1, 1) (PID 119683) (RID 356) (PID 119683)
Order sent: Order from client 22 at location (1, 17) (PID 119683) (RID 206) (PID 119683)
Order sent: Order from client 23 at location (6, 2) (PID 119683) (RID 244) (PID 119683)
Order sent: Order from client 24 at location (8, 15) (PID 119683) (RID 100) (PID 119683)
arife@LAPTOP-SRROEDP3:~/finalyeni$
```

```
arife@LAPTOP-SRROEDP3:~/finalyeni$ ./PideShop 8080 6 6 2
PideShop active, waiting for connections...
Total customers: 25
Order from client 0 at location (4, 1) (PID 119683) (RID 464)
Order from client 1 at location (7, 3) (PID 119683) (RID 196)
Order from client 2 at location (6, 6) (PID 119683) (RID 358)
Order from client 3 at location (5, 14) (PID 119683) (RID 421)
Order from client 4 at location (4, 14) (PID 119683) (RID 177)
Order from client 5 at location (1, 7) (PID 119683) (RID 9)
Order from client 6 at location (1, 19) (PID 119683) (RID 237)
Order from client 7 at location (2, 10) (PID 119683) (RID 90)
Order from client 8 at location (1, 15) (PID 119683) (RID 58)
Order from client 9 at location (5, 16) (PID 119683) (RID 106)
Order from client 10 at location (0, 12) (PID 119683) (RID 164)
Order from client 11 at location (7, 10) (PID 119683) (RID 185)
Order from client 12 at location (4, 6) (PID 119683) (RID 428)
Order from client 13 at location (5, 3) (PID 119683) (RID 186)
Order from client 14 at location (3, 19) (PID 119683) (RID 341)
Order from client 15 at location (1, 0) (PID 119683) (RID 287)
Order from client 16 at location (7, 11) (PID 119683) (RID 154)
Order from client 17 at location (8, 15) (PID 119683) (RID 185)
Order from client 18 at location (5, 9) (PID 119683) (RID 228)
Order from client 19 at location (2, 14) (PID 119683) (RID 415)
Order from client 20 at location (5, 14) (PID 119683) (RID 363)
Order from client 21 at location (1, 1) (PID 119683) (RID 356)
Order from client 22 at location (1, 17) (PID 119683) (RID 206)
Order from client 23 at location (6, 2) (PID 119683) (RID 244)
Order from client 24 at location (8, 15) (PID 119683) (RID 100)
total_served_orders: 25
total_customers: 25
>> done serving client @ 119683 PID 119683
Thanks Cook 5 and Moto 1 , cook 5 cooked 20 meals, moto 1 delivered 11 meals
> > active waiting for connections.
```


log.txt

```
1 2024-06-15 08:07:05.207 - Cook 0 is preparing order 464
2 2024-06-15 08:07:05.208 - Cook 0 placed order 464 into the oven
3 2024-06-15 08:07:05.208 - Cook 0 took out order 464 from the oven
4 2024-06-15 08:07:05.208 - Order 464 is finished by Cook 0
5 2024-06-15 08:07:05.498 - Delivery 1 picked up order 464
6 2024-06-15 08:07:06.208 - Cook 1 is preparing order 196
7 2024-06-15 08:07:06.208 - Cook 1 placed order 196 into the oven
8 2024-06-15 08:07:06.208 - Cook 1 took out order 196 from the oven
9 2024-06-15 08:07:06.208 - Order 196 is finished by Cook 1
10 2024-06-15 08:07:06.498 - Delivery 1 picked up order 196
11 2024-06-15 08:07:07.209 - Cook 0 is preparing order 358
12 2024-06-15 08:07:07.210 - Cook 0 placed order 358 into the oven
13 2024-06-15 08:07:07.210 - Cook 0 took out order 358 from the oven
14 2024-06-15 08:07:07.210 - Order 358 is finished by Cook 0
15 2024-06-15 08:07:07.498 - Delivery 1 picked up order 358
16 2024-06-15 08:07:07.499 - Delivery 1 is delivering order 464 to (4,1)
17 2024-06-15 08:07:07.499 - Delivery 1 delivered order 464
18 2024-06-15 08:07:07.499 - Delivery 1 is delivering order 196 to (7,3)
19 2024-06-15 08:07:07.499 - Delivery 1 delivered order 196
20 2024-06-15 08:07:07.499 - Delivery 1 is delivering order 358 to (6,6)
21 2024-06-15 08:07:07.499 - Delivery 1 delivered order 358
22 2024-06-15 08:07:08.215 - Cook 3 is preparing order 421
23 2024-06-15 08:07:08.217 - Cook 3 placed order 421 into the oven
24 2024-06-15 08:07:08.217 - Cook 3 took out order 421 from the oven
25 2024-06-15 08:07:08.217 - Order 421 is finished by Cook 3
26 2024-06-15 08:07:08.499 - Delivery 0 picked up order 421
27 2024-06-15 08:07:09.216 - Cook 4 is preparing order 177
28 2024-06-15 08:07:09.217 - Cook 4 placed order 177 into the oven
29 2024-06-15 08:07:09.222 - Cook 4 took out order 177 from the oven
30 2024-06-15 08:07:09.223 - Order 177 is finished by Cook 4
31 2024-06-15 08:07:09.499 - Delivery 0 picked up order 177
32 2024-06-15 08:07:10.223 - Cook 5 is preparing order 9
33 2024-06-15 08:07:10.224 - Cook 5 placed order 9 into the oven
34 2024-06-15 08:07:10.224 - Cook 5 took out order 9 from the oven
35 2024-06-15 08:07:10.224 - Order 9 is finished by Cook 5
36 2024-06-15 08:07:10.500 - Delivery 2 picked up order 9
37 2024-06-15 08:07:11.225 - Cook 5 is preparing order 237
```

log.txt

