

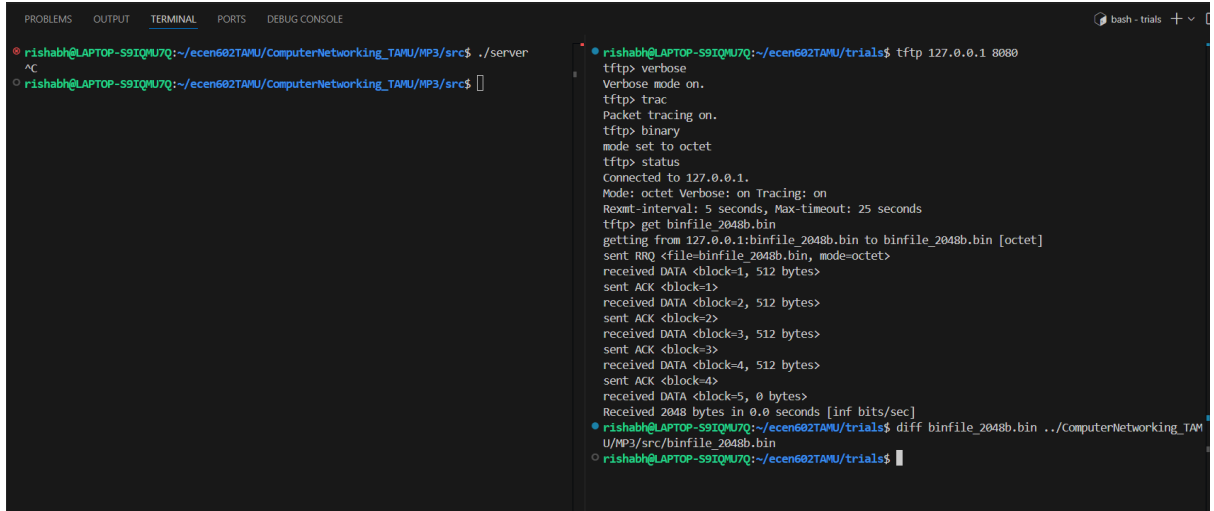
Trivial File Transfer Protocol (TFTP) Server over UDP

ECEN 602 Network Programming Assignment 3

Team ID: 9

Below are the test cases performed on the TFTP Server over UDP:

