Communication

Client-server communication

- Client: commands
  `C: USER mrose`
- Server: answers
  `S: +OK mrose is a real hoopy frood`

Possible answers:

+OK `name is a valid mailbox`
-ERR `never heard of mailbox name`

Communications phases.

1. **connection**
   TCP connection over port 110 (usually)
   `S: +OK POP3 server ready`

2. **authorization**
   two mechanisms - without encryption (USER + PASS)
   - with encryption (APOP)
   exclusive lock on the Mailbox

3. **transaction**
   client can send commands

4. **actualization**
   after QUIT command

Compulsory Commands:

USER name
- client send own login name to the server

PASS string
- client send password to the server

```
Example:
      C: USER mrose
      S: +OK mrose is a real hoopy frood
      C: PASS secret
      S: +OK mrose's maildrop has 2 messages (320 octets)
```

QUIT
- server removes all messages marked as deleted from the maildrop. It then releases any exclusive-access lock on the maildrop and replies as to the status of these operations. The TCP connection is then closed.

STAT
- server issues a positive response with a line containing information for the maildrop.

LIST [msg]
- server issues a positive response with a line containing information for that message.

RETR msg
- POP3 server sends the message corresponding to the given message-number.

DELE msg
- server marks the message as deleted. The POP3 server does not actually delete the message until the POP3 session enters the UPDATE state.

NOOP
- server does nothing, it merely replies with a positive response.

RSET
- If any messages have been marked as deleted by the server, they are unmarked.

Optional POP3 Commands

TOP msg n
- server sends the headers of the message, the blank line separating the headers from the body, and then the number of lines indicated message's body.

UIDL [msg]
- server issues a positive response with a line containing information for that message. This line is called a "unique-id listing" for that message.

APOP name digest
- A POP3 server will include a timestamp in its banner greeting. For example, on a UNIX implementation, the syntax of the timestamp might be:

<process-ID.clock@hostname>

The `name' parameter has identical semantics to the `name' parameter of the USER command. The `digest' parameter is calculated by applying the MD5 algorithm to the timestamp and a shared secret.

Example POP3 Session

```
S: <wait for connection on TCP port 110>
C: <open connection>
S:    +OK POP3 server ready <1896.697170952@dbc.mtview.ca.us>
C:    APOP mrose c4c9334bac560ecc979e58001b3e22fb
S:    +OK mrose's maildrop has 2 messages (320 octets)
C:    STAT
S:    +OK 2 320
C:    LIST
S:    +OK 2 messages (320 octets)
S:    1 120
S:    2 200
S:    .
C:    RETR 1
S:    +OK 120 octets
S:    <the POP3 server sends message 1>
S:    .
C:    DELE 1
S:    +OK message 1 deleted
C:    RETR 2
S:    +OK 200 octets
S:    <the POP3 server sends message 2>
S:    .
C:    DELE 2
S:    +OK message 2 deleted
C:    QUIT
S:    +OK dewey POP3 server signing off (maildrop empty)
C:  <close connection>
S:  <wait for next connection>
```