

# CSE344 FINAL Report

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## 1. Problem Definition

The task is to design and implement a program that simulates a restaurant environment where multiple cooks prepare meals and delivery personnel deliver these meals.

### Design and Solution Approach

The project is divided into two main components:

1. **PideShop.c:** This acts as the server-side managing orders and coordinating between cooks and delivery personnel.
2. **HungryVeryMuch.c:** This simulates client-side interacting with the PideShop.

### PideShop.c Implementation

1. **Initialization:**
  - Initialize necessary mutexes, condition variables, and semaphores for synchronization.
  - Create threads for cooks and delivery personnel to handle orders concurrently.
2. **Order Handling:**
  - The server receives orders, which are then processed by available cooks.
  - Cooks prepare meals, utilizing semaphores to manage resources like ovens and shovels.
  - Once meals are ready, notified manager.
  - Manager prepared meals as 3 packages and gives to delivery personnel to deliver the meals.
3. **Synchronization:**
  - Mutexes and condition variables ensure that cooks, manager and delivery personnels do not interfere with each other's operations.
  - Semaphores are used to manage access to shared resources like ovens, oven doors and shovels.
4. **Logging and Error Handling:**
  - Functions are implemented to log messages with timestamps.
  - Error handling is performed at various stages to ensure smooth operation and debugging.
5. **Signal Handling:**
  - Signal handlers for SIGINT ensure that the program can gracefully shut down, releasing all resources properly.

### HungryVeryMuch.c Implementation

1. **Client Simulation:**
  - Simulates customer behavior by sending orders to the PideShop..
2. **Order Generation:**
  - Waits for acknowledgment from the server about order status.
3. **Signal Handling:**

- Handles SIGINT to ensure the client can shut down gracefully, cleaning up resources and exiting properly.

## **Server Side**

### **Mutexes**

#### **deliveryMutex**

It handles like delivery\_count to ensure that. Manager and delivery threads will access this in order.

#### **cookMutex**

It ensures that cooks will get orders one by one without collision. It will prevent to get same order by same cooks.

#### **mealMutex**

This mutex is between cooked meals and manager. So when manager check cooked meals it will see last version and no one will update while manager check it.

### **Semaphores**

#### **oven\_space**

Counting semaphore to hold available oven\_space

#### **door\_access**

Counting semaphore to hold available door\_access

#### **shovels**

Counting semaphore to hold available shovels

### **Condition Variables**

#### **deliveryCond**

Deliveries will wait in this condition until manager got 3 meals(or last 2,1 meal(s)) and signal any delivery thread to delivery meals.

#### **condCook**

Cook threads will wait in this condition until new orders come. Manager will signal cook threads when new orders come.

## **condManager**

Manager thread will wait in this condition until 3 meals cooked. Cook thread will signal manager threads to handle these meals and give to delivery threads.

## **clientCond**

Manager will wait until the last meals are delivered. When deliveries are finished, last thread will signal manager and manager will finish the day.

## **Manager Thread**

- Manager thread accept new connections from clients.
- Take the orders.
- Warn cook threads to prepare meals and wait in **condManager**.
- When 3 meals has cooked, add to queue and signal any delivery thread to delivery these meals. Do these until all meals are cooked.
- When meals are finished, waits in **clientCond**. When all meals are delivered, manager will be warned by last delivery thread and gives information about orders are finished.

## **Cook Thread**

- Cook threads will wait in **condCook** for new orders.
- When new orders came, they starts to prepare meals.
- When meal is ready, wait for shovel.
- When it gets a shovel, it will check if any oven space is available. If not available, it will put back shovel and check this conditions until there is a space in oven.
- Place meal to oven and if there are more orders, it will start to prepare new meal.
- When the meal is cooked, it will get this cook. If this is the third meal then warn manager.
- When all meals are finished, go to head and wait for new orders.

## Delivery Personnel Thread

- Delivery threads will wait in **deliveryCond** for new delivery orders.
- When threads will be warned, it will get first 3 meals from queue and deliver them one by one.
- When all orders are delivered, it will warn manager to say orders are finished and can print day is over.

## Signal handling

When user press ^C in server. **server\_socket** will shutdown to unblock read, write system calls. Server will send SIGUSR1 to say that server will shut down. No more orders will be prepared. **sigInt** flag will set to 1. **sigInt** flag will ensure that all thread will exit correctly.

When **SIGUSR1** come from client, it will set **sigUsr1** to 1 and handles threads to start from the beginning.

## Functions

**manager()** - Manager thread function, accepts new clients, calls **handle\_client** function.

**handle\_client()** - Function to handle the client connection, reads order informations, handles cook and delivery threads.