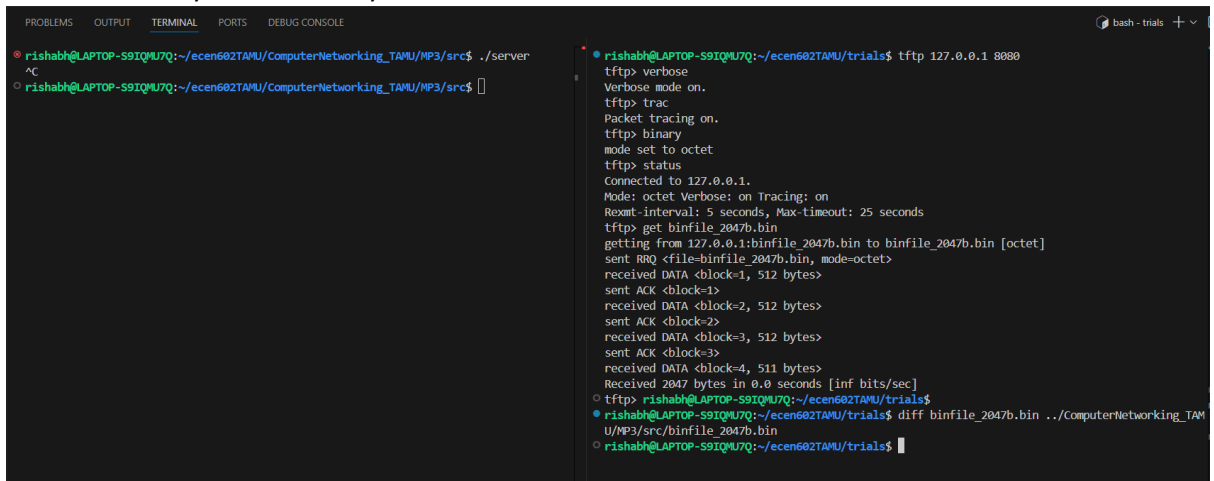
1. Transfer a binary file of 2048 bytes and check that it matches the source file.



```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server
^C
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> binary
mode set to octet
tftp> status
Connected to 127.0.0.1.
Mode: octet Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> get binfile_2048b.bin
getting from 127.0.0.1:binfile_2048b.bin to binfile_2048b.bin [octet]
sent RRQ <file=binfile_2048b.bin, mode=octet>
received DATA <block=1, 512 bytes>
sent ACK <block=1>
received DATA <block=2, 512 bytes>
sent ACK <block=2>
received DATA <block=3, 512 bytes>
sent ACK <block=3>
received DATA <block=4, 512 bytes>
sent ACK <block=4>
received DATA <block=5, 0 bytes>
Received 2048 bytes in 0.0 seconds [inf bits/sec]
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff binfile_2048b.bin ../ComputerNetworking_TAMU/MP3/src/binfile_2048b.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

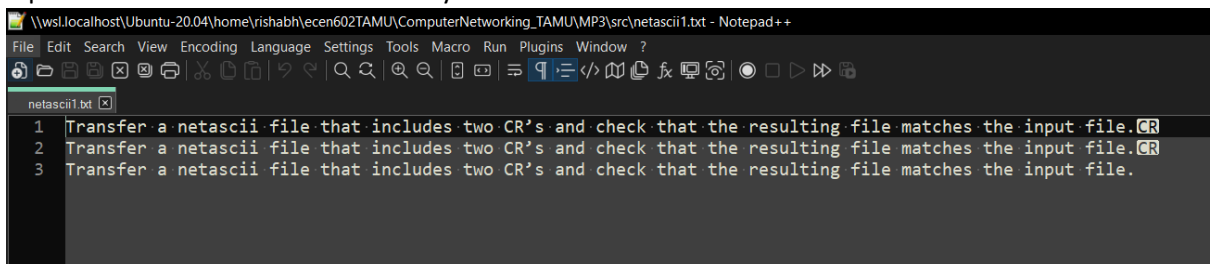
2. Transfer a binary file of 2047 bytes and check that it matches the source file.



```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server
^C
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> binary
mode set to octet
tftp> status
Connected to 127.0.0.1.
Mode: octet Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> get binfile_2047b.bin
getting from 127.0.0.1:binfile_2047b.bin to binfile_2047b.bin [octet]
sent RRQ <file=binfile_2047b.bin, mode=octet>
received DATA <block=1, 512 bytes>
sent ACK <block=1>
received DATA <block=2, 512 bytes>
sent ACK <block=2>
received DATA <block=3, 512 bytes>
sent ACK <block=3>
received DATA <block=4, 511 bytes>
Received 2047 bytes in 0.0 seconds [inf bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff binfile_2047b.bin ../ComputerNetworking_TAMU/MP3/src/binfile_2047b.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

3. Transfer a netascii file that includes two CR's and check that the resulting file matches the input file. The netascii file is of 323 bytes and looks like below:



```
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
netascii1.txt
1 Transfer a netascii file that includes two CR's and check that the resulting file matches the input file.CR
2 Transfer a netascii file that includes two CR's and check that the resulting file matches the input file.CR
3 Transfer a netascii file that includes two CR's and check that the resulting file matches the input file.
```

Below is the TFTP transfer result:

```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server
^C
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> status
Connected to 127.0.0.1.
Mode: netascii Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> get netasciii.txt
getting from 127.0.0.1:netasciii.txt to netasciii.txt [netascii]
sent RRQ <file=netasciii.txt, mode=netascii>
received DATA <block=1, 325 bytes>
Received 325 bytes in 0.0 seconds [inf bits/sec]
tftp>
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff netasciii.txt ../ComputerNetworking_TAMU/MP3/src/netasciii.txt
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

4. Transfer a binary file of 34 MB and see if block number wrap-around works:
The block number for the DATA packets goes from 1 to 65535, and then wraps around to start from 1 and goes to 4097.

