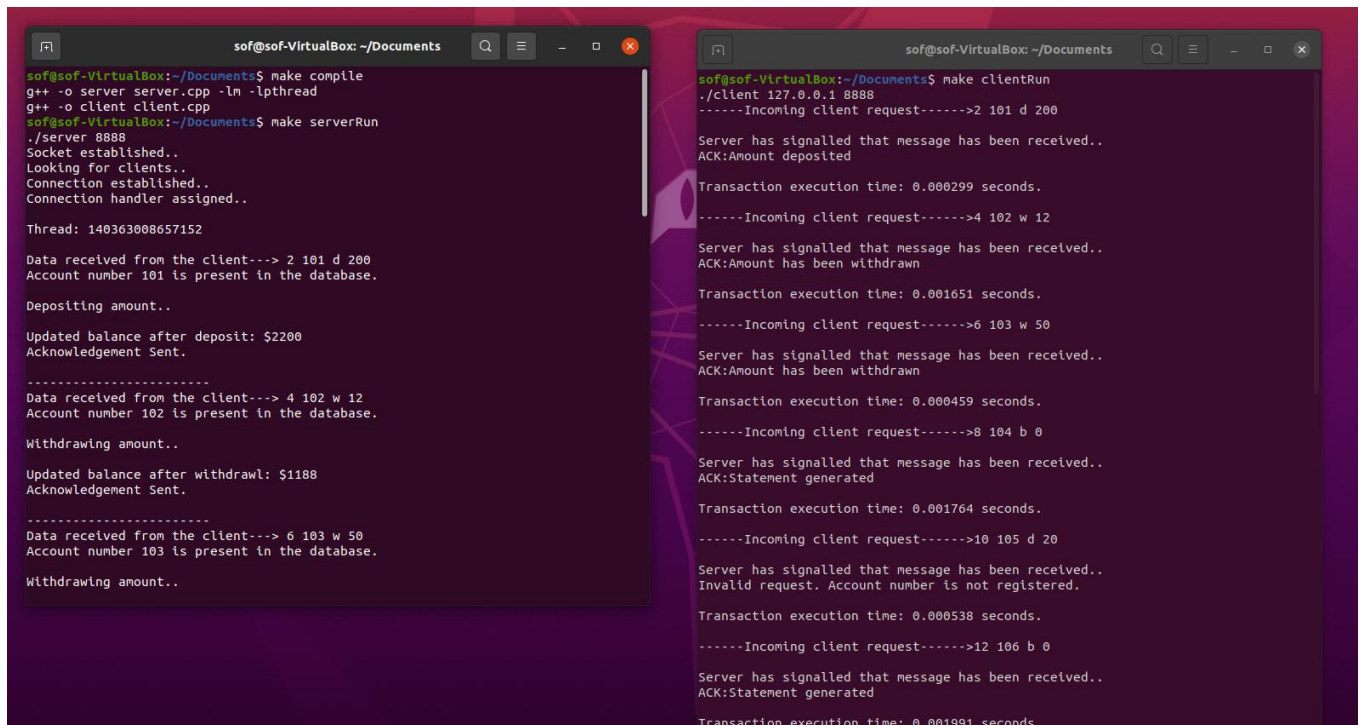


OUTPUT



```
sof@sof-VirtualBox: ~/Documents
sof@sof-VirtualBox:~/Documents$ make compile
g++ -o server server.cpp -lm -lpthread
g++ -o client client.cpp
sof@sof-VirtualBox:~/Documents$ make serverRun
./server 8888
Socket established..
Looking for clients..
Connection established..
Connection handler assigned..

Thread: 140363008657152

Data received from the client--> 2 101 d 200
Account number 101 is present in the database.

Depositing amount..

Updated balance after deposit: $2200
Acknowledgement Sent.

-----
Data received from the client--> 4 102 w 12
Account number 102 is present in the database.

Withdrawing amount..

Updated balance after withdrawl: $1188
Acknowledgement Sent.

-----
Data received from the client--> 6 103 w 50
Account number 103 is present in the database.

Withdrawing amount..

sof@sof-VirtualBox:~/Documents$ make clientRun
./client 127.0.0.1 8888
-----Incoming client request----->2 101 d 200

Server has signalled that message has been received..
ACK:Amount deposited

Transaction execution time: 0.000299 seconds.

-----Incoming client request----->4 102 w 12

Server has signalled that message has been received..