```
38 2024-06-15 08:07:11.226 - Cook 5 placed order 237 into the oven
39 2024-06-15 08:07:11.226 - Cook 5 took out order 237 from the oven
40 2024-06-15 08:07:11.226 - Order 237 is finished by Cook 5
41 2024-06-15 08:07:11.500 - Delivery 2 picked up order 237
42 2024-06-15 08:07:12.226 - Cook 5 is preparing order 90
43 2024-06-15 08:07:12.228 - Cook 5 placed order 90 into the oven
44 2024-06-15 08:07:12.228 - Cook 5 took out order 90 from the oven
45 2024-06-15 08:07:12.228 - Order 90 is finished by Cook 5
46 2024-06-15 08:07:12.501 - Delivery 2 picked up order 90
47 2024-06-15 08:07:12.501 - Delivery 2 is delivering order 9 to (1,7)
48 2024-06-15 08:07:13.228 - Cook 5 is preparing order 58
49 2024-06-15 08:07:13.229 - Cook 5 placed order 58 into the oven
50 2024-06-15 08:07:13.229 - Cook 5 took out order 58 from the oven
51 2024-06-15 08:07:13.229 - Order 58 is finished by Cook 5
52 2024-06-15 08:07:13.501 - Delivery 2 delivered order 9
53 2024-06-15 08:07:13.501 - Delivery 2 is delivering order 237 to (1,19)
54 2024-06-15 08:07:13.501 - Delivery 1 picked up order 58
55 2024-06-15 08:07:14.230 - Cook 5 is preparing order 106
56 2024-06-15 08:07:14.230 - Cook 5 placed order 106 into the oven
57 2024-06-15 08:07:14.231 - Cook 5 took out order 106 from the oven
58 2024-06-15 08:07:14.231 - Order 106 is finished by Cook 5
59 2024-06-15 08:07:14.501 - Delivery 2 delivered order 237
60 2024-06-15 08:07:14.501 - Delivery 1 picked up order 106
61 2024-06-15 08:07:14.501 - Delivery 2 is delivering order 90 to (2,10)
62 2024-06-15 08:07:15.231 - Cook 5 is preparing order 164
63 2024-06-15 08:07:15.232 - Cook 5 placed order 164 into the oven
64 2024-06-15 08:07:15.232 - Cook 5 took out order 164 from the oven
65 2024-06-15 08:07:15.232 - Order 164 is finished by Cook 5
66 2024-06-15 08:07:15.501 - Delivery 2 delivered order 90
67 2024-06-15 08:07:15.502 - Delivery 1 picked up order 164
68 2024-06-15 08:07:15.502 - Delivery 1 is delivering order 58 to (1,15)
69 2024-06-15 08:07:16.232 - Cook 5 is preparing order 185
70 2024-06-15 08:07:16.232 - Cook 5 placed order 185 into the oven
71 2024-06-15 08:07:16.232 - Cook 5 took out order 185 from the oven
72 2024-06-15 08:07:16.232 - Order 185 is finished by Cook 5
73 2024-06-15 08:07:16.502 - Delivery 2 picked up order 185
74 2024-06-15 08:07:17.233 - Cook 5 is preparing order 428
```

log.txt

```
75 2024-06-15 08:07:17.234 - Cook 5 placed order 428 into the oven
76 2024-06-15 08:07:17.234 - Cook 5 took out order 428 from the oven
77 2024-06-15 08:07:17.234 - Order 428 is finished by Cook 5
78 2024-06-15 08:07:17.502 - Delivery 1 delivered order 58
79 2024-06-15 08:07:17.502 - Delivery 1 is delivering order 106 to (5,16)
80 2024-06-15 08:07:17.502 - Delivery 2 picked up order 428
81 2024-06-15 08:07:17.502 - Delivery 1 delivered order 106
82 2024-06-15 08:07:17.502 - Delivery 1 is delivering order 164 to (0,12)
83 2024-06-15 08:07:18.235 - Cook 5 is preparing order 186
84 2024-06-15 08:07:18.235 - Cook 5 placed order 186 into the oven
85 2024-06-15 08:07:18.235 - Cook 5 took out order 186 from the oven
86 2024-06-15 08:07:18.235 - Order 186 is finished by Cook 5
87 2024-06-15 08:07:18.503 - Delivery 5 picked up order 186
88 2024-06-15 08:07:18.503 - Delivery 1 delivered order 164
89 2024-06-15 08:07:19.236 - Cook 5 is preparing order 341
90 2024-06-15 08:07:19.236 - Cook 5 placed order 341 into the oven
91 2024-06-15 08:07:19.236 - Cook 5 took out order 341 from the oven
92 2024-06-15 08:07:19.236 - Order 341 is finished by Cook 5
93 2024-06-15 08:07:19.503 - Delivery 1 picked up order 341
94 2024-06-15 08:07:20.237 - Cook 5 is preparing order 287
95 2024-06-15 08:07:20.238 - Cook 5 placed order 287 into the oven
96 2024-06-15 08:07:20.238 - Cook 5 took out order 287 from the oven
97 2024-06-15 08:07:20.238 - Order 287 is finished by Cook 5
98 2024-06-15 08:07:20.504 - Delivery 1 picked up order 287
99 2024-06-15 08:07:21.238 - Cook 5 is preparing order 154
100 2024-06-15 08:07:21.239 - Cook 5 placed order 154 into the oven
101 2024-06-15 08:07:21.239 - Cook 5 took out order 154 from the oven
102 2024-06-15 08:07:21.239 - Order 154 is finished by Cook 5
103 2024-06-15 08:07:21.504 - Delivery 1 picked up order 154
104 2024-06-15 08:07:21.504 - Delivery 1 is delivering order 341 to (3,19)
105 2024-06-15 08:07:22.239 - Cook 5 is preparing order 185
106 2024-06-15 08:07:22.240 - Cook 5 placed order 185 into the oven
107 2024-06-15 08:07:22.240 - Cook 5 took out order 185 from the oven
108 2024-06-15 08:07:22.240 - Order 185 is finished by Cook 5
109 2024-06-15 08:07:22.504 - Delivery 0 picked up order 185
110 2024-06-15 08:07:22.505 - Delivery 0 is delivering order 421 to (5,14)
111 2024-06-15 08:07:23.240 - Cook 5 is preparing order 228
```

log.txt