```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server
^C
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$

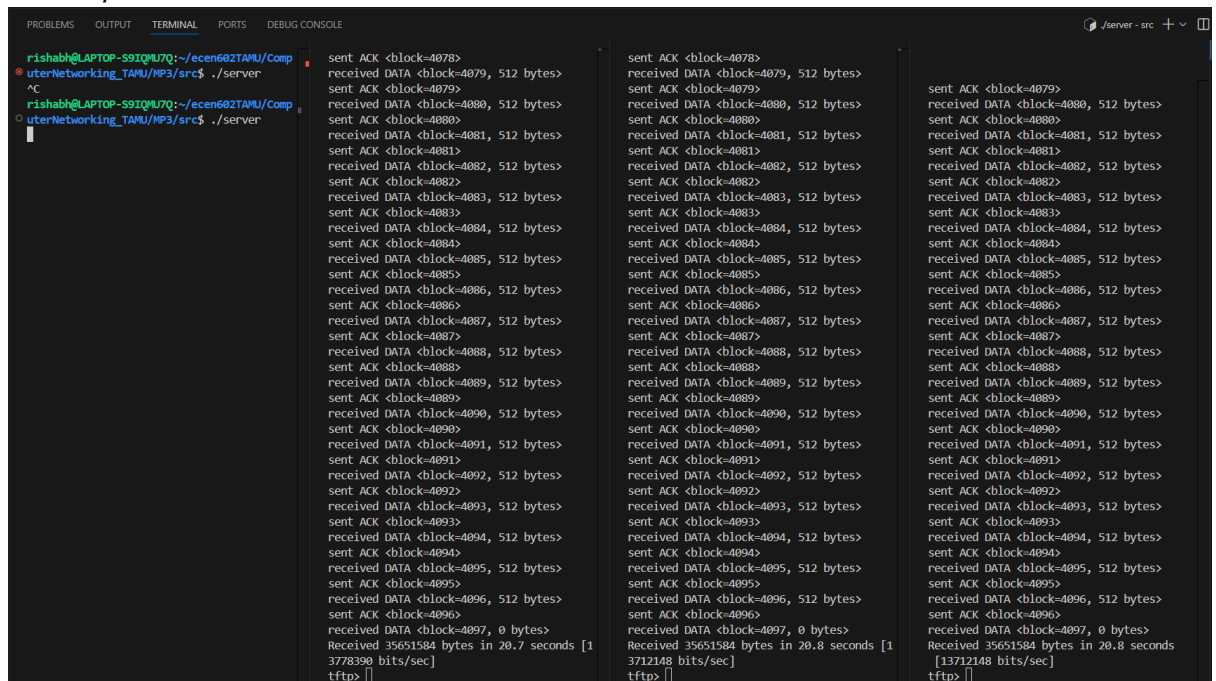
sent ACK <block=4079>
received DATA <block=4080, 512 bytes>
sent ACK <block=4080>
received DATA <block=4081, 512 bytes>
sent ACK <block=4081>
received DATA <block=4082, 512 bytes>
sent ACK <block=4082>
received DATA <block=4083, 512 bytes>
sent ACK <block=4083>
received DATA <block=4084, 512 bytes>
sent ACK <block=4084>
received DATA <block=4085, 512 bytes>
sent ACK <block=4085>
received DATA <block=4086, 512 bytes>
sent ACK <block=4086>
received DATA <block=4087, 512 bytes>
sent ACK <block=4087>
received DATA <block=4088, 512 bytes>
sent ACK <block=4088>
received DATA <block=4089, 512 bytes>
sent ACK <block=4089>
received DATA <block=4090, 512 bytes>
sent ACK <block=4090>
received DATA <block=4091, 512 bytes>
sent ACK <block=4091>
received DATA <block=4092, 512 bytes>
sent ACK <block=4092>
received DATA <block=4093, 512 bytes>
sent ACK <block=4093>
received DATA <block=4094, 512 bytes>
sent ACK <block=4094>
received DATA <block=4095, 512 bytes>
sent ACK <block=4095>
received DATA <block=4096, 512 bytes>
sent ACK <block=4096>
received DATA <block=4097, 0 bytes>
Received 35651584 bytes in 7.2 seconds [39612871 bits/sec]
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff binfile_34MB.bin ../computerNetworking_TAMU/MP3/src/binfile_34MB.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

