CSE 344 – SYSTEM PROGRAMMING - HW_5 REPORT

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First of all, I used getopt() for argument parsing and found the given input file name. And then, I counted the line of the given file and found the number of florist and client with my getFloristAndClientsNumber() function.

Accoring to number of client and florist, I parsed the given file and created my array which used in the program. These are flories(Name,Xcoor,YCoor etc...) and client(Name, etc…). Each index of these arrays include the information about the clients and florist.

Ex: If there is 4 florist, my floriesName array include exactly 4 element. First index has the name of the first florist. First index of the XCoor has the x coordinate of the first florist and then ...

For the threads queues, I have the queue arrays for exactly the number of florist. Each of them have a request array which is length of 100. Above of 100 is queue overflow. Request is my typedef struct. It is include the necessary information about the client requests.

I calculate the distance and find the best florist. And then, I assign the request to the releated florist queue.

Florist threads wait until the some request available in the queue with respect to the pthread_cond_wait().

Florist threads find the time according to distance and speed and also random time. And then sleep for time ms according to HW instructions. *"You can simulate it by letting the thread sleep for a random duration (equal to the time of preparation + time of delivery)."*

Threads returns their information to the main thread at the end of the their executions with respect to the phtread_join().

At the end, main thread takes the detail of the all threads. And then, print the result to the terminal nicely formatted.

I write the signal handler for SIGINT (CTRL + C).

Hint: There is a two newline in the given data.dat file at the end. So, my parser needs to the exactly two newline at the end. For my getFloristAndClientsNumber() function...

Sample Output of My Program is in the next page…

Thank You.   Yağız Döner 141044062

```
mrdoner34@mrdoner34: ~/Desktop/System/SystemH5

mrdoner34@mrdoner34:~/Desktop/System/SystemH5$ make run
./141044062 -i data.dat
Florist application initializing from file: data.dat
3 florists have been created
Processing requests
Florist Fatma has delivered a clove to client2  in 270ms
Florist Ayse has delivered a orchid to client4  in 219ms
Florist Murat has delivered a orchid to client1  in 46ms
Florist Fatma has delivered a rose to client9  in 25ms
Florist Ayse has delivered a orchid to client6  in 166ms
Florist Murat has delivered a daffodil to client3  in 193ms
Florist Fatma has delivered a clove to client13  in 229ms
Florist Ayse has delivered a rose to client7  in 191ms
Florist Murat has delivered a violet to client5  in 273ms
Florist Fatma has delivered a clove to client16  in 249ms
Florist Ayse has delivered a rose to client8  in 153ms
Florist Fatma has delivered a daffodil to client17  in 163ms
Florist Murat has delivered a orchid to client11  in 244ms
Florist Ayse has delivered a violet to client10  in 70ms
Florist Fatma has delivered a daffodil to client18  in 120ms
Florist Murat has delivered a violet to client12  in 28ms
Florist Ayse has delivered a orchid to client14  in 238ms
Florist Fatma has delivered a daffodil to client21  in 98ms
Florist Murat has delivered a orchid to client15  in 194ms
Florist Ayse has delivered a rose to client19  in 29ms
Florist Murat has delivered a orchid to client20  in 41ms
Florist Ayse has delivered a rose to client22  in 61ms
Florist Ayse has delivered a rose to client23  in 156ms
Florist Ayse has delivered a orchid to client24  in 83ms
All requests processed.
Ayse closing shop.
Fatma closing shop.
Murat closing shop.
Sale statistics for today:
-----------------------------------------------
Florist          # of sales          Total time
-----------------------------------------------
Ayse             10                  1366ms
Fatma            7                   1154ms
Murat            7                   1019ms
-----------------------------------------------
mrdoner34@mrdoner34:~/Desktop/System/SystemH5$
```