**cook()** - Cook thread function

**cook\_handler()** - Cook handler function. Handles meal preparation, cooking and warning manager.

**deliveryPersonel()** - Deliver Personel thread function

**delivery\_handler()** - Delivery handler function. Delivers meals to locations.

**generateRandomPQ()** - Function to generate random p and q values

**writeLogMessage()** - Function to write log message to the log file

**createMessageWithTime()** - Function to create a message with time

**clear()** - Function to clear resources

**min()** - Function to find the minimum of two integers

**findMaxIndex()** - Function to find the index of the maximum element in an array

## Client Side

Client will connect to server and send the necessary information(pid, order number, size of the map etc.). Later it will wait in read system call to get updates from orders.

### Signal handling

When user press ^C in client. It will send SIGUSR1 signal to server to say that order is cancelled.

When **SIGUSR1** come from server, It will print “shop has been burned” message and exit from the program.

## 2-) How to use

1-) After typing '**make clean**', it will delete files other than c, header file(s) and makefile (to ensure no leftover files from the old program). Later type “**make**” to compile the program.

2-) To run programs

As an ip number, use local ip or connected network's inet

```
wifi0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.30.43 netmask 255.255.255.0 broadcast 192.168.30.255
    inet6 fe80::8c59:5fc5:85d8:b0d4 prefixlen 64 scopeid 0x100<link,site,host>
    ether 70:9c:d1:e4:8b:df (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

For the server file usage “./PideShop <ipnumber> <portnumber> <CookthreadPoolSize> <deliveryPoolSize> <deliverySpeed>”

For the client usage “./HungryVeryMuch <ipnumber> <portnumber> <numberOfOrders> <p> <q>”.

### 3-) Testing and Validation

The implemented solution underwent rigorous testing to ensure functionality and correctness.

**PideShop IP PORT 10(Cook Threads) 5(Delivery Threads) 3(Speed)**

**HungryVeryMuch IP PORT 3 10 10**

```
@DESKTOP-SFGQAM7: /mnt. x + -
@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./PideShop 192.168.38.43 8080
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
|

@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./HungryVeryMuch 192.168.38.4
3 8080 3 10 10
PID: 173
Orders received. Meals are preparing
Order 1 is preparing.
Order 2 is preparing.
Order 3 is preparing.
Order 3 prepared. Will be placing in the oven
Order 2 prepared. Will be placing in the oven
Order 1 prepared. Will be placing in the oven
Order 3 cooked. Will be delivered soon
Order 2 cooked. Will be delivered soon
Order 1 cooked. Will be delivered soon
Meal 3-2-1 is delivering by 1
Meal 3 is delivered by 1
Meal 2 is delivered by 1
Meal 1 is delivered by 1
Done serving meals for customers
All customers served
log file written ..
@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ |
```

**HungryVeryMuch IP PORT 5 10 10**

```
@DESKTOP-SFGQAM7: /mnt. x + -
@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./PideShop 192.168.38.43 8080
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
5 new customers from 174.. Serving
> done serving client @ XXX PID 174
> Thanks Cook 2 and Moto 2
|

@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./HungryVeryMuch 192.168.38.4
3 8080 5 10 10
PID: 173
Orders received. Meals are preparing
Order 1 is preparing.
Order 2 is preparing.
Order 3 is preparing.
Order 3 prepared. Will be placing in the oven
Order 2 prepared. Will be placing in the oven
Order 1 prepared. Will be placing in the oven
Order 3 cooked. Will be delivered soon
Order 2 cooked. Will be delivered soon
Order 1 cooked. Will be delivered soon
Meal 3-2-1 is delivering by 1
Meal 3 is delivered by 1
Meal 2 is delivered by 1
Meal 1 is delivered by 1
Done serving meals for customers
All customers served
log file written ..
@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./HungryVeryMuch 192.168.38.4
3 8080 5 10 10
PID: 174
Orders received. Meals are preparing
Order 4 is preparing.
Order 5 is preparing.
Order 6 is preparing.
Order 7 is preparing.
Order 8 is preparing.
Order 6 prepared. Will be placing in the oven
Order 8 prepared. Will be placing in the oven
Order 7 prepared. Will be placing in the oven
Order 5 prepared. Will be placing in the oven
Order 4 prepared. Will be placing in the oven
Order 6 cooked. Will be delivered soon
Order 8 cooked. Will be delivered soon
Order 7 cooked. Will be delivered soon
Meal 6-8-7 is delivering by 2
Order 5 cooked. Will be delivered soon
Order 4 cooked. Will be delivered soon
Meal 5-4 is delivering by 3
Meal 6 is delivered by 2
Meal 5 is delivered by 3
Meal 8 is delivered by 2
Meal 4 is delivered by 3
Meal 7 is delivered by 2
Done serving meals for customers
All customers served
log file written ..
@DESKTOP-SFGQAM7:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$
```

## HungryVeryMuch IP PORT 10 10 10