ACK:Amount has been withdrawn

Transaction execution time: 0.001651 seconds.

-----Incoming client request----->6 103 w 50

Server has signalled that message has been received..
ACK:Amount has been withdrawn

Transaction execution time: 0.000459 seconds.

-----Incoming client request----->8 104 b 0

Server has signalled that message has been received..
ACK:Statement generated

Transaction execution time: 0.001764 seconds.

-----Incoming client request----->10 105 d 20

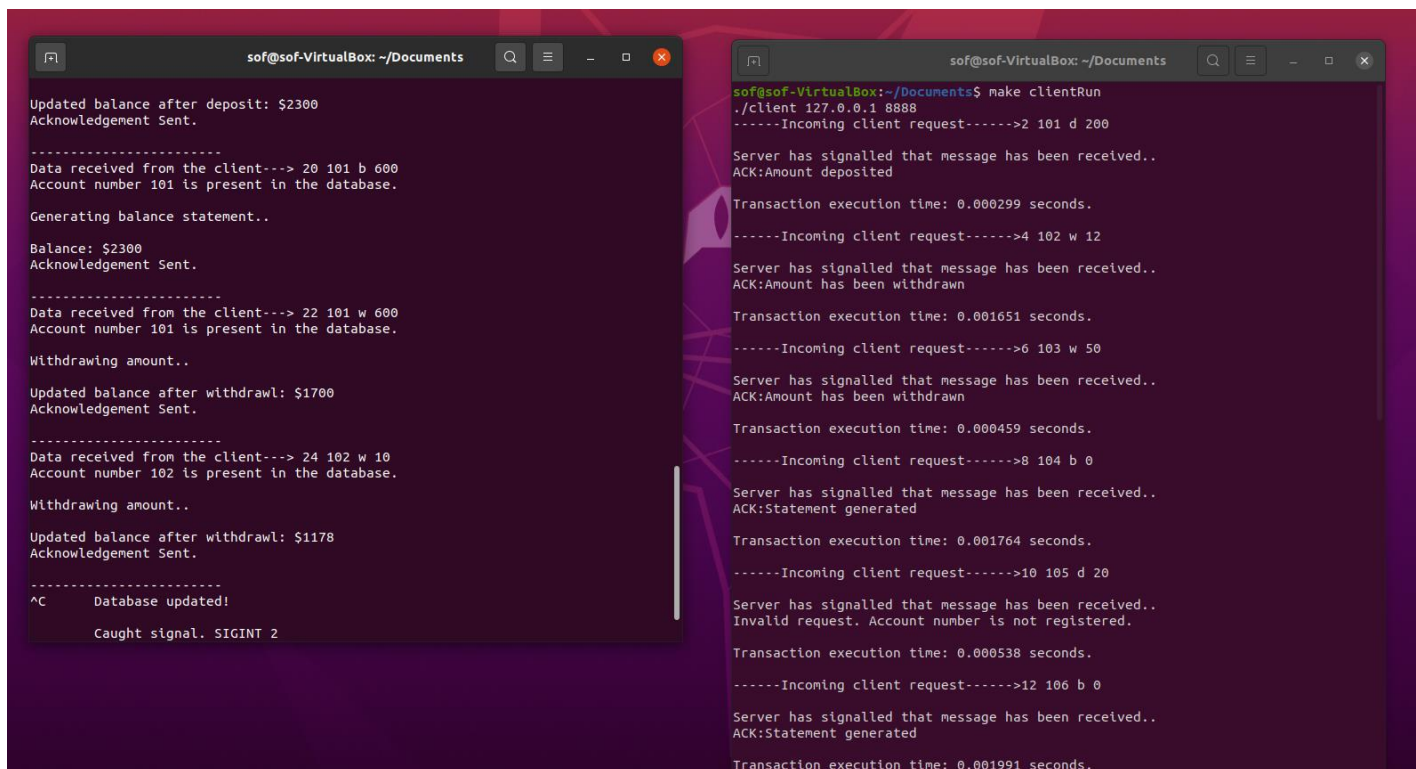
Server has signalled that message has been received..
Invalid request. Account number is not registered.

Transaction execution time: 0.000538 seconds.

-----Incoming client request----->12 106 b 0

Server has signalled that message has been received..
ACK:Statement generated

Transaction execution time: 0.001991 seconds.
```



The image displays two terminal windows from a virtual machine named 'sof'.