```
111 2024-06-15 08:07:23.240 - Cook 5 is preparing order 228
112 2024-06-15 08:07:23.241 - Cook 5 placed order 228 into the oven
113 2024-06-15 08:07:23.241 - Cook 5 took out order 228 from the oven
114 2024-06-15 08:07:23.241 - Order 228 is finished by Cook 5
115 2024-06-15 08:07:23.504 - Delivery 1 delivered order 341
116 2024-06-15 08:07:23.505 - Delivery 1 is delivering order 287 to (1,0)
117 2024-06-15 08:07:23.505 - Delivery 2 picked up order 228
118 2024-06-15 08:07:23.505 - Delivery 2 is delivering order 185 to (7,10)
119 2024-06-15 08:07:24.241 - Cook 5 is preparing order 415
120 2024-06-15 08:07:24.242 - Cook 5 placed order 415 into the oven
121 2024-06-15 08:07:24.242 - Cook 5 took out order 415 from the oven
122 2024-06-15 08:07:24.242 - Order 415 is finished by Cook 5
123 2024-06-15 08:07:24.505 - Delivery 0 delivered order 421
124 2024-06-15 08:07:24.505 - Delivery 0 is delivering order 177 to (4,14)
125 2024-06-15 08:07:24.505 - Delivery 5 picked up order 415
126 2024-06-15 08:07:24.505 - Delivery 0 delivered order 177
127 2024-06-15 08:07:24.505 - Delivery 0 is delivering order 185 to (8,15)
128 2024-06-15 08:07:24.505 - Delivery 0 delivered order 185
129 2024-06-15 08:07:25.242 - Cook 5 is preparing order 363
130 2024-06-15 08:07:25.243 - Cook 5 placed order 363 into the oven
131 2024-06-15 08:07:25.243 - Cook 5 took out order 363 from the oven
132 2024-06-15 08:07:25.243 - Order 363 is finished by Cook 5
133 2024-06-15 08:07:25.505 - Delivery 1 delivered order 287
134 2024-06-15 08:07:25.505 - Delivery 1 is delivering order 154 to (7,11)
135 2024-06-15 08:07:25.505 - Delivery 2 delivered order 185
136 2024-06-15 08:07:25.505 - Delivery 2 is delivering order 428 to (4,6)
137 2024-06-15 08:07:25.505 - Delivery 2 delivered order 428
138 2024-06-15 08:07:25.505 - Delivery 2 is delivering order 228 to (5,9)
139 2024-06-15 08:07:25.505 - Delivery 5 picked up order 363
140 2024-06-15 08:07:25.505 - Delivery 5 is delivering order 186 to (5,3)
141 2024-06-15 08:07:25.505 - Delivery 2 delivered order 228
142 2024-06-15 08:07:26.243 - Cook 5 is preparing order 356
143 2024-06-15 08:07:26.244 - Cook 5 placed order 356 into the oven
144 2024-06-15 08:07:26.244 - Cook 5 took out order 356 from the oven
145 2024-06-15 08:07:26.244 - Order 356 is finished by Cook 5
146 2024-06-15 08:07:26.506 - Delivery 5 delivered order 186
147 2024-06-15 08:07:26.506 - Delivery 5 is delivering order 415 to (2,14)
148 2024-06-15 08:07:26.506 - Delivery 2 picked up order 356
```