```
@DESKTOP-SFG0AM7: /mnt/ x + - [ ] x
@DESKTOP-SFG0AM7: /mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./PideShop 192.168.39.43 8080
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
5 new customers from 174.. Serving
> done serving client @ XXX PID 174
> Thanks Cook 2 and Moto 2
10 new customers from 175.. Serving
> done serving client @ XXX PID 175
> Thanks Cook 1 and Moto 1
|

@DESKTOP-SFG0AM7: /mnt/ x + - [ ] x
@DESKTOP-SFG0AM7: /mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./HungryVeryMuch 192.168.39.4
3 8080 10 10 10
PID: 175
Orders received. Meals are preparing
Order 9 is preparing.
Order 10 is preparing.
Order 11 is preparing.
Order 12 is preparing.
Order 13 is preparing.
Order 14 is preparing.
Order 15 is preparing.
Order 16 is preparing.
Order 17 is preparing.
Order 18 is preparing.
Order 17 prepared. Will be placing in the oven
Order 18 prepared. Will be placing in the oven
Order 16 prepared. Will be placing in the oven
Order 15 prepared. Will be placing in the oven
Order 14 prepared. Will be placing in the oven
Order 17 cooked. Will be delivered soon
Order 18 cooked. Will be delivered soon
Order 16 cooked. Will be delivered soon
Meal 17-18-16 is delivering by 4
Order 10 prepared. Will be placing in the oven
Order 12 prepared. Will be placing in the oven
Order 15 cooked. Will be delivered soon
Order 13 prepared. Will be placing in the oven
Order 14 cooked. Will be delivered soon
Order 11 prepared. Will be placing in the oven
Order 10 cooked. Will be delivered soon
Meal 15-14-10 is delivering by 5
Order 12 cooked. Will be delivered soon
Order 9 prepared. Will be placing in the oven
Order 13 cooked. Will be delivered soon
Order 11 cooked. Will be delivered soon
Meal 12-13-11 is delivering by 1
Meal 15 is delivered by 5
Order 9 cooked. Will be delivered soon
Meal 9 is delivered by 3
Meal 20 is delivered by 5
Meal 12 is delivered by 1
Meal 17 is delivered by 4
Meal 18 is delivered by 4
Meal 9 is delivered by 3
Meal 10 is delivered by 5
Meal 13 is delivered by 1
Meal 16 is delivered by 4
Meal 11 is delivered by 1
Done serving meals for customers
All customers served
log file written ..
```

## HungryVeryMuch IP PORT 50 10 10

```
@DESKTOP-SFG0AM7: /mnt/ x + - [ ] x
@DESKTOP-SFG0AM7: /mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./PideShop 192.168.39.43 8080
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
5 new customers from 174.. Serving
> done serving client @ XXX PID 174
> Thanks Cook 2 and Moto 2
10 new customers from 175.. Serving
> done serving client @ XXX PID 175
> Thanks Cook 1 and Moto 1
50 new customers from 176.. Serving
> done serving client @ XXX PID 176
> Thanks Cook 7 and Moto 3
|

@DESKTOP-SFG0AM7: /mnt/ x + - [ ] x
@DESKTOP-SFG0AM7: /mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./HungryVeryMuch 192.168.39.4
3 8080 10 10 10
PID: 175
Orders received. Meals are preparing
Order 9 is preparing.
Order 10 is preparing.
Order 11 is preparing.
Order 12 is preparing.
Order 13 is preparing.
Order 14 is preparing.
Order 15 is preparing.
Order 16 is preparing.
Order 17 is preparing.
Order 18 is preparing.
Order 17 prepared. Will be placing in the oven
Order 18 prepared. Will be placing in the oven
Order 16 prepared. Will be placing in the oven
Order 15 prepared. Will be placing in the oven
Order 14 prepared. Will be placing in the oven
Order 17 cooked. Will be delivered soon
Order 18 cooked. Will be delivered soon
Order 16 cooked. Will be delivered soon
Meal 17-18-16 is delivering by 4
Order 10 prepared. Will be placing in the oven
Order 12 prepared. Will be placing in the oven
Order 15 cooked. Will be delivered soon
Order 13 prepared. Will be placing in the oven
Order 14 cooked. Will be delivered soon
Order 11 prepared. Will be placing in the oven
Order 10 cooked. Will be delivered soon
Meal 15-14-10 is delivering by 5
Order 12 cooked. Will be delivered soon
Order 9 prepared. Will be placing in the oven
Order 13 cooked. Will be delivered soon
Order 11 cooked. Will be delivered soon
Meal 12-13-11 is delivering by 1
Meal 15 is delivered by 5
Order 9 cooked. Will be delivered soon
Meal 9 is delivered by 3
Meal 20 is delivered by 5
Meal 12 is delivered by 1
Meal 17 is delivered by 4
Meal 18 is delivered by 4
Meal 9 is delivered by 3
Meal 10 is delivered by 5
Meal 13 is delivered by 1
Meal 16 is delivered by 4
Meal 11 is delivered by 1
Done serving meals for customers
All customers served
log file written ..
@DESKTOP-SFG0AM7: /mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ |
```

## HungryVeryMuch IP PORT 100 10 10