The left terminal window shows the server's output. It starts with 'Updated balance after deposit: \$2300' and 'Acknowledgement Sent.'. It then receives a client request '20 101 b 600', checks the database, and generates a balance statement. This is followed by another client request '22 101 w 600', where it checks the database and withdraws the amount, updating the balance to \$1700. A third client request '24 102 w 10' is received, and it checks the database and withdraws the amount, updating the balance to \$1178. The terminal ends with a Ctrl-C signal and 'Caught signal. SIGINT 2'.

The right terminal window shows the client's output. It starts with the command 'make clientRun' and './client 127.0.0.1 8888'. It then sends a series of requests to the server: '2 101 d 200' (deposit), '4 102 w 12' (withdraw), '6 103 w 50' (withdraw), '8 104 b 0' (balance), '10 105 d 20' (deposit), and '12 106 b 0' (balance). Each request is followed by a confirmation from the server: 'Server has signalled that message has been received.. ACK:Amount deposited', 'ACK:Amount has been withdrawn', 'ACK:Statement generated', and 'Invalid request. Account number is not registered.'.

```
sof@sof-VirtualBox: ~/Documents
Updated balance after deposit: $2300
Acknowledgement Sent.
-----
Data received from the client--> 20 101 b 600
Account number 101 is present in the database.

Generating balance statement..

Balance: $2300
Acknowledgement Sent.
-----
Data received from the client--> 22 101 w 600
Account number 101 is present in the database.

Withdrawing amount..

Updated balance after withdrawal: $1700
Acknowledgement Sent.
-----
Data received from the client--> 24 102 w 10
Account number 102 is present in the database.

Withdrawing amount..

Updated balance after withdrawal: $1178
Acknowledgement Sent.
-----
^C      Database updated!
      Caught signal. SIGINT 2

sof@sof-VirtualBox: ~/Documents
sof@sof-VirtualBox:~/Documents$ make clientRun
./client 127.0.0.1 8888
-----Incoming client request----->2 101 d 200

Server has signalled that message has been received..
ACK:Amount deposited

Transaction execution time: 0.000299 seconds.

-----Incoming client request----->4 102 w 12

Server has signalled that message has been received..
ACK:Amount has been withdrawn

Transaction execution time: 0.001651 seconds.

-----Incoming client request----->6 103 w 50

Server has signalled that message has been received..
ACK:Amount has been withdrawn

Transaction execution time: 0.000459 seconds.

-----Incoming client request----->8 104 b 0

Server has signalled that message has been received..