```

143 2024-06-15 08:07:26.244 - Cook 5 placed order 356 into the oven
144 2024-06-15 08:07:26.244 - Cook 5 took out order 356 from the oven
145 2024-06-15 08:07:26.244 - Order 356 is finished by Cook 5
146 2024-06-15 08:07:26.506 - Delivery 5 delivered order 186
147 2024-06-15 08:07:26.506 - Delivery 5 is delivering order 415 to (2,14)
148 2024-06-15 08:07:26.506 - Delivery 2 picked up order 356
149 2024-06-15 08:07:27.244 - Cook 5 is preparing order 206
150 2024-06-15 08:07:27.246 - Cook 5 placed order 206 into the oven
151 2024-06-15 08:07:27.246 - Cook 5 took out order 206 from the oven
152 2024-06-15 08:07:27.246 - Order 206 is finished by Cook 5
153 2024-06-15 08:07:27.505 - Delivery 1 delivered order 154
154 2024-06-15 08:07:27.506 - Delivery 5 delivered order 415
155 2024-06-15 08:07:27.506 - Delivery 5 is delivering order 363 to (5,14)
156 2024-06-15 08:07:27.506 - Delivery 2 picked up order 206
157 2024-06-15 08:07:27.506 - Delivery 5 delivered order 363
158 2024-06-15 08:07:28.246 - Cook 5 is preparing order 244
159 2024-06-15 08:07:28.248 - Cook 5 placed order 244 into the oven
160 2024-06-15 08:07:28.248 - Cook 5 took out order 244 from the oven
161 2024-06-15 08:07:28.248 - Order 244 is finished by Cook 5
162 2024-06-15 08:07:28.505 - Delivery 1 picked up order 244
163 2024-06-15 08:07:29.248 - Cook 5 is preparing order 100
164 2024-06-15 08:07:29.250 - Cook 5 placed order 100 into the oven
165 2024-06-15 08:07:29.255 - Cook 5 took out order 100 from the oven
166 2024-06-15 08:07:29.255 - Order 100 is finished by Cook 5
167 2024-06-15 08:07:29.506 - Delivery 1 picked up order 100
168 2024-06-15 08:07:42.510 - Delivery 2 is delivering order 356 to (1,1)
169 2024-06-15 08:07:42.510 - Delivery 2 delivered order 356
170 2024-06-15 08:07:42.510 - Delivery 2 is delivering order 206 to (1,17)
171 2024-06-15 08:07:44.511 - Delivery 2 delivered order 206
172 2024-06-15 08:07:44.511 - Delivery 1 is delivering order 244 to (6,2)
173 2024-06-15 08:07:45.511 - Delivery 1 delivered order 244
174 2024-06-15 08:07:45.511 - Delivery 1 is delivering order 100 to (8,15)
175 2024-06-15 08:07:46.511 - Delivery 1 delivered order 100
176 > > active waiting for connections.

```

Test-2: ./PideShop 8080 12 12 3 and ./HungryVeryMuch 8080 100 10 20

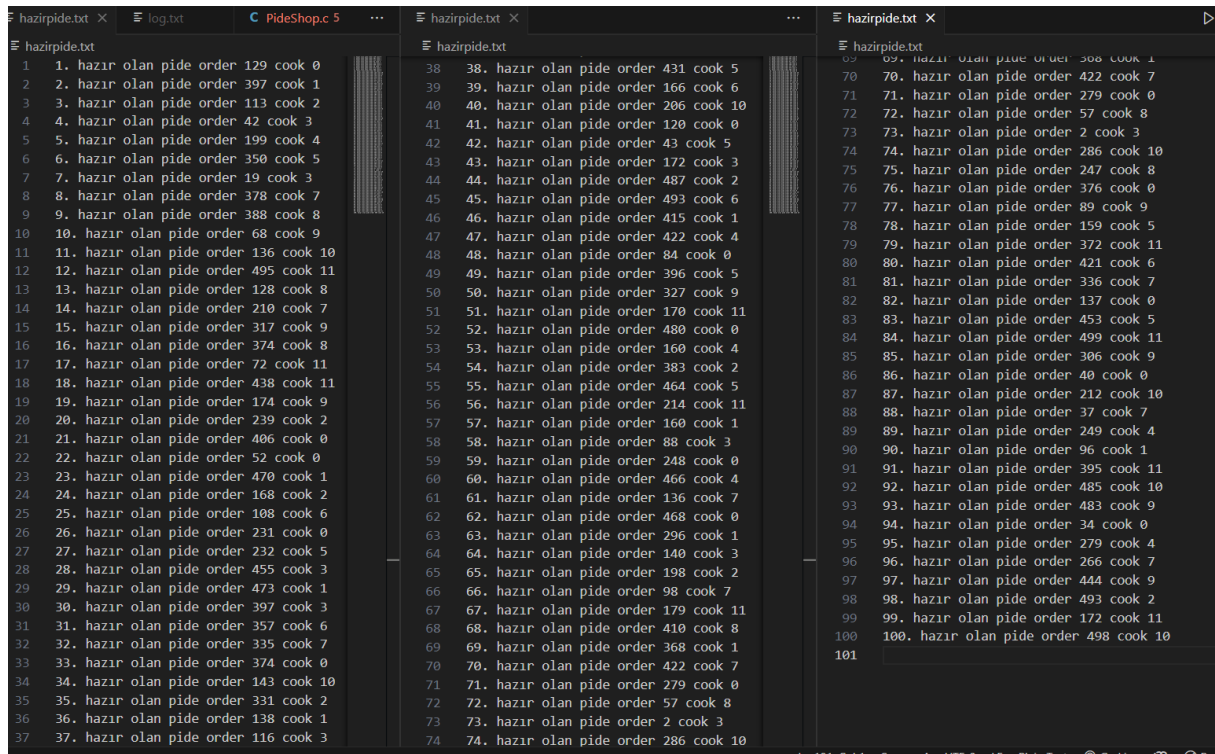
```

arife@LAPTOP-SRROEDP3:~/finalyeni$ ./PideShop 8080 12 12 3
PideShop active, waiting for connections...
Total customers: 100
Order from client 0 at location (1, 19) (PID 123162) (RID 129)
Order from client 1 at location (9, 13) (PID 123162) (RID 397)
Order from client 2 at location (8, 10) (PID 123162) (RID 113)
Order from client 3 at location (0, 6) (PID 123162) (RID 42)
Order from client 4 at location (3, 5) (PID 123162) (RID 199)
Order from client 5 at location (7, 6) (PID 123162) (RID 350)
Order from client 6 at location (0, 6) (PID 123162) (RID 19)
Order from client 7 at location (5, 3) (PID 123162) (RID 378)
Order from client 8 at location (5, 5) (PID 123162) (RID 388)
Order from client 9 at location (5, 15) (PID 123162) (RID 68)
Order from client 10 at location (5, 6) (PID 123162) (RID 136)
Order from client 11 at location (3, 17) (PID 123162) (RID 495)
Order from client 12 at location (6, 6) (PID 123162) (RID 128)
Order from client 13 at location (9, 8) (PID 123162) (RID 210)
Order from client 14 at location (8, 3) (PID 123162) (RID 317)
Order from client 15 at location (9, 0) (PID 123162) (RID 374)
Order from client 16 at location (7, 11) (PID 123162) (RID 72)
Order from client 17 at location (7, 6) (PID 123162) (RID 438)
Order from client 18 at location (6, 3) (PID 123162) (RID 174)
Order from client 19 at location (3, 8) (PID 123162) (RID 239)
Order from client 20 at location (8, 5) (PID 123162) (RID 406)
Order from client 21 at location (4, 19) (PID 123162) (RID 52)
Order from client 22 at location (4, 17) (PID 123162) (RID 470)
Order from client 23 at location (3, 16) (PID 123162) (RID 168)
Order from client 24 at location (1, 6) (PID 123162) (RID 108)
Order from client 25 at location (4, 6) (PID 123162) (RID 231)
Order from client 26 at location (6, 15) (PID 123162) (RID 232)
Order from client 27 at location (5, 2) (PID 123162) (RID 455)
Order from client 28 at location (0, 8) (PID 123162) (RID 473)
Order from client 29 at location (1, 2) (PID 123162) (RID 397)
Order from client 30 at location (6, 2) (PID 123162) (RID 357)
Order from client 31 at location (0, 17) (PID 123162) (RID 335)
Order from client 32 at location (1, 3) (PID 123162) (RID 374)
Order from client 33 at location (8, 6) (PID 123162) (RID 143)
Order from client 34 at location (7, 10) (PID 123162) (RID 331)
Order from client 35 at location (7, 6) (PID 123162) (RID 138)
Order from client 36 at location (8, 2) (PID 123162) (RID 116)