```
@DESKTOP-SFGQAMT: /mnt... x + - [ ] x
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./PideShop 192.168.38.43 8080
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
5 new customers from 174.. Serving
> done serving client @ XXX PID 174
> Thanks Cook 2 and Moto 2
10 new customers from 175.. Serving
> done serving client @ XXX PID 175
> Thanks Cook 1 and Moto 1
50 new customers from 176.. Serving
> done serving client @ XXX PID 176
> Thanks Cook 7 and Moto 3
100 new customers from 177.. Serving
> done serving client @ XXX PID 177
> Thanks Cook 1 and Moto 4
|

Meal 133 is delivered by 4
Meal 138-143-141 is delivering by 4
Meal 138 is delivered by 4
Meal 128 is delivered by 2
Meal 153-147-144 is delivering by 2
Meal 129 is delivered by 3
Meal 137 is delivered by 5
Meal 140 is delivered by 1
Meal 143 is delivered by 4
Meal 153 is delivered by 2
Meal 135 is delivered by 5
Meal 152-156-145 is delivering by 5
Meal 147 is delivered by 2
Meal 141 is delivered by 4
Meal 150-146-148 is delivering by 4
Meal 144 is delivered by 2
Meal 157-149-155 is delivering by 2
Meal 130 is delivered by 3
Meal 150 is delivered by 4
Meal 152 is delivered by 5
Meal 142 is delivered by 1
Meal 164-162-151 is delivering by 1
Meal 136 is delivered by 3
Meal 166-154-169 is delivering by 3
Meal 166 is delivered by 3
Meal 146 is delivered by 4
Meal 156 is delivered by 5
Meal 164 is delivered by 1
Meal 154 is delivered by 3
Meal 157 is delivered by 2
Meal 148 is delivered by 4
Meal 159-158-163 is delivering by 4
Meal 162 is delivered by 1
Meal 149 is delivered by 2
Meal 155 is delivered by 2
Meal 168-167-165 is delivering by 2
Meal 159 is delivered by 4
Meal 151 is delivered by 1
Meal 161 is delivered by 1
Meal 160 is delivered by 3
Meal 145 is delivered by 5
Meal 158 is delivered by 4
Meal 168 is delivered by 2
Meal 161 is delivered by 1
Meal 163 is delivered by 4
Meal 167 is delivered by 2
Meal 165 is delivered by 2
Done serving meals for customers
All customers served
log file written ..
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$
```

## HungryVeryMuch IP PORT 200 10 10

```
@DESKTOP-SFGQAMT: /mnt... x + - [ ] x
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$ ./PideShop 192.168.38.43 8080
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
5 new customers from 174.. Serving
> done serving client @ XXX PID 174
> Thanks Cook 2 and Moto 2
10 new customers from 175.. Serving
> done serving client @ XXX PID 175
> Thanks Cook 1 and Moto 1
50 new customers from 176.. Serving
> done serving client @ XXX PID 176
> Thanks Cook 7 and Moto 3
100 new customers from 177.. Serving
> done serving client @ XXX PID 177
> Thanks Cook 1 and Moto 4
200 new customers from 178.. Serving
> done serving client @ XXX PID 178
> Thanks Cook 1 and Moto 2
|