ACK:Statement generated

Transaction execution time: 0.001764 seconds.

-----Incoming client request----->10 105 d 20

Server has signalled that message has been received..
Invalid request. Account number is not registered.

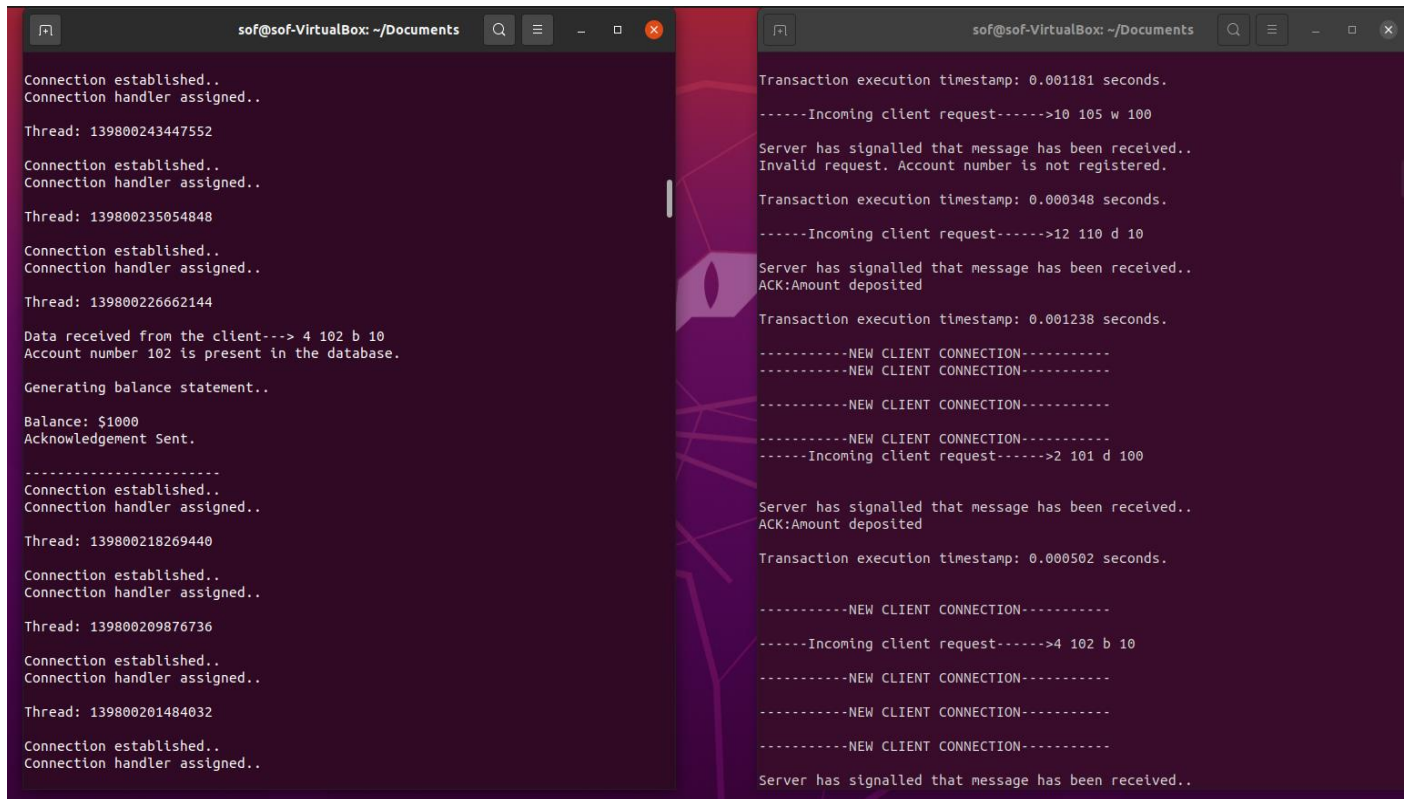
Transaction execution time: 0.000538 seconds.

-----Incoming client request----->12 106 b 0

Server has signalled that message has been received..
ACK:Statement generated

Transaction execution time: 0.001991 seconds.
```

Multiple clients:



The image displays two terminal windows side-by-side, both titled 'sof@sof-VirtualBox: ~/Documents'. The left window shows the server's initial state and the first client's request. The right window shows the server's response to the first client and the arrival of multiple new client connections.

```
sof@sof-VirtualBox: ~/Documents
Connection established..
Connection handler assigned..

Thread: 139800243447552

Connection established..
Connection handler assigned..

Thread: 139800235054848

Connection established..
Connection handler assigned..

Thread: 139800226662144

Data received from the client--> 4 102 b 10
Account number 102 is present in the database.

Generating balance statement..

Balance: $1000
Acknowledgement Sent.

-----
Connection established..
Connection handler assigned..

Thread: 139800218269440

Connection established..
Connection handler assigned..

Thread: 139800209876736

Connection established..
Connection handler assigned..

Thread: 139800201484032

Connection established..
Connection handler assigned..
```

```
sof@sof-VirtualBox: ~/Documents
Transaction execution timestamp: 0.001181 seconds.

-----Incoming client request----->10 105 w 100

Server has signalled that message has been received..
Invalid request. Account number is not registered.

Transaction execution timestamp: 0.000348 seconds.

-----Incoming client request----->12 110 d 10

Server has signalled that message has been received..
ACK:Amount deposited

Transaction execution timestamp: 0.001238 seconds.

-----NEW CLIENT CONNECTION-----
-----NEW CLIENT CONNECTION-----
-----NEW CLIENT CONNECTION-----
-----NEW CLIENT CONNECTION-----
-----Incoming client request----->2 101 d 100

Server has signalled that message has been received..
ACK:Amount deposited

Transaction execution timestamp: 0.000502 seconds.

-----NEW CLIENT CONNECTION-----
-----Incoming client request----->4 102 b 10
-----NEW CLIENT CONNECTION-----
-----NEW CLIENT CONNECTION-----
-----NEW CLIENT CONNECTION-----
-----NEW CLIENT CONNECTION-----

Server has signalled that message has been received..
```