5. Check that you receive an error message if you try to transfer a file that does not exist and that your server cleans up and the child process exits.

```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server
^C
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> status
Connected to 127.0.0.1.
Mode: netascii Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> get randomfile.txt
getting from 127.0.0.1:randomfile.txt to randomfile.txt [netascii]
sent RRQ <file=randomfile.txt, mode=netascii>
received ERROR <code=1, msg=>
Error code 1:
tftp>
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

6. Connect to the TFTP server with three clients simultaneously and test that the transfers work correctly.



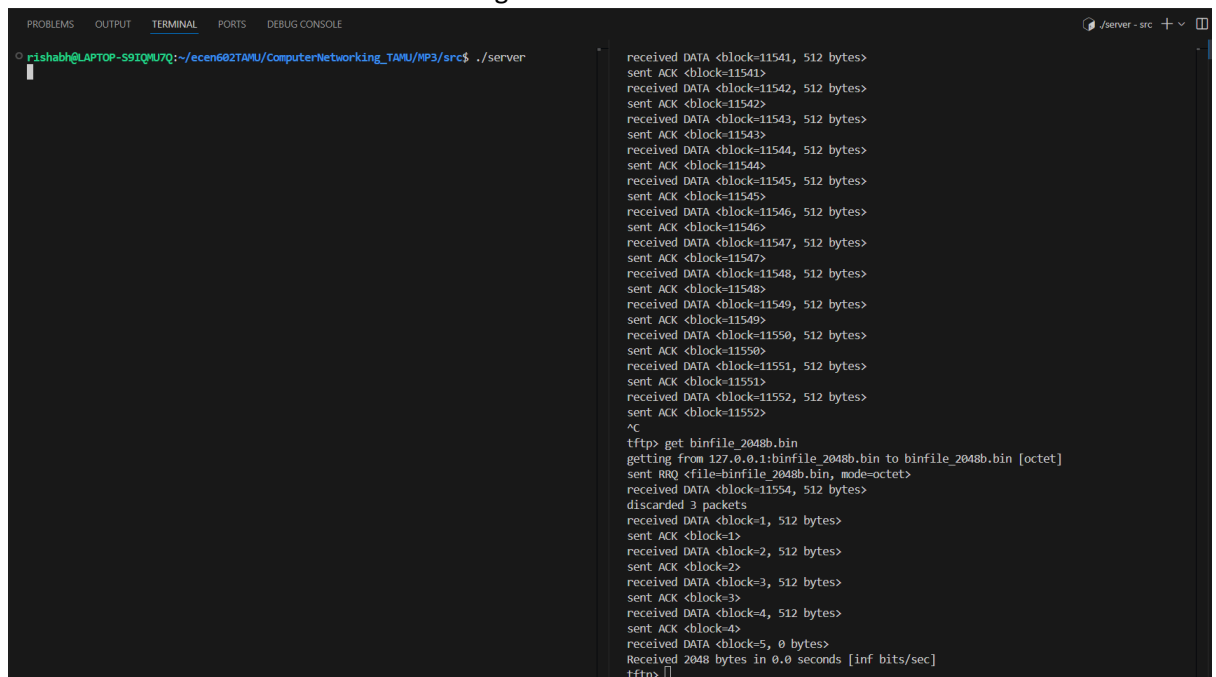
```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S91QMU7Q:~/ecen682TAMU/Comp
uterNetworking_TAMU/MP3/src$ ./server
rishabh@LAPTOP-S91QMU7Q:~/ecen682TAMU/Comp
uterNetworking_TAMU/MP3/src$ ./server

sent ACK <block=4078>
received DATA <block=4079, 512 bytes>
sent ACK <block=4079>
received DATA <block=4080, 512 bytes>
sent ACK <block=4080>
received DATA <block=4081, 512 bytes>
sent ACK <block=4081>
received DATA <block=4082, 512 bytes>
sent ACK <block=4082>
received DATA <block=4083, 512 bytes>
sent ACK <block=4083>
received DATA <block=4084, 512 bytes>
sent ACK <block=4084>
received DATA <block=4085, 512 bytes>
sent ACK <block=4085>
received DATA <block=4086, 512 bytes>
sent ACK <block=4086>
received DATA <block=4087, 512 bytes>
sent ACK <block=4087>
received DATA <block=4088, 512 bytes>
sent ACK <block=4088>
received DATA <block=4089, 512 bytes>
sent ACK <block=4089>
received DATA <block=4090, 512 bytes>
sent ACK <block=4090>
received DATA <block=4091, 512 bytes>
sent ACK <block=4091>
received DATA <block=4092, 512 bytes>
sent ACK <block=4092>
received DATA <block=4093, 512 bytes>
sent ACK <block=4093>
received DATA <block=4094, 512 bytes>
sent ACK <block=4094>
received DATA <block=4095, 512 bytes>
sent ACK <block=4095>
received DATA <block=4096, 512 bytes>
sent ACK <block=4096>
received DATA <block=4097, 0 bytes>
Received 35651584 bytes in 20.7 seconds [1
3778390 bits/sec]
tftp>