Meal 338 is delivered by 5
Meal 341 is delivered by 2
Meal 334 is delivered by 4
Meal 340-342-343 is delivering by 4
Meal 333 is delivered by 3
Meal 346 is delivered by 5
Meal 327 is delivered by 1
Meal 336 is delivered by 2
Meal 337 is delivered by 5
Meal 351-348-345 is delivering by 5
Meal 330 is delivered by 1
Meal 347-352-349 is delivering by 1
Meal 332 is delivered by 3
Meal 340 is delivered by 4
Meal 351 is delivered by 5
Meal 347 is delivered by 1
Meal 344 is delivered by 2
Meal 349-353-350 is delivering by 2
Meal 339 is delivered by 3
Meal 354-355-356 is delivering by 3
Meal 349 is delivered by 2
Meal 354 is delivered by 3
Meal 342 is delivered by 4
Meal 348 is delivered by 5
Meal 352 is delivered by 1
Meal 345 is delivered by 5
Meal 357-358-362 is delivering by 5
Meal 360 is delivered by 1
Meal 361-363-364 is delivering by 1
Meal 355 is delivered by 3
Meal 356 is delivered by 3
Meal 365-366-368 is delivering by 3
Meal 353 is delivered by 2
Meal 343 is delivered by 4
Meal 359-367 is delivering by 4
Meal 350 is delivered by 2
Meal 361 is delivered by 1
Meal 365 is delivered by 3
Meal 359 is delivered by 4
Meal 357 is delivered by 5
Meal 367 is delivered by 4
Meal 358 is delivered by 5
Meal 363 is delivered by 1
Meal 362 is delivered by 5
Meal 366 is delivered by 3
Meal 364 is delivered by 1
Meal 360 is delivered by 3
Done serving meals for customers
All customers served
log file written ..
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/Desktop/System/SystemFinal/program$
```



## ^C Test

```
@DESKTOP-SFGQAMT: /mnt. X + -
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/_Desktop/System/SystemFinal/program$ ./PideShop 192.168.38.43 8880
10 5 3
PideShop active waiting for connection
3 new customers from 173.. Serving
> done serving client @ XXX PID 173
> Thanks Cook 1 and Moto 1
5 new customers from 174.. Serving
> done serving client @ XXX PID 174
> Thanks Cook 2 and Moto 2
10 new customers from 175.. Serving
> done serving client @ XXX PID 175
> Thanks Cook 1 and Moto 1
50 new customers from 176.. Serving
> done serving client @ XXX PID 176
> Thanks Cook 7 and Moto 3
100 new customers from 177.. Serving
> done serving client @ XXX PID 177
> Thanks Cook 1 and Moto 4
200 new customers from 178.. Serving
> done serving client @ XXX PID 178
> Thanks Cook 1 and Moto 2
200 new customers from 179.. Serving
^C.. Upps quitting.. writing log file
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/_Desktop/System/SystemFinal/program$ |

Order 377 prepared. Will be placing in the oven
Order 372 prepared. Will be placing in the oven
Order 374 cooked. Will be delivered soon
Order 385 is preparing.
Order 371 cooked. Will be delivered soon
Order 386 is preparing.
Order 378 cooked. Will be delivered soon
Meal 374-371-378 is delivering by 2
Order 387 is preparing.
Order 382 prepared. Will be placing in the oven
Order 370 cooked. Will be delivered soon
Order 369 prepared. Will be placing in the oven
Order 388 is preparing.
Order 379 prepared. Will be placing in the oven
Order 369 cooked. Will be delivered soon
Order 389 is preparing.
Order 380 prepared. Will be placing in the oven
Order 377 cooked. Will be delivered soon
Meal 370-369-377 is delivering by 4
Meal 370 is delivered by 4
Order 390 is preparing.
Order 388 prepared. Will be placing in the oven
Order 376 cooked. Will be delivered soon
Order 375 cooked. Will be delivered soon
Order 381 prepared. Will be placing in the oven
Order 391 is preparing.
Order 392 is preparing.
Order 379 cooked. Will be delivered soon
Meal 376-375-379 is delivering by 5
Order 393 is preparing.
Order 387 prepared. Will be placing in the oven
Order 372 cooked. Will be delivered soon
Order 389 prepared. Will be placing in the oven
Order 394 is preparing.
Order 373 cooked. Will be delivered soon
Order 395 is preparing.
Order 380 cooked. Will be delivered soon
Meal 372-373-380 is delivering by 1
Order 387 cooked. Will be delivered soon
Order 380 cooked. Will be delivered soon
Meal 376 is delivered by 5
Order 395 prepared. Will be placing in the oven
Order 396 is preparing.
Order 382 cooked. Will be delivered soon
Meal 387-388-382 is delivering by 3
Order 393 prepared. Will be placing in the oven
Order 397 is preparing.
Order 383 prepared. Will be placing in the oven
Order 398 is preparing.
Shop has been burned.
@DESKTOP-SFGQAMT:/mnt/c/Users/akif_/_Desktop/System/SystemFinal/program$ |
```

## Some screenshots from shop log

