Operating Systems Programming Assignment 3

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The goal: develop a multi-threaded application that resolves domain names to IP addresses

How to build and run the program

To compile the program, you can use the Makefile I have written. Simply call

```
make
```

To run the program, use this command with the information in <> brackets filled in:

```
./multi-lookup <# requester> <# resolver> <requester log>
<resolver log> [ <data file> ...]
```

For example, to run the domain name resolution with 1 requester thread, 1 resolver thread, output thread information to serviced.txt, output domain names and resolved IP addresses to results.txt, for all 5 provided input files, the run command would look like this:

```
./multi-lookup 1 1 serviced.txt results.txt
input/names1.txt input/names2.txt input/names3.txt
input/names4.txt input/names5.txt
```

File Explanations

The multi-lookup program, encompassed in `multi-lookup.c` and `multi-lookup.h` is the code that actually creates requestor and resolver threads to read and write from a shared buffer and output results to serviced.txt and results.txt

The `queue.c` and `queue.h` is a queue structure implementation I used to store the shared buffer, requestor pool, and resolver pool in queues instead of arrays.

The `util.c` and `util.h` files contain the DNS lookup utility function.

The `input` folder holds the input files with domain names to be resolved by the program.