



CSE344 MIDTERM REPORT

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SYSTEM

SERVER SIDE

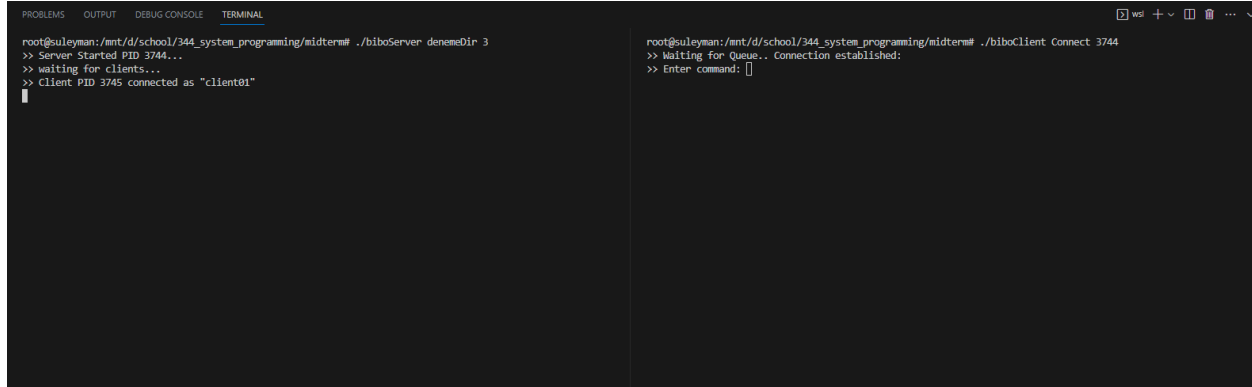
- 1- Create semaphore.
- 2- Create dictionary, specified with argv[1].
- 3- Go to the dictionary with chdir.
- 4- Create log file.
- 5- Set the signals.
- 6- Create FIFO in /tmp.
- 7- Create shared memory.
- 8- Attach the sharedQueue to shared memory.
- 9- Set the semaphore.
- 10- Get client_pid which try to connect.
- 11- If queue is full, make it to wait for slot into the queue with semaphore.
- 12- If queue is not full, create FIFO for connected client.
- 13- Create FIFO for connected client response messages.
- 14- Add client to sharedQueue.
- 15- Create child process for client with fork.
- 16- Call handleClientRequest function until it returns 1 or 2 which returned when request is quit – killServer.
- 17- In the handleClientRequest function, write request to log file.
- 18- Send request to process function.
- 19- Complete request in process function:
 - a- write expected string to fifo (help).
 - b- write available commands to fifo (list)
 - c- Read specified file and write it to fifo (readF)
 - d- Write taken string to specified file (writeF)
 - e- Move specified file in Server folder to client side by using rename method (download)
 - f- Move specified file in client side to Server folder by using rename method (upload)
 - g- Terminate client and remove it from sharedQueue (quit)
 - h- Terminate all clients in the sharedQueue and terminate Server (killServer)
- 20- terminateAllClients function terminate all clients in the sharedQueue with kill function by using client_pid.

CLIENT SIDE

- 1- Set the signals.
- 2- Create FIFO
- 3- Open server fifo and write client pid to it. It is kind a connection request.
- 4- If server queue is full, it will wait until a empty slot.
- 5- After connection, call handleUserInput function.
- 6- This function in while loop until terminate signal or quit request.
- 7- It takes user input as a request, write it to client fifo and take response with reading client response fifo.

RESULTS

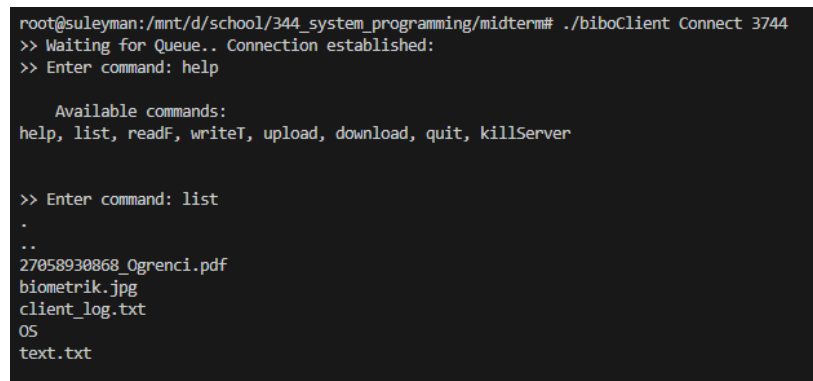
Connection:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboServer denemeDir 3
>> Server Started PID 3744...
>> waiting for clients...
>> Client PID 3745 connected as "client01"