sent ACK <block=4078>
received DATA <block=4079, 512 bytes>
sent ACK <block=4079>
received DATA <block=4080, 512 bytes>
sent ACK <block=4080>
received DATA <block=4081, 512 bytes>
sent ACK <block=4081>
received DATA <block=4082, 512 bytes>
sent ACK <block=4082>
received DATA <block=4083, 512 bytes>
sent ACK <block=4083>
received DATA <block=4084, 512 bytes>
sent ACK <block=4084>
received DATA <block=4085, 512 bytes>
sent ACK <block=4085>
received DATA <block=4086, 512 bytes>
sent ACK <block=4086>
received DATA <block=4087, 512 bytes>
sent ACK <block=4087>
received DATA <block=4088, 512 bytes>
sent ACK <block=4088>
received DATA <block=4089, 512 bytes>
sent ACK <block=4089>
received DATA <block=4090, 512 bytes>
sent ACK <block=4090>
received DATA <block=4091, 512 bytes>
sent ACK <block=4091>
received DATA <block=4092, 512 bytes>
sent ACK <block=4092>
received DATA <block=4093, 512 bytes>
sent ACK <block=4093>
received DATA <block=4094, 512 bytes>
sent ACK <block=4094>
received DATA <block=4095, 512 bytes>
sent ACK <block=4095>
received DATA <block=4096, 512 bytes>
sent ACK <block=4096>
received DATA <block=4097, 0 bytes>
Received 35651584 bytes in 20.8 seconds [1
3712148 bits/sec]
tftp>

sent ACK <block=4079>
received DATA <block=4080, 512 bytes>
sent ACK <block=4080>
received DATA <block=4081, 512 bytes>
sent ACK <block=4081>
received DATA <block=4082, 512 bytes>
sent ACK <block=4082>
received DATA <block=4083, 512 bytes>
sent ACK <block=4083>
received DATA <block=4084, 512 bytes>
sent ACK <block=4084>
received DATA <block=4085, 512 bytes>
sent ACK <block=4085>
received DATA <block=4086, 512 bytes>
sent ACK <block=4086>
received DATA <block=4087, 512 bytes>
sent ACK <block=4087>
received DATA <block=4088, 512 bytes>
sent ACK <block=4088>
received DATA <block=4089, 512 bytes>
sent ACK <block=4089>
received DATA <block=4090, 512 bytes>
sent ACK <block=4090>
received DATA <block=4091, 512 bytes>
sent ACK <block=4091>
received DATA <block=4092, 512 bytes>
sent ACK <block=4092>
received DATA <block=4093, 512 bytes>
sent ACK <block=4093>
received DATA <block=4094, 512 bytes>
sent ACK <block=4094>
received DATA <block=4095, 512 bytes>
sent ACK <block=4095>
received DATA <block=4096, 512 bytes>
sent ACK <block=4096>
received DATA <block=4097, 0 bytes>
Received 35651584 bytes in 20.8 seconds
[13712148 bits/sec]
tftp>
```

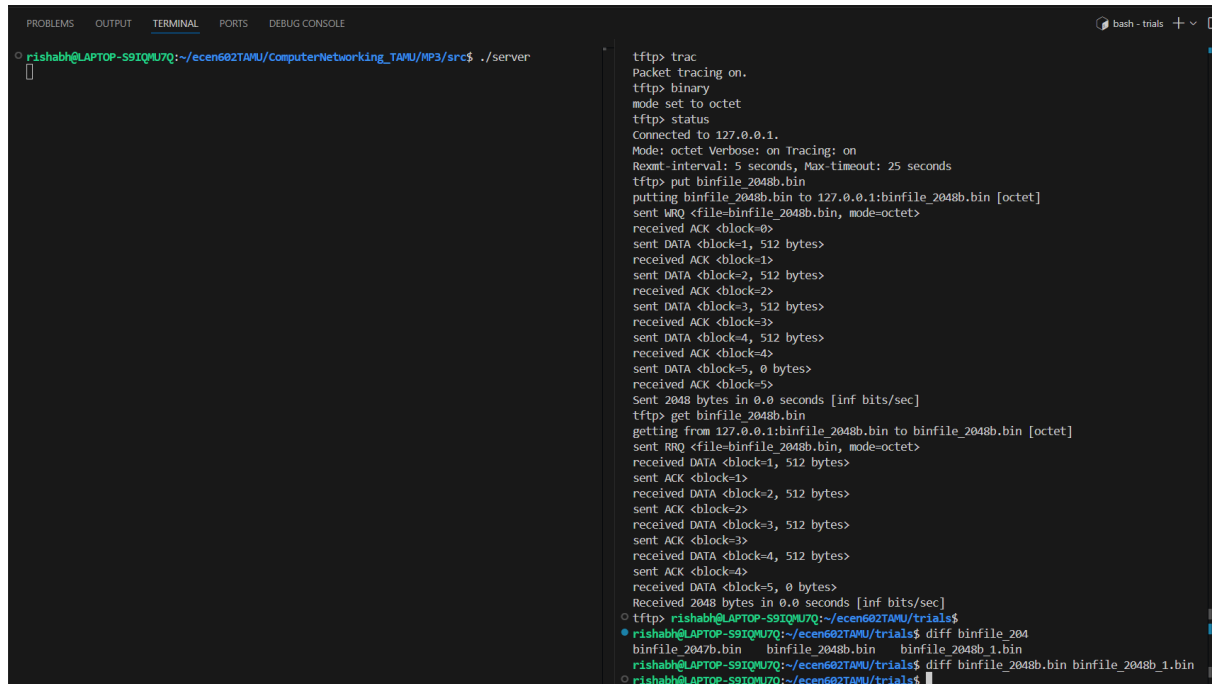
7. Terminate the TFTP client in the middle of a transfer and see if your TFTP server recognizes after 10 timeouts that the client is no longer there.



