Network Programming Assignment 2

Files:
1. server.c
2. twoprocesses.c
3. twothreads.c
4. nonblockingio.c
5. blockingio.c
6. serverb.c (For part (e) and (f))
7. nonblockingconnect.c
8. multiplethreads.c

Compile the threads files using
$gcc -o exe twothreads.c -pthread

For part (e) and (f), use serverb.c file.
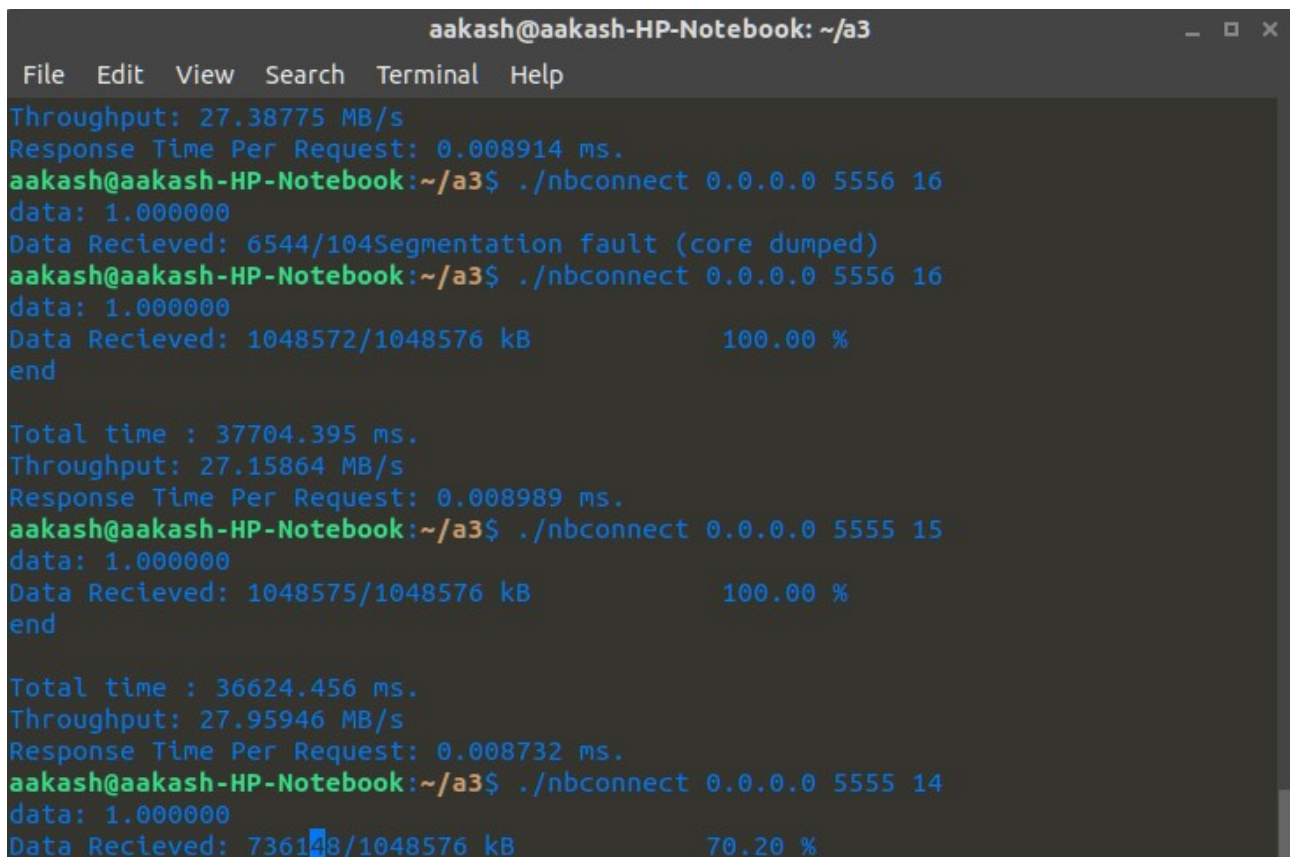
Usage: ./nonblockingconnect <server_ip> <server_port> <no_connections>

Initially, no. of connections and data to be sent are exchanged, then required no. of connectons are generated from the client side.
Server then accepts all connections and starts sending data equally among all the sockets.
In each packet, server sends the offset where the given data string must be written in the output file.

On the client side, the progress is contnuosly shown as data recieved. After the recieve is complete, the client then displays: a) Total Time, b) Throughput, c) Response Time Per Request

Progress Display

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                                           aakash@aakash-HP-Notebook: ~/a3        _  □  ×
   File   Edit   View   Search   Terminal   Help

Total time : 40741.199 ms.
Throughput: 25.13426 MB/s
Response Time Per Request: 0.009713 ms.
aakash@aakash-HP-Notebook:~/a3$ ./nbconnect 0.0.0.0 5556 12
data: 1.000000
Data Recieved: 793520Segmentation fault (core dumped)
aakash@aakash-HP-Notebook:~/a3$ ./nbconnect 0.0.0.0 5556 12
data: 1.000000
Data Recieved: 1048555/1048576 kB              100.00 %
end

Total time : 38651.903 ms.
Throughput: 26.49287 MB/s
Response Time Per Request: 0.009215 ms.
aakash@aakash-HP-Notebook:~/a3$ ./nbconnect 0.0.0.0 5556 11
data: 1.000000
Data Recieved: 1048575/1048576 kB              100.00 %
end

Total time : 38406.664 ms.
Throughput: 26.66204 MB/s
Response Time Per Request: 0.009157 ms.
aakash@aakash-HP-Notebook:~/a3$ ▌
```

<u>Output Display</u>

For part (a) to (d), user server.c file

Results:

No. Connections	Total Time (msec)	Throughput (MB/s)	Response Time Per Request (msec)
<u>Two Processes</u>	17110.238	59.84721	0.004079
<u>Two Threads</u>	16369.522	62.55528	0.003903
<u>Non Blocking IO</u>	70722.675	14.47909	0.016862
<u>Blocking IO</u>	48630.556	21.05672	0.011594