arife@LAPTOP-SRROEDP3:~/finalyeni$ ./HungryVeryMuch 8080 100 10 20
Order sent: Order from client 0 at location (1, 19) (PID 123162) (RID 129) (PID 123162)
Order sent: Order from client 1 at location (9, 13) (PID 123162) (RID 397) (PID 123162)
Order sent: Order from client 2 at location (8, 10) (PID 123162) (RID 113) (PID 123162)
Order sent: Order from client 3 at location (0, 6) (PID 123162) (RID 42) (PID 123162)
Order sent: Order from client 4 at location (3, 5) (PID 123162) (RID 199) (PID 123162)
Order sent: Order from client 5 at location (7, 6) (PID 123162) (RID 350) (PID 123162)
Order sent: Order from client 6 at location (0, 6) (PID 123162) (RID 19) (PID 123162)
Order sent: Order from client 7 at location (5, 3) (PID 123162) (RID 378) (PID 123162)
Order sent: Order from client 8 at location (5, 5) (PID 123162) (RID 388) (PID 123162)
Order sent: Order from client 9 at location (5, 15) (PID 123162) (RID 68) (PID 123162)
Order sent: Order from client 10 at location (5, 6) (PID 123162) (RID 136) (PID 123162)
Order sent: Order from client 11 at location (3, 17) (PID 123162) (RID 495) (PID 123162)
Order sent: Order from client 12 at location (6, 6) (PID 123162) (RID 128) (PID 123162)
Order sent: Order from client 13 at location (9, 8) (PID 123162) (RID 210) (PID 123162)
Order sent: Order from client 14 at location (8, 3) (PID 123162) (RID 317) (PID 123162)
Order sent: Order from client 15 at location (9, 0) (PID 123162) (RID 374) (PID 123162)
Order sent: Order from client 16 at location (7, 11) (PID 123162) (RID 72) (PID 123162)
Order sent: Order from client 17 at location (7, 6) (PID 123162) (RID 438) (PID 123162)
Order sent: Order from client 18 at location (6, 3) (PID 123162) (RID 174) (PID 123162)
Order sent: Order from client 19 at location (3, 8) (PID 123162) (RID 239) (PID 123162)
Order sent: Order from client 20 at location (8, 5) (PID 123162) (RID 406) (PID 123162)
Order sent: Order from client 21 at location (4, 19) (PID 123162) (RID 52) (PID 123162)
Order sent: Order from client 22 at location (4, 17) (PID 123162) (RID 470) (PID 123162)
Order sent: Order from client 23 at location (3, 16) (PID 123162) (RID 168) (PID 123162)
Order sent: Order from client 24 at location (1, 6) (PID 123162) (RID 108) (PID 123162)
Order sent: Order from client 25 at location (4, 6) (PID 123162) (RID 231) (PID 123162)
Order sent: Order from client 26 at location (6, 15) (PID 123162) (RID 232) (PID 123162)
Order sent: Order from client 27 at location (5, 2) (PID 123162) (RID 455) (PID 123162)
Order sent: Order from client 28 at location (0, 8) (PID 123162) (RID 473) (PID 123162)
Order sent: Order from client 29 at location (1, 2) (PID 123162) (RID 397) (PID 123162)
Order sent: Order from client 30 at location (6, 2) (PID 123162) (RID 357) (PID 123162)
Order sent: Order from client 31 at location (0, 17) (PID 123162) (RID 335) (PID 123162)
Order sent: Order from client 32 at location (1, 3) (PID 123162) (RID 374) (PID 123162)
Order sent: Order from client 33 at location (8, 6) (PID 123162) (RID 143) (PID 123162)
Order sent: Order from client 34 at location (7, 10) (PID 123162) (RID 331) (PID 123162)
Order sent: Order from client 35 at location (7, 6) (PID 123162) (RID 138) (PID 123162)
Order sent: Order from client 36 at location (8, 2) (PID 123162) (RID 116) (PID 123162)
Order sent: Order from client 37 at location (2, 0) (PID 123162) (RID 431) (PID 123162)
Order sent: Order from client 38 at location (5, 10) (PID 123162) (RID 166) (PID 123162)

```


The log.txt file is very long so I did not put it in pdf
Image of the ready-made pita.txt file, in which I list the
prepared pitas, unlike log.txt



