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Solo Project

BitTorrent Phase 1

For Phase 1 of the BitTorrent Project, I did not know the final requirements of the project so I did not architect the classes. I knew I would have to re-architect them when introducing threads and queues to the bittorrent client. So I treated I treated Phase 1 as an introduction to BitTorrent Protocol to get a strong understanding of how messages must flow between the client and peers.

Consequently, I took a procedural approach to programming Phase 1

The Procedure Runs as follows

1. Check if command arguments are valid
2. Set my peer fields
3. Declare Networking Tools
4. Initialize a server socket on an open port initialize
5. Open torrent file and initialize the destination file
6. Escape info hash for url call
7. Send http request to the tracker
8. Get list of peers from tracker
9. Find RU Peer
10. Open Connection with RU Peer
11. Initialize Handshake
12. Send handshake
13. Verify Handshake received from peer
14. Send Interest Message to Peer
15. Listen for BitField Message from Peer
16. Listen for Unchoke Message from Peer
17. Send Started Event to Tracker
18. Download File - for each Piece
    a. Create File Piece Request
    b. Download Individual Pieces
    c. Send Request Message to Peer
    d. Listen for Message from Peer
    e. Verify Hash
    f. Send Have Message
    g. Load File Piece into File
19. Save File
20. Send Complete event to Tracker
21. Close all Connections