

Network Programming (Simplified Bitcoin)

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Test Result Outputs

Client A Output (1/2)

```
PowerShell x PowerShell x PowerShell x PowerShell x
D: / / Network Programming (Simplified Bitcoin) > master 6 ~2 > 0.003s
+ python .\client2.py
Enter Username: A
Enter Password: G
Authentication Failed!
(1) Try Again
(2) Quit
Enter Number: 1
Enter Username: A
Enter Password: A
Authentication Successful!
User Data has been updated!
Current Balance: 10 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 10
Enter Number: 1
How much to transfer?: 1
Who will be Payee1? 1. B, 2. C, 3. D: B
How much will Payee1 receive?: 2
Transfer Amount: 1
Enter a number equal to or less than Transfer Amount.
How much will Payee1 receive?: 1
Payee1 will receive: 1
User Data has been updated!
Transaction was Successful!
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 9
Enter Number: 1
How much to transfer?: 6
Who will be Payee1? 1. B, 2. C, 3. D: C
How much will Payee1 receive?: 4
Who will be Payee2? 1. B, 2. D: D
```

Client A Output (2/2)

```
Payee2 will receive: 2
User Data has been updated!
Transaction was Successful!
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 3
Enter Number: 2
User Data has been updated!
Current Balance: 3 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
100 | A | 1 | B | 1 | 0 | 0 | 2 |
101 | A | 6 | C | 4 | D | 2 | 2 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 3
Enter Number: 1
How much to transfer?: 8
Who will be Payee1? 1. B, 2. C, 3. D: B
How much will Payee1 receive?: 3
Who will be Payee2? 1. C, 2. D: D
Payee2 will receive: 5
Transaction Failed!
Current Balance: 3
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 3
Enter Number: 2
User Data has been updated!
Current Balance: 5 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
100 | A | 1 | B | 1 | 0 | 0 | 2 |
101 | A | 6 | C | 4 | D | 2 | 2 |
300 | C | 10 | A | 2 | B | 8 | 2 |
102 | A | 8 | B | 3 | D | 5 | 3 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 5
Enter Number: █
```

Client B Output

```
PowerShell x PowerShell x PowerShell x PowerShell x
D: / / Network Programming (Simplified Bitcoin) > master ?6 ~2 > 0.008s
+ python .\client2.py
Enter Username: B
Enter Password: B
Authentication Successful!
User Data has been updated!
Current Balance: 11 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
100 | A | 1 | B | 1 | 0 | 0 | 2 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 11
Enter Number: 1
How much to transfer?: 5
Who will be Payee1? 1. A, 2. C, 3. D: C
How much will Payee1 receive?: 2
Who will be Payee2? 1. A, 2. D: D
Payee2 will receive: 3
User Data has been updated!
Transaction was Successful!
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 6
Enter Number: 2
User Data has been updated!
Current Balance: 14 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
100 | A | 1 | B | 1 | 0 | 0 | 2 |
200 | B | 5 | C | 2 | D | 3 | 2 |
300 | C | 10 | A | 2 | B | 8 | 2 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 14
Enter Number: █
```


Client C Output

```
PowerShell x PowerShell x PowerShell x PowerShell x
D: / / Network Programming (Simplified Bitcoin) > master 76 ~2 > 0.009s
+ python .\client2.py
Enter Username: C
Enter Password: C
Authentication Successful!
User Data has been updated!
Current Balance: 12 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
200 | B | 5 | C | 2 | D | 3 | 2 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 12
Enter Number: 1
How much to transfer?: 10
Who will be Payee1? 1. A, 2. B, 3. D: A
How much will Payee1 receive?: 2
Who will be Payee2? 1. B, 2. D: B
Payee2 will receive: 8
User Data has been updated!
Transaction was Successful!
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 6
Enter Number: 2
User Data has been updated!
Current Balance: 6 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
200 | B | 5 | C | 2 | D | 3 | 2 |
101 | A | 6 | C | 4 | D | 2 | 2 |
300 | C | 10 | A | 2 | B | 8 | 2 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 6
Enter Number: 
```