```
hazirpide.txt
1 1. hazır olan pide order 129 cook 0
2 2. hazır olan pide order 397 cook 1
3 3. hazır olan pide order 113 cook 2
4 4. hazır olan pide order 42 cook 3
5 5. hazır olan pide order 199 cook 4
6 6. hazır olan pide order 350 cook 5
7 7. hazır olan pide order 19 cook 3
8 8. hazır olan pide order 378 cook 7
9 9. hazır olan pide order 388 cook 8
10 10. hazır olan pide order 68 cook 9
11 11. hazır olan pide order 136 cook 10
12 12. hazır olan pide order 495 cook 11
13 13. hazır olan pide order 128 cook 8
14 14. hazır olan pide order 210 cook 7
15 15. hazır olan pide order 317 cook 9
16 16. hazır olan pide order 374 cook 8
17 17. hazır olan pide order 72 cook 11
18 18. hazır olan pide order 438 cook 11
19 19. hazır olan pide order 174 cook 9
20 20. hazır olan pide order 239 cook 2
21 21. hazır olan pide order 406 cook 0
22 22. hazır olan pide order 52 cook 0
23 23. hazır olan pide order 470 cook 1
24 24. hazır olan pide order 168 cook 2
25 25. hazır olan pide order 108 cook 6
26 26. hazır olan pide order 231 cook 0
27 27. hazır olan pide order 232 cook 5
28 28. hazır olan pide order 455 cook 3
29 29. hazır olan pide order 473 cook 1
30 30. hazır olan pide order 397 cook 3
31 31. hazır olan pide order 357 cook 6
32 32. hazır olan pide order 335 cook 7
33 33. hazır olan pide order 374 cook 0
34 34. hazır olan pide order 143 cook 10
35 35. hazır olan pide order 331 cook 2
36 36. hazır olan pide order 138 cook 1
37 37. hazır olan pide order 116 cook 3

hazirpide.txt
38 38. hazır olan pide order 431 cook 5
39 39. hazır olan pide order 166 cook 6
40 40. hazır olan pide order 206 cook 10
41 41. hazır olan pide order 120 cook 0
42 42. hazır olan pide order 43 cook 5
43 43. hazır olan pide order 172 cook 3
44 44. hazır olan pide order 487 cook 2
45 45. hazır olan pide order 493 cook 6
46 46. hazır olan pide order 415 cook 1
47 47. hazır olan pide order 422 cook 4
48 48. hazır olan pide order 84 cook 0
49 49. hazır olan pide order 396 cook 5
50 50. hazır olan pide order 327 cook 9
51 51. hazır olan pide order 170 cook 11
52 52. hazır olan pide order 480 cook 0
53 53. hazır olan pide order 160 cook 4
54 54. hazır olan pide order 383 cook 2
55 55. hazır olan pide order 464 cook 5
56 56. hazır olan pide order 214 cook 11
57 57. hazır olan pide order 160 cook 1
58 58. hazır olan pide order 88 cook 3
59 59. hazır olan pide order 248 cook 0
60 60. hazır olan pide order 466 cook 4
61 61. hazır olan pide order 136 cook 7
62 62. hazır olan pide order 468 cook 0
63 63. hazır olan pide order 296 cook 1
64 64. hazır olan pide order 140 cook 3
65 65. hazır olan pide order 198 cook 2
66 66. hazır olan pide order 98 cook 7
67 67. hazır olan pide order 179 cook 11
68 68. hazır olan pide order 410 cook 8
69 69. hazır olan pide order 368 cook 1
70 70. hazır olan pide order 422 cook 7
71 71. hazır olan pide order 279 cook 0
72 72. hazır olan pide order 57 cook 8
73 73. hazır olan pide order 2 cook 3
74 74. hazır olan pide order 286 cook 10

hazirpide.txt
69 69. hazır olan pide order 308 cook 1
70 70. hazır olan pide order 422 cook 7
71 71. hazır olan pide order 279 cook 0
72 72. hazır olan pide order 57 cook 8
73 73. hazır olan pide order 2 cook 3
74 74. hazır olan pide order 286 cook 10
75 75. hazır olan pide order 247 cook 8
76 76. hazır olan pide order 376 cook 0
77 77. hazır olan pide order 89 cook 9
78 78. hazır olan pide order 159 cook 5
79 79. hazır olan pide order 372 cook 11
80 80. hazır olan pide order 421 cook 6
81 81. hazır olan pide order 336 cook 7
82 82. hazır olan pide order 137 cook 0
83 83. hazır olan pide order 453 cook 5
84 84. hazır olan pide order 499 cook 11
85 85. hazır olan pide order 306 cook 9
86 86. hazır olan pide order 40 cook 0
87 87. hazır olan pide order 212 cook 10
88 88. hazır olan pide order 37 cook 7
89 89. hazır olan pide order 249 cook 4
90 90. hazır olan pide order 96 cook 1
91 91. hazır olan pide order 395 cook 11
92 92. hazır olan pide order 485 cook 10
93 93. hazır olan pide order 483 cook 9
94 94. hazır olan pide order 34 cook 0
95 95. hazır olan pide order 279 cook 4
96 96. hazır olan pide order 266 cook 7
97 97. hazır olan pide order 444 cook 9
98 98. hazır olan pide order 493 cook 2
99 99. hazır olan pide order 172 cook 11
100 100. hazır olan pide order 498 cook 10
101
```

Test-3: ./PideShop 8080 15 15 3 and ./HungryVeryMuch 8080 200 20 20

