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Class: CS3013
              Network Programming

Assignment#: 4

Client Flowchart

```
                        START
                          |
                          v
                 main(int argc, char
                        **argv)
                          |
                          v
         Y            argc != 2            N
    +---------------+          +
    |                          |
    v                          v
  Display                  Create Socket
Please include the             |
server you want to             v
connect                   Reset bits of
    |                     servaddr to null
    v                          |
  exit(2)                      v
  END                   Set Internet Protocol
                           version 4
                               |
                               v
                          Set Port Number
                               |
                               v
                        Converts address to
                              binary
                               |
                               v
                        Connect to Server
                               |
                               v
                        Execute client    ------>   String Client
                         read/write
```

```
                                              ┌──────────────────┐
    ┌──────────────────┐                      │  Declarations and│
    │     exit(0)      │                      │  Initializations │
    │      END         │                      └────────┬─────────┘
    └──────────────────┘                               │
                                                        ▼
                                              ┌──────────────────┐
                                              │  Clear out entire│
                                              │      Buffer      │
                                              └────────┬─────────┘
                                                        │
                                                        ▼
                                              ┌──────────────────┐
                                              │  Mark the Shutdown│
                                              │     as false     │
                                              └────────┬─────────┘
                                                        │
                                                        ▼
                                              ┌──────────────────┐
                                              │  Prepare File    │
                                              │   Descriptor     │
                                              └────────┬─────────┘
                                                        │
                                                        ▼
  ┌──────────────────┐     Y    ◇ User Request ◇       ┌──────────────────┐
  │ No longer listening│◀───────◇  Shutdown?   ◇◀───────│   Infinite Loop  │
  │  for STDIN from user│       ◇              ◇        └──────────────────┘
  └──────────────────┘          │ N
                                 ▼
                       ┌──────────────────┐
                       │ Listening for STDIN│
                       │    from user     │
                       └──────────────────┘

  ┌──────────────────┐     Y    ◇ End of ◇    ◇ Server ◇
  │ Server Responded │◀───────◇  File   ◇◀───◇Responded◇
  │ but already at EOF│        ◇        ◇     ◇         ◇
  └──────────────────┘

  ┌──────────────────┐     Y    ◇  Server  ◇
  │    Display       │◀───────◇ Terminated ◇
  │ System call to stop│       ◇           ◇
  │   the program    │
  └────────┬─────────┘               │
           │                         ▼
           ▼                  ◇   Else   ◇
    ┌──────────────────┐
    │     exit(1)      │
    │      END         │               │
    └──────────────────┘               ▼
                              ┌──────────────────┐
                              │ Server responded │
                              │ - Display Message│
                              └──────────────────┘
```

```
                                                                    │
                                                                    │
                                                                    ▼
┌──────────┐    ┌──────────────┐    ┌──────────────┐    ◆              ◆
│          │    │              │    │   Display    │  Y │   Does   │    │  End-User  │
│ exit(1)  │◄───│Shut down     │◄───│   Closing    │◄───│ user want to │◄───│ Responded  │
│  END     │    │   signal     │    │  Connection  │    │    Quit      │    │  (STDIN)   │
│          │    │              │    │              │    ◆              ◆
└──────────┘    └──────────────┘    └──────────────┘         │
                                                             │
                                                             ▼
                                    ┌──────────────┐    ◆
                                    │Send message to│◄───│   Else   │
                                    │    Socket     │    ◆
                                    └──────────────┘

                                                        ┌──────────────┐
                                                        │ Clear Buffer │◄───
                                                        └──────────────┘
```

- exit(1) END
- Shut down signal
- Display Closing Connection
- Does user want to Quit — Y
- End-User Responded (STDIN)
- Send message to Socket
- Else
- Clear Buffer