root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3744
>> Waiting for Queue.. Connection established:
>> Enter command: 
```

help – list

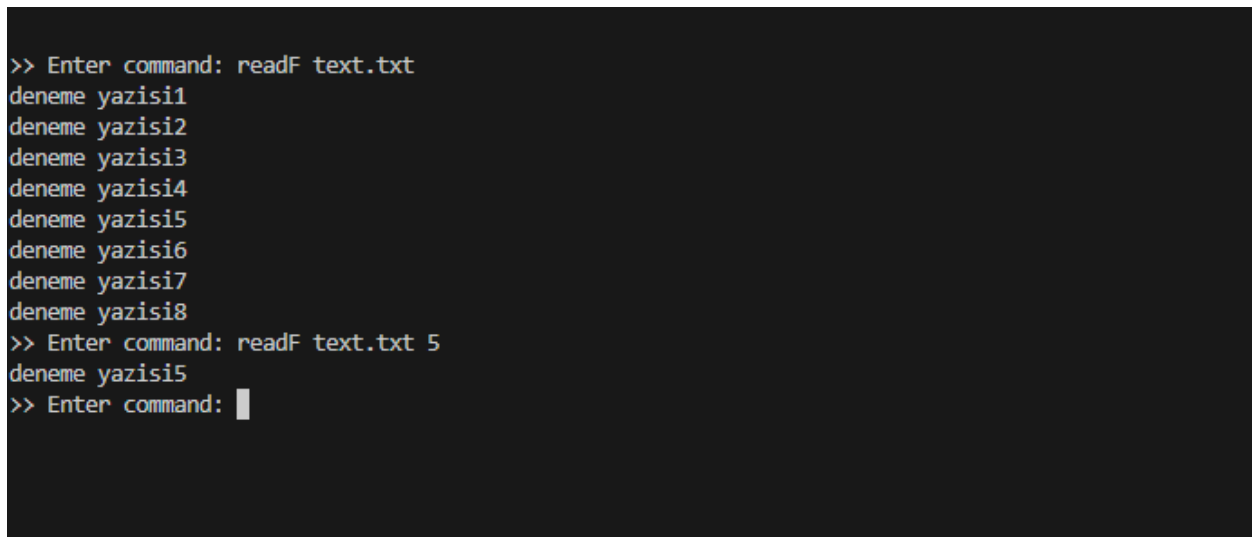


```
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3744
>> Waiting for Queue.. Connection established:
>> Enter command: help

    Available commands:
help, list, readF, writeF, upload, download, quit, killServer

>> Enter command: list
.
..
27058930868_Ogrenci.pdf
biometrik.jpg
client_log.txt
05
text.txt
```

readF



```
>> Enter command: readF text.txt
deneme yazisi1
deneme yazisi2
deneme yazisi3
deneme yazisi4
deneme yazisi5
deneme yazisi6
deneme yazisi7
deneme yazisi8
>> Enter command: readF text.txt 5
deneme yazisi5
>> Enter command: 
```

RESULTS

writeF

```
>> Enter command: writeF text.txt 4 hello world  
  
    write process completed succesfully..  
  
>> Enter command: readF text.txt  
deneme yazisi1  
deneme yazisi2  
deneme yazisi3  
hello world  
deneme yazisi5  
deneme yazisi6  
deneme yazisi7  
deneme yazisi8  
>> Enter command: █
```

download:

```
>> Enter command: list  
.  
..  
27058930868_Ogrenci.pdf  
biometrik.jpg  
client_log.txt  
OS  
text.txt  
  
>> Enter command: download text.txt  
  
    file transfer request received. Beginning file transfer:  
    123 bytes transferred:  
  
>> Enter command: download 27058930868_Ogrenci.pdf  
  
    file transfer request received. Beginning file transfer:  
    103488 bytes transferred:  
  