```
arife@LAPTOP-SRROEDP3:~/finalyeni$ ./PideShop 8080 15 15 3
PideShop active, waiting for connections...
Total customers: 200
Order from client 0 at location (5, 7) (PID 126177) (RID 437)
Order from client 1 at location (14, 19) (PID 126177) (RID 99)
Order from client 2 at location (4, 3) (PID 126177) (RID 169)
Order from client 3 at location (7, 7) (PID 126177) (RID 127)
Order from client 4 at location (0, 8) (PID 126177) (RID 213)
Order from client 5 at location (10, 19) (PID 126177) (RID 369)
Order from client 6 at location (8, 6) (PID 126177) (RID 74)
Order from client 7 at location (16, 11) (PID 126177) (RID 184)
Order from client 8 at location (1, 0) (PID 126177) (RID 319)
Order from client 9 at location (16, 4) (PID 126177) (RID 187)
Order from client 10 at location (4, 1) (PID 126177) (RID 114)
Order from client 11 at location (2, 7) (PID 126177) (RID 53)
Order from client 12 at location (2, 12) (PID 126177) (RID 65)
Order from client 13 at location (8, 11) (PID 126177) (RID 428)
Order from client 14 at location (0, 4) (PID 126177) (RID 427)
Order from client 15 at location (0, 14) (PID 126177) (RID 295)
Order from client 16 at location (6, 2) (PID 126177) (RID 395)
Order from client 17 at location (1, 18) (PID 126177) (RID 13)
Order from client 18 at location (11, 11) (PID 126177) (RID 424)
Order from client 19 at location (17, 7) (PID 126177) (RID 424)
Order from client 20 at location (10, 11) (PID 126177) (RID 320)
Order from client 21 at location (3, 5) (PID 126177) (RID 22)
Order from client 22 at location (7, 7) (PID 126177) (RID 401)

arife@LAPTOP-SRROEDP3:~/finalyeni$ ./HungryVeryMuch 8080 200 20 20
Order sent: Order from client 0 at location (5, 7) (PID 126177) (RID 437) (PID 126177)
Order sent: Order from client 1 at location (14, 19) (PID 126177) (RID 99) (PID 126177)
Order sent: Order from client 2 at location (4, 3) (PID 126177) (RID 169) (PID 126177)
Order sent: Order from client 3 at location (7, 7) (PID 126177) (RID 127) (PID 126177)
Order sent: Order from client 4 at location (0, 8) (PID 126177) (RID 213) (PID 126177)
Order sent: Order from client 5 at location (10, 19) (PID 126177) (RID 369) (PID 126177)
Order sent: Order from client 6 at location (8, 6) (PID 126177) (RID 74) (PID 126177)
Order sent: Order from client 7 at location (16, 11) (PID 126177) (RID 184) (PID 126177)
Order sent: Order from client 8 at location (1, 0) (PID 126177) (RID 319) (PID 126177)
Order sent: Order from client 9 at location (16, 4) (PID 126177) (RID 187) (PID 126177)
Order sent: Order from client 10 at location (4, 1) (PID 126177) (RID 114) (PID 126177)
Order sent: Order from client 11 at location (2, 7) (PID 126177) (RID 53) (PID 126177)
Order sent: Order from client 12 at location (2, 12) (PID 126177) (RID 65) (PID 126177)
Order sent: Order from client 13 at location (8, 11) (PID 126177) (RID 428) (PID 126177)
Order sent: Order from client 14 at location (0, 4) (PID 126177) (RID 427) (PID 126177)
Order sent: Order from client 15 at location (0, 14) (PID 126177) (RID 295) (PID 126177)
Order sent: Order from client 16 at location (6, 2) (PID 126177) (RID 395) (PID 126177)
Order sent: Order from client 17 at location (1, 18) (PID 126177) (RID 13) (PID 126177)
Order sent: Order from client 18 at location (11, 11) (PID 126177) (RID 424) (PID 126177)
Order sent: Order from client 19 at location (17, 7) (PID 126177) (RID 424) (PID 126177)
Order sent: Order from client 20 at location (10, 11) (PID 126177) (RID 320) (PID 126177)
Order sent: Order from client 21 at location (3, 5) (PID 126177) (RID 22) (PID 126177)
Order sent: Order from client 22 at location (7, 7) (PID 126177) (RID 401) (PID 126177)
Order sent: Order from client 23 at location (6, 7) (PID 126177) (RID 485) (PID 126177)
Order sent: Order from client 24 at location (13, 7) (PID 126177) (RID 17) (PID 126177)
```