```
C:\Users\akif_/_Desktop/System/SystemFinal/programshop_log.txt - Notepad++
Dosya Dizin Ara Görünüm Kodlama Diller Ayarlar Aracılar Makrolar Çatır İstisnalar Pencere...
shop_log.txt
1 Jun 14 2024 +03 16 27 22: 3 new customers from 173.. Serving
2 Jun 14 2024 +03 16 27 24: Cook 5 cooked order 3
3 Jun 14 2024 +03 16 27 24: Cook 9 cooked order 2
4 Jun 14 2024 +03 16 27 24: Cook 1 cooked order 1
5 Jun 14 2024 +03 16 27 29: Delivery 1 delivered order 3
6 Jun 14 2024 +03 16 27 31: Delivery 1 delivered order 2
7 Jun 14 2024 +03 16 27 32: Delivery 1 delivered order 1
8 Jun 14 2024 +03 16 27 42: 5 new customers from 174.. Serving
9 Jun 14 2024 +03 16 27 43: Cook 5 cooked order 6
10 Jun 14 2024 +03 16 27 43: Cook 9 cooked order 8
11 Jun 14 2024 +03 16 27 43: Cook 3 cooked order 7
12 Jun 14 2024 +03 16 27 43: Cook 6 cooked order 5
13 Jun 14 2024 +03 16 27 43: Cook 2 cooked order 4
14 Jun 14 2024 +03 16 27 45: Delivery 2 delivered order 6
15 Jun 14 2024 +03 16 27 45: Delivery 3 delivered order 5
16 Jun 14 2024 +03 16 27 46: Delivery 2 delivered order 8
17 Jun 14 2024 +03 16 27 48: Delivery 3 delivered order 4
18 Jun 14 2024 +03 16 27 51: Delivery 2 delivered order 7
19 Jun 14 2024 +03 16 28 02: 10 new customers from 175.. Serving
20 Jun 14 2024 +03 16 28 03: Cook 8 cooked order 17
21 Jun 14 2024 +03 16 28 03: Cook 5 cooked order 18
22 Jun 14 2024 +03 16 28 03: Cook 2 cooked order 16
23 Jun 14 2024 +03 16 28 03: Cook 10 cooked order 15
24 Jun 14 2024 +03 16 28 04: Cook 7 cooked order 14
25 Jun 14 2024 +03 16 28 04: Cook 6 cooked order 10
26 Jun 14 2024 +03 16 28 04: Cook 4 cooked order 12
27 Jun 14 2024 +03 16 28 04: Cook 3 cooked order 13
28 Jun 14 2024 +03 16 28 05: Cook 1 cooked order 11
29 Jun 14 2024 +03 16 28 05: Delivery 5 delivered order 15
30 Jun 14 2024 +03 16 28 05: Cook 9 cooked order 9
31 Jun 14 2024 +03 16 28 08: Delivery 5 delivered order 14
32 Jun 14 2024 +03 16 28 09: Delivery 1 delivered order 12
33 Jun 14 2024 +03 16 28 09: Delivery 4 delivered order 17
34 Jun 14 2024 +03 16 28 09: Delivery 4 delivered order 18
35 Jun 14 2024 +03 16 28 10: Delivery 3 delivered order 9
36 Jun 14 2024 +03 16 28 11: Delivery 5 delivered order 10
37 Jun 14 2024 +03 16 28 14: Delivery 1 delivered order 13
38 Jun 14 2024 +03 16 28 15: Delivery 4 delivered order 16
39 Jun 14 2024 +03 16 28 18: Delivery 1 delivered order 11
40 Jun 14 2024 +03 16 28 43: 50 new customers from 176.. Serving
41 Jun 14 2024 +03 16 28 44: Cook 5 cooked order 24
42 Jun 14 2024 +03 16 28 44: Cook 7 cooked order 28
43 Jun 14 2024 +03 16 28 44: Cook 8 cooked order 23
44 Jun 14 2024 +03 16 28 44: Cook 9 cooked order 25
45 Jun 14 2024 +03 16 28 44: Cook 6 cooked order 26
46 Jun 14 2024 +03 16 28 44: Cook 10 cooked order 22
47 Jun 14 2024 +03 16 28 44: Cook 4 cooked order 21
48 Jun 14 2024 +03 16 28 44: Cook 2 cooked order 19
49 Jun 14 2024 +03 16 28 45: Cook 9 cooked order 34
50 Jun 14 2024 +03 16 28 45: Cook 7 cooked order 31
51 Jun 14 2024 +03 16 28 45: Cook 8 cooked order 30
```