Client D Output

```
PowerShell x PowerShell x PowerShell x PowerShell x
D: / / Network Programming (Simplified Bitcoin) > master 76 ~2 > 0.009s
+ python .\client2.py
Enter Username: D
Enter Password: D
Authentication Successful!
User Data has been updated!
Current Balance: 15 BTC
id | payer | transfer amount | payee1 | payee1 amount | payee2 | payee2 amount | status |
200 | B | 5 | C | 2 | D | 3 | 2 |
101 | A | 6 | C | 4 | D | 2 | 2 |
(1) Make a Transaction
(2) Fetch and display the list of transactions
(3) Quit the Program
Current Balance: 15
Enter Number: 
```

Server Output

```
PowerShell
D: Network Programming (Simplified Bitcoin) > ymaster 76 ~2 > 0.008s
python .\server2.py
The server is ready to receive
Received an Authentication Request from Client ('127.0.0.1', 51019)
Failed to Authenticate client: ('127.0.0.1', 51019)
Received an Authentication Request from Client ('127.0.0.1', 51019)
Authentication Successful! Client: ('127.0.0.1', 51019), User: A
Client User Data has been updated!
Client: ('127.0.0.1', 51019) User A sent a transaction request.
Transactions Data Received:
TX: id = '100', payer = 'A', transfer_amount = '1', payee1 = 'B', received_amount_payee1 = '1', payee2 = '0', received_amount_payee2 = '0', status = '1'
Vaild Transaction Request. Updating Balances.
User A transaction request successfull!
Client User Data has been updated!
Received an Authentication Request from Client ('127.0.0.1', 55282)
Authentication Successful! Client: ('127.0.0.1', 55282), User: B
Client User Data has been updated!
Client: ('127.0.0.1', 55282) User B sent a transaction request.
Transactions Data Received:
TX: id = '200', payer = 'B', transfer_amount = '5', payee1 = 'C', received_amount_payee1 = '2', payee2 = 'D', received_amount_payee2 = '3', status = '1'
Vaild Transaction Request. Updating Balances.
User B transaction request successfull!
Client User Data has been updated!
Received an Authentication Request from Client ('127.0.0.1', 58771)
Authentication Successful! Client: ('127.0.0.1', 58771), User: C
Client User Data has been updated!
Client: ('127.0.0.1', 58771) User A sent a transaction request.
Transactions Data Received:
TX: id = '101', payer = 'A', transfer_amount = '6', payee1 = 'C', received_amount_payee1 = '4', payee2 = 'D', received_amount_payee2 = '2', status = '1'
Vaild Transaction Request. Updating Balances.
User A transaction request successfull!
Client User Data has been updated!
Client: ('127.0.0.1', 51019) User A has view their data.
Client User Data has been updated!
Client: ('127.0.0.1', 58771) User C sent a transaction request.
Transactions Data Received:
TX: id = '300', payer = 'C', transfer_amount = '10', payee1 = 'A', received_amount_payee1 = '2', payee2 = 'B', received_amount_payee2 = '8', status = '1'
Vaild Transaction Request. Updating Balances.
User C transaction request successfull!
Client User Data has been updated!
Client: ('127.0.0.1', 58771) User C has view their data.
Client User Data has been updated!
Client: ('127.0.0.1', 51019) User A sent a transaction request.
Transactions Data Received:
TX: id = '102', payer = 'A', transfer_amount = '8', payee1 = 'B', received_amount_payee1 = '3', payee2 = 'D', received_amount_payee2 = '5', status = '1'
User A transaction request failed. Insufficient Balance.
Client: ('127.0.0.1', 51019) User A has view their data.
Client User Data has been updated!
Client: ('127.0.0.1', 55282) User B has view their data.
Client User Data has been updated!
Received an Authentication Request from Client ('127.0.0.1', 49976)
Authentication Successful! Client: ('127.0.0.1', 49976), User: D
Client User Data has been updated!
```