>> Enter command: list  
.  
..  
biometrik.jpg  
client_log.txt  
OS  
  
>> Enter command: █
```

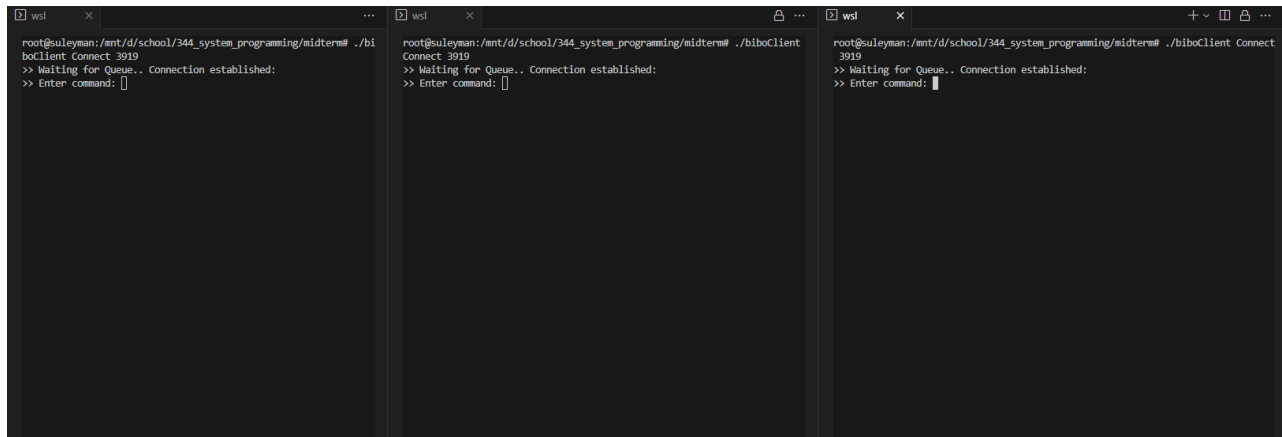
upload:

```
>> Enter command: upload 27058930868_Ogrenci.pdf  
  
    file transfer request received. Beginning file transfer:  
    103488 bytes transferred:  
  
>> Enter command: list  
.  
..  
27058930868_Ogrenci.pdf  
biometrik.jpg  
client_log.txt  
OS  
  
>> Enter command: █
```

RESULTS

Max client, wait in queue, quit, when the slot is empty connect test:

client01, client02, client03:

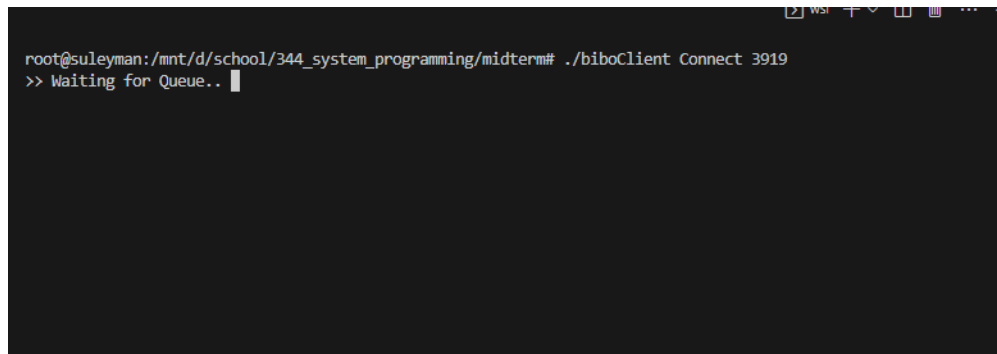
Three terminal windows are shown side-by-side. Each window has a title bar with 'wsl' and a close button. The first window on the left shows the prompt 'root@suleyman:/mnt/d/school/344_system_programming/midterm#' followed by the command './biboClient Connect 3919'. The output is '>> Waiting for Queue.. Connection established:' followed by '>> Enter command:'. The middle window shows the same prompt and command, with the same output. The third window on the right also shows the same prompt and command, with the same output. All three windows have a dark background and light-colored text.