```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S91QMU7Q:~/ecen682TAMU/computerNetworking_TAMU/MP3/src$ ./server

received DATA <block=11541, 512 bytes>
sent ACK <block=11541>
received DATA <block=11542, 512 bytes>
sent ACK <block=11542>
received DATA <block=11543, 512 bytes>
sent ACK <block=11543>
received DATA <block=11544, 512 bytes>
sent ACK <block=11544>
received DATA <block=11545, 512 bytes>
sent ACK <block=11545>
received DATA <block=11546, 512 bytes>
sent ACK <block=11546>
received DATA <block=11547, 512 bytes>
sent ACK <block=11547>
received DATA <block=11548, 512 bytes>
sent ACK <block=11548>
received DATA <block=11549, 512 bytes>
sent ACK <block=11549>
received DATA <block=11550, 512 bytes>
sent ACK <block=11550>
received DATA <block=11551, 512 bytes>
sent ACK <block=11551>
received DATA <block=11552, 512 bytes>
sent ACK <block=11552>
^C
tftp> get binfile_2048b.bin
getting from 127.0.0.1:binfile_2048b.bin to binfile_2048b.bin [octet]
sent RRQ <file=binfile_2048b.bin, mode=octet>
received DATA <block=11554, 512 bytes>
discarded 3 packets
received DATA <block=1, 512 bytes>
sent ACK <block=1>
received DATA <block=2, 512 bytes>
sent ACK <block=2>
received DATA <block=3, 512 bytes>
sent ACK <block=3>
received DATA <block=4, 512 bytes>
sent ACK <block=4>
received DATA <block=5, 0 bytes>
Received 2048 bytes in 0.0 seconds [inf bits/sec]
tftp>
```

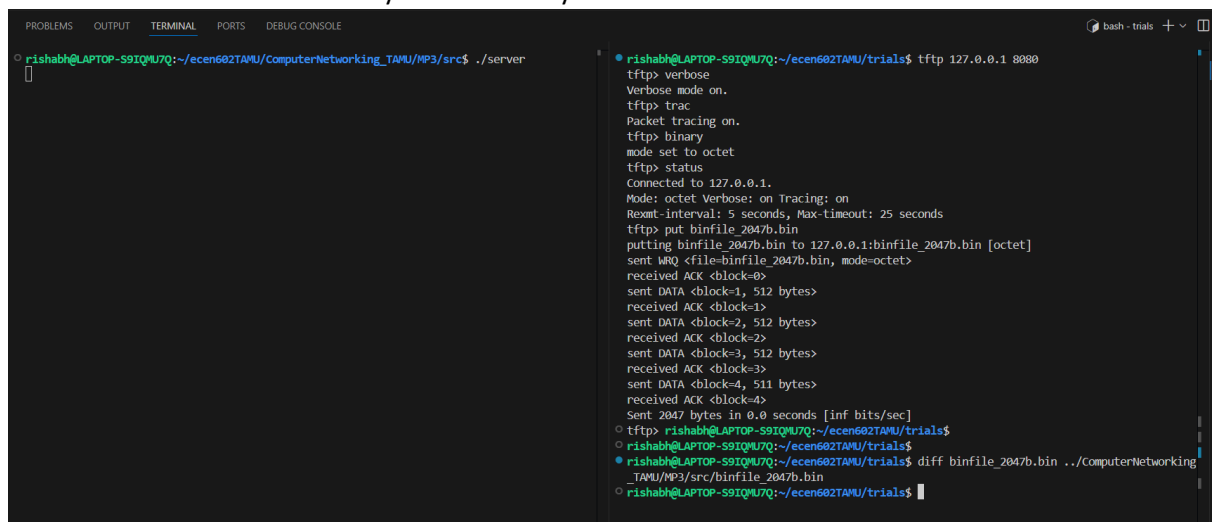
8. **Bonus Feature:** Transfer a binary file of 2048 bytes and transfer it back and then check that it matches the source file.