```
C:\Users\akul\Desktop\SystemFinal\program\shop_log.txt - Notepad++
Dosya Düzeyi Ara Görünüm Kodlama Diller Ayarlar Arayıcı Makrolar Çıktı Etkiletiler Pencere 1
shop_log.txt
342 Jun 14 2024 +03 16 32 04: 200 new customers from 178.. Serving
343 Jun 14 2024 +03 16 32 05: Cook 9 cooked order 177
344 Jun 14 2024 +03 16 32 05: Cook 10 cooked order 172
345 Jun 14 2024 +03 16 32 05: Cook 5 cooked order 178
346 Jun 14 2024 +03 16 32 05: Cook 6 cooked order 171
347 Jun 14 2024 +03 16 32 05: Cook 3 cooked order 173
348 Jun 14 2024 +03 16 32 06: Cook 1 cooked order 175
349 Jun 14 2024 +03 16 32 06: Cook 2 cooked order 176
350 Jun 14 2024 +03 16 32 06: Cook 10 cooked order 179
351 Jun 14 2024 +03 16 32 06: Cook 9 cooked order 182
352 Jun 14 2024 +03 16 32 06: Delivery 1 delivered order 176
353 Jun 14 2024 +03 16 32 06: Cook 4 cooked order 169
354 Jun 14 2024 +03 16 32 06: Cook 1 cooked order 187
355 Jun 14 2024 +03 16 32 06: Cook 8 cooked order 174
356 Jun 14 2024 +03 16 32 07: Cook 7 cooked order 170
357 Jun 14 2024 +03 16 32 07: Cook 2 cooked order 185
358 Jun 14 2024 +03 16 32 07: Cook 6 cooked order 181
359 Jun 14 2024 +03 16 32 07: Cook 5 cooked order 180
360 Jun 14 2024 +03 16 32 08: Cook 3 cooked order 186
361 Jun 14 2024 +03 16 32 08: Delivery 1 delivered order 179
362 Jun 14 2024 +03 16 32 08: Cook 10 cooked order 189
363 Jun 14 2024 +03 16 32 08: Cook 9 cooked order 188
364 Jun 14 2024 +03 16 32 09: Cook 4 cooked order 190
365 Jun 14 2024 +03 16 32 09: Cook 1 cooked order 194
366 Jun 14 2024 +03 16 32 09: Cook 2 cooked order 196
367 Jun 14 2024 +03 16 32 10: Cook 8 cooked order 184
368 Jun 14 2024 +03 16 32 10: Cook 7 cooked order 183
369 Jun 14 2024 +03 16 32 10: Delivery 3 delivered order 177
370 Jun 14 2024 +03 16 32 10: Cook 6 cooked order 191
371 Jun 14 2024 +03 16 32 11: Cook 5 cooked order 192
372 Jun 14 2024 +03 16 32 11: Delivery 5 delivered order 171
373 Jun 14 2024 +03 16 32 11: Cook 3 cooked order 193
374 Jun 14 2024 +03 16 32 11: Delivery 1 delivered order 182
375 Jun 14 2024 +03 16 32 11: Cook 1 cooked order 199
376 Jun 14 2024 +03 16 32 11: Cook 2 cooked order 208
377 Jun 14 2024 +03 16 32 11: Delivery 2 delivered order 170
378 Jun 14 2024 +03 16 32 11: Cook 10 cooked order 195
379 Jun 14 2024 +03 16 32 11: Delivery 4 delivered order 169
380 Jun 14 2024 +03 16 32 12: Cook 9 cooked order 197
381 Jun 14 2024 +03 16 32 12: Cook 8 cooked order 201
382 Jun 14 2024 +03 16 32 12: Cook 7 cooked order 202
383 Jun 14 2024 +03 16 32 12: Cook 1 cooked order 209
384 Jun 14 2024 +03 16 32 12: Cook 4 cooked order 198
385 Jun 14 2024 +03 16 32 12: Cook 2 cooked order 210
386 Jun 14 2024 +03 16 32 13: Cook 8 cooked order 211
387 Jun 14 2024 +03 16 32 13: Delivery 2 delivered order 185
388 Jun 14 2024 +03 16 32 13: Cook 7 cooked order 213
389 Jun 14 2024 +03 16 32 13: Cook 3 cooked order 205
390 Jun 14 2024 +03 16 32 14: Delivery 5 delivered order 173
391 Jun 14 2024 +03 16 32 14: Cook 10 cooked order 206
392 Jun 14 2024 +03 16 33 14: Cook 6 cooked order 207
```

