

Network Programming & Client Server Programming – SGA-2

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1. Start the Server (server.py)

python [server.py](#)

✓ TERMINAL

```
○ (base) harshit@Harshits-MacBook-Air network-programming-SGA % python server.py  
Server started on port 50051  
█
```

2. Start Client while “server.py” is running & testing RPC connections

python [client.py](#)

- Retrieves & updates balances
- Performs a money transfer between accounts
- Receives transaction history with a Hash code & date-time

```
● (base) harshit@Harshits-MacBook-Air network-programming-SGA % python client.py  
----- NORMAL OPERATIONS -----  
Harshit balance: 1000.0 error:  
Transfer success: True error: txid: c9c4884c-d2a7-4753-bcc5-d8d2414d2e1c  
Harshit balance after: 800.0  
BITS balance after: 700.0  
Harshit transactions count: 1  
c9c4884c-d2a7-4753-bcc5-d8d2414d2e1c Harshit -> BITS 200.0 2025-11-13T10:30:41.441131Z
```

3. Error Handling Tests on “client.py”

python [client.py](#)

- Implemented basic error handling for common issues like insufficient funds for transfer, non-existing users and invalid data

```
● (base) harshit@Harshits-MacBook-Air network-programming-SGA % python client.py  
----- NORMAL OPERATIONS -----  
Harshit balance: 1000.0 error:  
Transfer success: True error: txid: c9c4884c-d2a7-4753-bcc5-d8d2414d2e1c  
Harshit balance after: 800.0  
BITS balance after: 700.0  
Harshit transactions count: 1  
c9c4884c-d2a7-4753-bcc5-d8d2414d2e1c Harshit -> BITS 200.0 2025-11-13T10:30:41.441131Z  
  
----- ERROR HANDLING TESTS -----  
Error for non existent user 'Charlie': user 'Charlie' not found  
Error for insufficient funds transfer: insufficient funds  
Error for negative amount transfer: amount must be positive  
❖ (base) harshit@Harshits-MacBook-Air network-programming-SGA % █
```

GitHub URL:

<https://github.com/harshit4311/distributed-banking-system-assignment>