```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server

tftp> trac
Packet tracing on.
tftp> binary
mode set to octet
tftp> status
Connected to 127.0.0.1.
Mode: octet Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> put binfile_2048b.bin
putting binfile_2048b.bin to 127.0.0.1:binfile_2048b.bin [octet]
sent WRQ <file=binfile_2048b.bin, mode=octet>
received ACK <block=0>
sent DATA <block=1, 512 bytes>
received ACK <block=1>
sent DATA <block=2, 512 bytes>
received ACK <block=2>
sent DATA <block=3, 512 bytes>
received ACK <block=3>
sent DATA <block=4, 512 bytes>
received ACK <block=4>
sent DATA <block=5, 0 bytes>
received ACK <block=5>
Sent 2048 bytes in 0.0 seconds [inf bits/sec]
tftp> get binfile_2048b.bin
getting from 127.0.0.1:binfile_2048b.bin to binfile_2048b.bin [octet]
sent RRQ <file=binfile_2048b.bin, mode=octet>
received DATA <block=1, 512 bytes>
sent ACK <block=1>
received DATA <block=2, 512 bytes>
sent ACK <block=2>
received DATA <block=3, 512 bytes>
sent ACK <block=3>
received DATA <block=4, 512 bytes>
sent ACK <block=4>
received DATA <block=5, 0 bytes>
Received 2048 bytes in 0.0 seconds [inf bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff binfile_204
binfile_2047b.bin binfile_2048b.bin binfile_2048b_1.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff binfile_2048b.bin binfile_2048b_1.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

9. **Bonus Feature:** Transfer a binary file of 2047 bytes and check that it matches the source file.



```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8880
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> binary
mode set to octet
tftp> status
Connected to 127.0.0.1.
Mode: octet Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> put binfile_2047b.bin
putting binfile_2047b.bin to 127.0.0.1:binfile_2047b.bin [octet]
sent WRQ <file=binfile_2047b.bin, mode=octet>
received ACK <block=0>
sent DATA <block=1, 512 bytes>
received ACK <block=1>
sent DATA <block=2, 512 bytes>
received ACK <block=2>
sent DATA <block=3, 512 bytes>
received ACK <block=3>
sent DATA <block=4, 511 bytes>
received ACK <block=4>
Sent 2047 bytes in 0.0 seconds [inf bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff binfile_2047b.bin ../computerNetworking
_TAMU/MP3/src/binfile_2047b.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

10. **Bonus Feature:** Transfer a netascii file that includes two CR's and transfer it back, and then check that the resulting file matches the input file.

