**Before sending commands, first the client will need to make a connection with the server.**

**Each command has a number with commands ending in 01 or 02 coming from the client and the rest coming from the server.**

**Each of the following values will be sent using a string buffer that sends each of the values separated by a space.**

**Example: Create Account**

**“101 Austin Waters 1234 12345678 1234567890** [**austin@unt.edu**](mailto:austin@unt.edu)**”**

**Since both the server and client only receive the code it is up to the coder to determine how that code is successfully interpreted.**

firstName (characters) (max characters 20)

lastName (characters) (max characters 20)

Pin (4 integers)

DL (8 integers)

SSN (9 integers)

EmailAddress (characters) (max characters 40)

Amount (integers) (max integers 10) – is how much the user wants to deposit or withdraw

Balance (integers) (max integers 10) – the remaining balance in the user account

NumOfTransactions (1 integer) pick between 1-5

**Create Account <101, firstName, lastName, Pin, DL, SSN, emailAddress> -** sends command number 101 to the server indicating that it is also sending the create account values.

**Account Creation Failed <103> -** Code is sent to the client if the entries are invalid. Such that, DL is the wrong number of integers ect…

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Create Account** | |  |
|  | **Account Created Failed** | | To ATM |

**Account Created** <**104>** – All the information entered is correct and account doesn’t exist, then then the account is successfully created, and the user is automatically logged.

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| ATM | | Server | |
| To Server | **Create Account** | |  |
|  | **Account Created** | | To ATM |

**Account Already Exists** <**105> –** The account has already been to created, prompts client to show log-in screen

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| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Create Account** | |  |
|  | **Account Already Exists** | | To ATM |

**Authentication <201, firstName, Pin> -** sends command number 201 indicating to the server that it is going to authenticate and account by sending the users first name and pin number.

**Authentication Failure <203> -** failed to authenticate to authenticate user. failedAttempts += 1.

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| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Authentication** | |  |
|  | **Authentication Failure** | | To ATM |

**Authentication Exceeded** <**204>** – if failedAttempts is greater than 10 it stops the client from allowing anymore attempts (Should also disconnect client from the server)

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| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Create Account** | |  |
|  | **Authentication Exceeded** | | To ATM |

**Authentication succeed** <**205>** – succeed in authenticating the user. FailedAttempts = 0.

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Create Account** | |  |
|  | **Account Already Exists** | | To ATM |

**Deposit <301, Amount>** - sends command 301 to the server indicating that the user is has deposited bills.

**Deposit Success <303, Balance>–** Returns the new balance to the client

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Deposit** | |  |
|  | **Deposit Success** | | To ATM |

**Deposit Failed <304, Balance> –** Notified the client that there was an error in the deposit, returns the balance to let the user know that there account was not affected.

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| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Deposit** | |  |
|  | **Deposit Failed** | | To ATM |

**Machine Full <302>** - When user attempted to deposit but the ATM was full, ATM send message to the server letting it know that the machine is full. (Assumed that the client determined that the amount deposited by the user exceed machine capacity so it sends the message to the server).

**Deposit Return<305, Balance> -** The server has notified the proper outlet that the ATM needs to be emptied and sends back to the client that its ready for another command. Sends balance back to let user know that nothing has changed regarding there account.

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Machine Full** | |  |
|  | **Deposit Return** | | To ATM |

**Withdraw <401, Amount> -** sends command 401 to the server indicating the user is attempting to withdraw.

**Withdraw Success <403, Balance>** – Sends the new balance of the user account balance back to the client

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Withdraw** | |  |
|  | **Withdraw Success** | | To ATM |

**Funds Low <404, Balance> –** Sends information back to the client indicating the user doesn’t have enough funds. (Sends balance back to user to let the user know why they didn’t have enough)

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Withdraw** | |  |
|  | **Funds Low** | | To ATM |

**Empty <402> -** Sends information to the server indicating that the ATM didn’t have enough money to do a withdrawal (Assumed that the client determined that the amount entered by the user was more than the machine had, so it sends this message to the server).

**Withdraw Return<405>** - The server has notified the proper outlet that the ATM needs to be filled and sends back to the client that its ready for another command

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Empty** | |  |
|  | **Withdraw Return** | | To ATM |

**Balance** <**501>** - sends command 501 to the server to ask for account balance

**Balance Return <503> –** returns user balance to the client

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| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Balance** | |  |
|  | **Balance Return** | | To ATM |

**Show Transactions<601, numOfTransactions> -** sends command 601 to the server to get back n transactions (the number entered by the user is the most recent transactions, so if the user enters 5 then it shows transactions 1 – 5, if the user enters 5 again it should still show 1 – 5)

NumOfTransactions should be between 1 and 5

**Return Transactions<603, TransactionCount, TransactionMessage> –** if there are less than n transactions, send all transactions to client, else send last n transactions to client

The Transaction message is a repeated message that is separated by spaces

<Number, Name, Amount>

Example: For user sending for 5 transactions and there being only 3 transactions on account

“603 3 1 Stamps 100 2 Deposit 200 3 Withdrawal 300”

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Show Transactions** | |  |
|  | **Withdraw Return** | | To ATM |

**Stamps<701, Amount> -** Sends command 701 to the server to indicate the user has paid Amount for stamps. The server needs to verify that the user has enough money in account to complete transaction. (Since it is a transaction it is handled similarly to withdrawal the server doesn’t need to know how many stamps are in the machine until the client is out)

**Terminate Transaction<703> –** Sends information back to the client indicating the user doesn’t have funds to buy stamps

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| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Stamps** | |  |
|  | **Terminate Transaction** | | To ATM |

**Success<704, Balance>** – Sends the new balance of the user account balance back to the client and prompts client to release the stamps

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Stamps** | |  |
|  | **Success** | | To ATM |

**Out of Stamps <702> -** Sends information to the server indicating that the ATM didn’t have enough stamps to complete the transaction (Assumed that the client determined that the amount entered by the user was more than the machine had so it sends this message to the server).

**Stamps Return<705>** - The server has notified the proper outlet that the ATM needs to be filled and sends back to the client that its ready for another command

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Out of Stamps** | |  |
|  | **Stamps Return** | | To ATM |

**Logout<801> -** Tells server logout of user account

**Logout Success<803> –** The server has successfully logout of the account (when this command is received the client should disconnect from the server)

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Logout** | |  |
|  | **Logout Success** | | To ATM |

It is expected that after logout the user the client should be ready to send new login information and the server should be ready to except new login information.

**ERROR Missing Entry <908> -** Lets the client know that it received a proper code but that it is missing entries

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **Create Account <101, Austin, Waters, 1234>** | |  |
|  | **ERROR Missing Entry** | | To ATM |

**ERROR Unknown Code <909> -** Lets the client know that an unknown error code was received

|  |  |  |  |
| --- | --- | --- | --- |
| ATM | | Server | |
| To Server | **110** | |  |
|  | **ERROR Unknown Code** | | To ATM |