```
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3919
>> Waiting for Queue.. Connection established:
>> Enter command:

root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3919
>> Waiting for Queue.. Connection established:
>> Enter command:

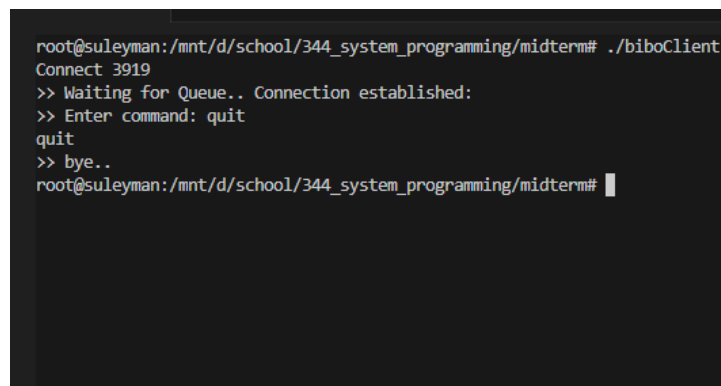
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3919
>> Waiting for Queue.. Connection established:
>> Enter command:
```

client04:

A single terminal window is shown. It has a title bar with 'wsl' and window control buttons. The prompt is 'root@suleyman:/mnt/d/school/344_system_programming/midterm#'. The command entered is './biboClient Connect 3919'. The output is '>> Waiting for Queue..' followed by a cursor.

```
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3919
>> Waiting for Queue..
```

client02 quit:

A single terminal window is shown. It has a title bar with 'wsl' and window control buttons. The prompt is 'root@suleyman:/mnt/d/school/344_system_programming/midterm#'. The command entered is './biboClient Connect 3919'. The output is '>> Waiting for Queue.. Connection established:'. Then the command 'quit' is entered, and the output is '>> bye..'. Finally, the prompt 'root@suleyman:/mnt/d/school/344_system_programming/midterm#' is shown with a cursor.

```
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboClient Connect 3919
>> Waiting for Queue.. Connection established:
>> Enter command: quit
quit
>> bye..
root@suleyman:/mnt/d/school/344_system_programming/midterm#
```

RESULTS

Server output:

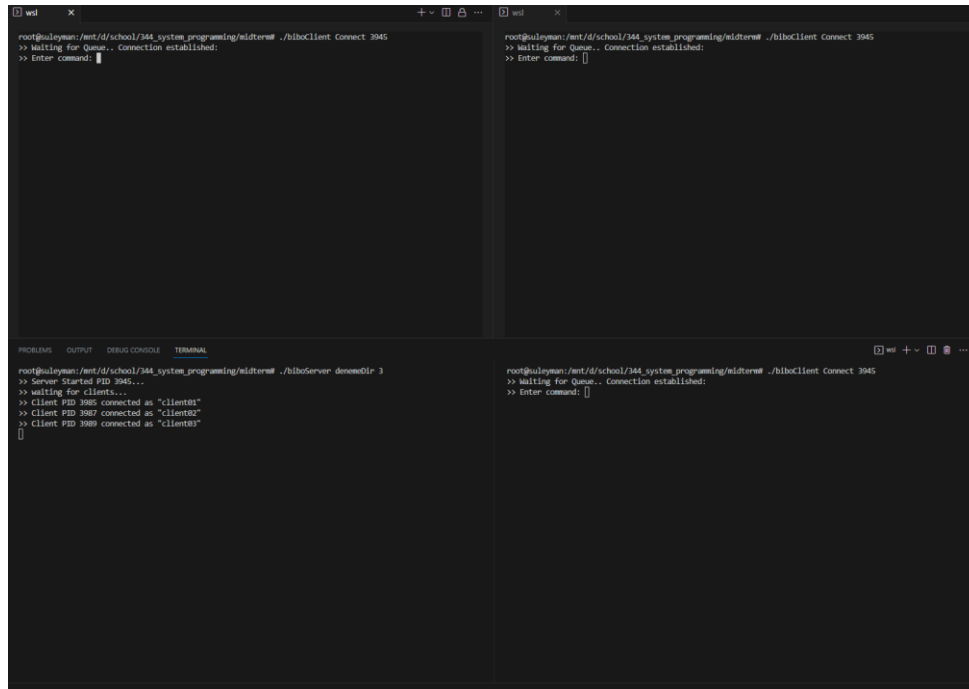
```
root@suleyman:/mnt/d/school/344_system_programming/midterm# ./biboServer denemeDir 3
>> Server Started PID 3919...
>> waiting for clients...
>> Client PID 3924 connected as "client01"
>> Client PID 3928 connected as "client02"
>> Client PID 3930 connected as "client03"
>> Connection request PID 3932... Que FULL
>> "client03" disconnected...
>> Client PID 3932 connected as "client04"
█
```

After a few requests, logfile:

```
client_log.txt x
denemeDir > client_log.txt
1 "client02": quit
2 "client04": help
3 "client03": list
4 "client01": upload text.txt
5 "client04": download 05
6 "client04": list
7 "client04": upload text.txt
8
```

RESULTS

Before killServer:

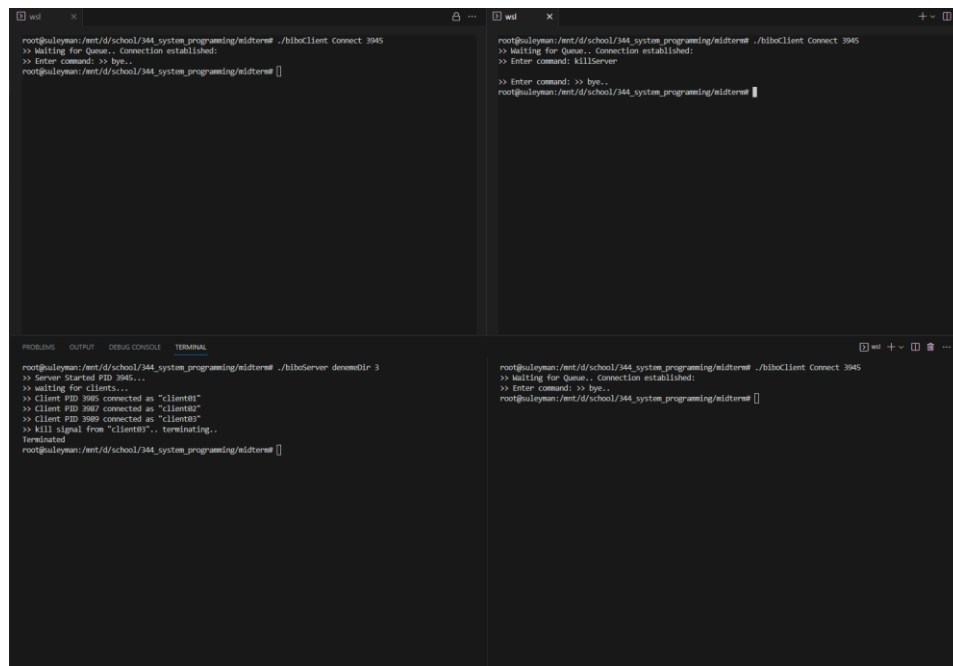


The screenshot shows two terminal windows. The left window is the server's terminal, and the right window is the client's terminal. Both show that a connection has been established and the client is waiting for a command.

```
root@bullyman:/mnt/d/school/344_system_programming/midterm# ./hiboClient Connect 3945
>> Waiting for Ques... Connection established:
>> Enter Command:

root@bullyman:/mnt/d/school/344_system_programming/midterm# ./hiboServer demoDir 3
>> Server Started PID 3945...
>> waiting for clients...
>> Client PID 3985 connected as "client85"
>> Client PID 3987 connected as "client87"
>> Client PID 3989 connected as "client89"
[]
```

After killServer:



The screenshot shows the same two terminal windows after the killServer command has been executed. The server terminal now shows that the client has terminated, and the client terminal shows that the connection has been closed.

```
root@bullyman:/mnt/d/school/344_system_programming/midterm# ./hiboClient Connect 3945
>> Waiting for Ques... Connection established:
>> Enter Command: >> bye..
root@bullyman:/mnt/d/school/344_system_programming/midterm# []

root@bullyman:/mnt/d/school/344_system_programming/midterm# ./hiboServer demoDir 3
>> Server Started PID 3945...
>> waiting for clients...
>> Client PID 3985 connected as "client85"
>> Client PID 3987 connected as "client87"
>> Client PID 3989 connected as "client89"
>> kill signal from "client89".. terminating..
terminated
root@bullyman:/mnt/d/school/344_system_programming/midterm# []
```