```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> ascii
mode set to netascii
tftp> status
Connected to 127.0.0.1.
Mode: netascii Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> put netascii1.txt
putting netascii1.txt to 127.0.0.1:netascii1.txt [netascii]
sent WRQ <file=netascii1.txt, mode=netascii>
received ACK <block=0>
sent DATA <block=1, 325 bytes>
received ACK <block=1>
Sent 325 bytes in 0.0 seconds [inf bits/sec]
tftp> get netascii1.txt
getting from 127.0.0.1:netascii1.txt to netascii1.txt [netascii]
sent RRQ <file=netascii1.txt, mode=netascii>
received DATA <block=1, 325 bytes>
Received 325 bytes in 0.0 seconds [inf bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ diff netascii1.txt netascii1_temp.txt
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
```

11. **Bonus Feature:** Check that you receive an error message if you try to transfer a file that already exists and that your server cleans up and the child process exits.

```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> status
Connected to 127.0.0.1.
Mode: netascii Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> put netascii1.txt
putting netascii1.txt to 127.0.0.1:netascii1.txt [netascii]
sent WRQ <file=netascii1.txt, mode=netascii>
received ERROR <code=6, msg=>
Error code 6:
tftp>
```

12. **Bonus Feature:** Connect to the TFTP server with three clients simultaneously and test that the transfers work correctly.

```
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/ComputerNetworking_TAMU/MP3/src$ ./server
sent DATA <block=4082, 512 bytes>
received ACK <block=4082>
sent DATA <block=4083, 512 bytes>
received ACK <block=4083>
sent DATA <block=4084, 512 bytes>
received ACK <block=4084>
sent DATA <block=4085, 512 bytes>
received ACK <block=4085>
sent DATA <block=4086, 512 bytes>
received ACK <block=4086>
sent DATA <block=4087, 512 bytes>
received ACK <block=4087>
sent DATA <block=4088, 512 bytes>
received ACK <block=4088>
sent DATA <block=4089, 512 bytes>
received ACK <block=4089>
sent DATA <block=4090, 512 bytes>
received ACK <block=4090>
sent DATA <block=4091, 512 bytes>
received ACK <block=4091>
sent DATA <block=4092, 512 bytes>
received ACK <block=4092>
sent DATA <block=4093, 512 bytes>
received ACK <block=4093>
sent DATA <block=4094, 512 bytes>
received ACK <block=4094>
sent DATA <block=4095, 512 bytes>
received ACK <block=4095>
sent DATA <block=4096, 512 bytes>
received ACK <block=4096>
sent DATA <block=4097, 0 bytes>
received ACK <block=4097>
Sent 35651584 bytes in 6.9 seconds [41335170 bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ ls diff binfile 2048b.bin ../ComputerNetworking_TAMU/MP3/src/binfile 2048b.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ ls

rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> binary
mode set to octet
tftp> status
Connected to 127.0.0.1.
Mode: octet Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> put binfile 2048b.bin
putting binfile 2048b.bin to 127.0.0.1:binfile 2048b.bin [octet]
sent WRQ <file=binfile 2048b.bin, mode=octet>
received ACK <block=0>
sent DATA <block=1, 512 bytes>
received ACK <block=1>
sent DATA <block=2, 512 bytes>
received ACK <block=2>
sent DATA <block=3, 512 bytes>
received ACK <block=3>
sent DATA <block=4, 512 bytes>
received ACK <block=4>
sent DATA <block=5, 0 bytes>
received ACK <block=5>
Sent 2048 bytes in 0.0 seconds [inf bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftp 127.0.0.1 8080
tftp> verbose
Verbose mode on.
tftp> trac
Packet tracing on.
tftp> binary
mode set to octet
tftp> status
Connected to 127.0.0.1.
Mode: octet Verbose: on Tracing: on
Rexmt-interval: 5 seconds, Max-timeout: 25 seconds
tftp> put binfile 2047b.bin
putting binfile 2047b.bin to 127.0.0.1:binfile 2047b.bin [octet]
sent WRQ <file=binfile 2047b.bin, mode=octet>
received ACK <block=0>
sent DATA <block=1, 512 bytes>
received ACK <block=1>
sent DATA <block=2, 512 bytes>
received ACK <block=2>
sent DATA <block=3, 512 bytes>
received ACK <block=3>
sent DATA <block=4, 511 bytes>
received ACK <block=4>
Sent 2047 bytes in 0.0 seconds [inf bits/sec]
tftp> rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ tftpdiff binfile 2047b.bin ../ComputerNetworking_TAMU/MP3/src/binfile 2047b.bin
rishabh@LAPTOP-S9IQMU7Q:~/ecen602TAMU/trials$ ls
```