```
C:\Users\akul\Desktop\SystemFinal\program\shop_log.txt - Notepad++
Dosya Düzeyi Ara Görünüm Kodlama Diller Ayarlar Arayıcı Makrolar Çıktı Etkiletiler Pencere 1
shop_log.txt
713 Jun 14 2024 +03 16 33 55: Delivery 1 delivered order 330
714 Jun 14 2024 +03 16 33 55: Delivery 3 delivered order 332
715 Jun 14 2024 +03 16 33 56: Delivery 4 delivered order 340
716 Jun 14 2024 +03 16 33 56: Delivery 5 delivered order 351
717 Jun 14 2024 +03 16 33 57: Delivery 1 delivered order 347
718 Jun 14 2024 +03 16 33 57: Delivery 2 delivered order 344
719 Jun 14 2024 +03 16 33 58: Delivery 3 delivered order 339
720 Jun 14 2024 +03 16 33 59: Delivery 2 delivered order 349
721 Jun 14 2024 +03 16 34 00: Delivery 3 delivered order 354
722 Jun 14 2024 +03 16 34 01: Delivery 4 delivered order 342
723 Jun 14 2024 +03 16 34 01: Delivery 5 delivered order 348
724 Jun 14 2024 +03 16 34 01: Delivery 1 delivered order 352
725 Jun 14 2024 +03 16 34 05: Delivery 5 delivered order 345
726 Jun 14 2024 +03 16 34 05: Delivery 1 delivered order 360
727 Jun 14 2024 +03 16 34 05: Delivery 3 delivered order 355
728 Jun 14 2024 +03 16 34 05: Delivery 3 delivered order 356
729 Jun 14 2024 +03 16 34 05: Delivery 2 delivered order 353
730 Jun 14 2024 +03 16 34 07: Delivery 4 delivered order 343
731 Jun 14 2024 +03 16 34 07: Delivery 2 delivered order 350
732 Jun 14 2024 +03 16 34 09: Delivery 1 delivered order 361
733 Jun 14 2024 +03 16 34 09: Delivery 3 delivered order 365
734 Jun 14 2024 +03 16 34 10: Delivery 4 delivered order 359
735 Jun 14 2024 +03 16 34 10: Delivery 5 delivered order 357
736 Jun 14 2024 +03 16 34 11: Delivery 4 delivered order 367
737 Jun 14 2024 +03 16 34 11: Delivery 5 delivered order 358
738 Jun 14 2024 +03 16 34 12: Delivery 1 delivered order 363
739 Jun 14 2024 +03 16 34 13: Delivery 5 delivered order 362
740 Jun 14 2024 +03 16 34 15: Delivery 3 delivered order 366
741 Jun 14 2024 +03 16 34 16: Delivery 1 delivered order 364
742 Jun 14 2024 +03 16 34 16: Delivery 3 delivered order 368
743 Jun 14 2024 +03 16 34 58: 200 new customers from 179.. Serving
744 Jun 14 2024 +03 16 34 59: Cook 6 cooked order 374
745 Jun 14 2024 +03 16 34 59: Cook 1 cooked order 371
746 Jun 14 2024 +03 16 35 00: Cook 9 cooked order 378
747 Jun 14 2024 +03 16 35 00: Cook 8 cooked order 370
748 Jun 14 2024 +03 16 35 00: Cook 10 cooked order 369
749 Jun 14 2024 +03 16 35 00: Cook 5 cooked order 377
750 Jun 14 2024 +03 16 35 00: Delivery 4 delivered order 370
751 Jun 14 2024 +03 16 35 00: Cook 4 cooked order 376
752 Jun 14 2024 +03 16 35 01: Cook 2 cooked order 375
753 Jun 14 2024 +03 16 35 01: Cook 3 cooked order 379
754 Jun 14 2024 +03 16 35 01: Cook 1 cooked order 372
755 Jun 14 2024 +03 16 35 01: Cook 7 cooked order 373
756 Jun 14 2024 +03 16 35 01: Cook 9 cooked order 380
757 Jun 14 2024 +03 16 35 01: Cook 5 cooked order 387
758 Jun 14 2024 +03 16 35 02: Cook 10 cooked order 380
759 Jun 14 2024 +03 16 35 02: Delivery 5 delivered order 376
760 Jun 14 2024 +03 16 35 02: Cook 6 cooked order 382
761 Jun 14 2024 +03 16 35 02: Shop has burned
```