```

Order from client 185 at location (6, 13) (PID 126177) (RID 398)
Order from client 186 at location (5, 18) (PID 126177) (RID 166)
Order from client 187 at location (11, 11) (PID 126177) (RID 422)
Order from client 188 at location (17, 1) (PID 126177) (RID 130)
Order from client 188 at location (5, 8) (PID 126177) (RID 397)
Order from client 190 at location (10, 12) (PID 126177) (RID 165)
Order from client 191 at location (19, 18) (PID 126177) (RID 413)
Order from client 192 at location (1, 3) (PID 126177) (RID 323)
Order from client 193 at location (0, 4) (PID 126177) (RID 119)
Order from client 194 at location (9, 1) (PID 126177) (RID 140)
Order from client 195 at location (6, 7) (PID 126177) (RID 460)
Order from client 196 at location (4, 4) (PID 126177) (RID 273)
Order from client 197 at location (5, 16) (PID 126177) (RID 391)
Order from client 198 at location (6, 13) (PID 126177) (RID 154)
Order from client 199 at location (3, 11) (PID 126177) (RID 307)
total_served_orders: 200
total_customers: 200
>> done serving client @ 126177 PID 126177
Thanks Cook 10 and Moto 3 , cook 10 cooked 179 meals, moto 3 delivered 27 me
als
> active waiting for connections.
Order sent: Order from client 181 at location (14, 10) (PID 126177) (RID 318) (PID 126177)
Order sent: Order from client 182 at location (13, 4) (PID 126177) (RID 130) (PID 126177)
Order sent: Order from client 183 at location (1, 0) (PID 126177) (RID 340) (PID 126177)
Order sent: Order from client 184 at location (5, 0) (PID 126177) (RID 58) (PID 126177)
Order sent: Order from client 185 at location (6, 13) (PID 126177) (RID 398) (PID 126177)
Order sent: Order from client 186 at location (5, 18) (PID 126177) (RID 166) (PID 126177)
Order sent: Order from client 187 at location (11, 11) (PID 126177) (RID 422) (PID 126177)
Order sent: Order from client 188 at location (17, 1) (PID 126177) (RID 130) (PID 126177)
Order sent: Order from client 189 at location (5, 8) (PID 126177) (RID 397) (PID 126177)
Order sent: Order from client 190 at location (10, 12) (PID 126177) (RID 165) (PID 126177)
Order sent: Order from client 191 at location (19, 18) (PID 126177) (RID 413) (PID 126177)
Order sent: Order from client 192 at location (1, 3) (PID 126177) (RID 323) (PID 126177)
Order sent: Order from client 193 at location (0, 4) (PID 126177) (RID 119) (PID 126177)
Order sent: Order from client 194 at location (9, 1) (PID 126177) (RID 140) (PID 126177)
Order sent: Order from client 195 at location (6, 7) (PID 126177) (RID 460) (PID 126177)
Order sent: Order from client 196 at location (4, 4) (PID 126177) (RID 273) (PID 126177)
Order sent: Order from client 197 at location (5, 16) (PID 126177) (RID 391) (PID 126177)
Order sent: Order from client 198 at location (6, 13) (PID 126177) (RID 154) (PID 126177)
Order sent: Order from client 199 at location (3, 11) (PID 126177) (RID 307) (PID 126177)
arife@LAPTOP-SRROEDP3:~/finalyeni5$

```

Test-4: ./PideShop 8080 6 4 10 and ./HungryVeryMuch 8080 10 13 15

ctrl+c client

I canceled the orders in the client and then placed the order again.

```

arife@LAPTOP-SRROEDP3:~/finalyni$ make
gcc -o PideShop PideShop.c -lpthread -lm
gcc -pthread -o HungryVeryMuch HungryVeryMuch.c
arife@LAPTOP-SRROEDP3:~/finalyni$ ./PideShop 8888 6 4 10
PideShop active, waiting for connections...
Total customers: 10
Order from client 0 at location (5, 7) (PID 130392) (RID 257)
Order from client 1 at location (4, 5) (PID 130392) (RID 105)
Order from client 2 at location (6, 9) (PID 130392) (RID 447)
Order from client 3 at location (4, 1) (PID 130392) (RID 90)
Order from client 4 at location (7, 1) (PID 130392) (RID 12)
Order from client 5 at location (9, 1) (PID 130392) (RID 180)
CANCEL 257
CANCEL 105
CANCEL 447

CANCEL 90
CANCEL 12
CANCEL 180
CANCEL 403

>> done serving client @ 130392 PID 130392
Thanks Cook 0 and Moto 1 , cook 0 cooked 2 meals, moto 1 delivered 3 meals
>> active waiting for connections.
Total customers: 6
Order from client 0 at location (11, 4) (PID 130475) (RID 205)
Order from client 1 at location (12, 14) (PID 130475) (RID 26)
Order from client 2 at location (12, 6) (PID 130475) (RID 330)
Order from client 3 at location (10, 9) (PID 130475) (RID 355)
Order from client 4 at location (8, 5) (PID 130475) (RID 215)
>> done serving client @ 130475 PID 130475
Thanks Cook 1 and Moto 0 , cook 1 cooked 8 meals, moto 0 delivered 6 meals
>> active waiting for connections.
Order from client 5 at location (11, 9) (PID 130475) (RID 81)
[]

arife@LAPTOP-SRROEDP3:~/finalyni$ ./HungryVeryMuch 8888 10 13 15
Order sent: Order from client 0 at location (5, 7) (PID 130392) (RID 257) (PID 130392)
Order sent: Order from client 1 at location (4, 5) (PID 130392) (RID 105) (PID 130392)
Order sent: Order from client 2 at location (6, 9) (PID 130392) (RID 447) (PID 130392)
Order sent: Order from client 3 at location (4, 1) (PID 130392) (RID 90) (PID 130392)
Order sent: Order from client 4 at location (7, 1) (PID 130392) (RID 12) (PID 130392)
Order sent: Order from client 5 at location (9, 1) (PID 130392) (RID 180) (PID 130392)
^C
Order 257 cancelled.

Order 105 cancelled.

Order 447 cancelled.

Order 90 cancelled.

Order 12 cancelled.

Order 180 cancelled.

Order 403 cancelled.
arife@LAPTOP-SRROEDP3:~/finalyni$ ./HungryVeryMuch 8888 6 13 15
Order sent: Order from client 0 at location (11, 4) (PID 130475) (RID 205) (PID 130475)
Order sent: Order from client 1 at location (12, 14) (PID 130475) (RID 26) (PID 130475)
Order sent: Order from client 2 at location (12, 6) (PID 130475) (RID 330) (PID 130475)
Order sent: Order from client 3 at location (10, 9) (PID 130475) (RID 355) (PID 130475)
Order sent: Order from client 4 at location (8, 5) (PID 130475) (RID 215) (PID 130475)
Order sent: Order from client 5 at location (11, 9) (PID 130475) (RID 81) (PID 130475)
arife@LAPTOP-SRROEDP3:~/finalyni$ █

```

Test-5: ./PideShop 8080 6 4 10 and ./HungryVeryMuch 8080 15 13 15

ctrl+c server

[illegible]