

Software Project Lab-1

STORRENTO

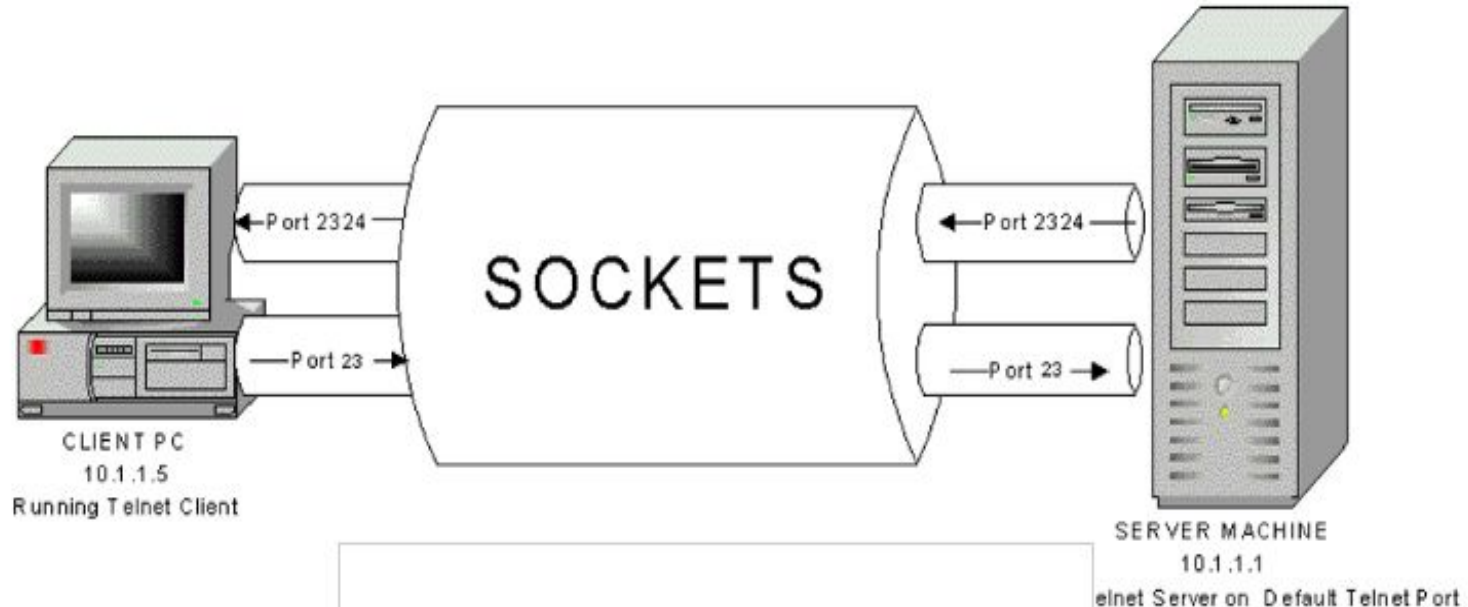
A Miniature Implementation of Bittorrent Protocol using C

Presented By
SIFAT SIKDER
BSSE 1221

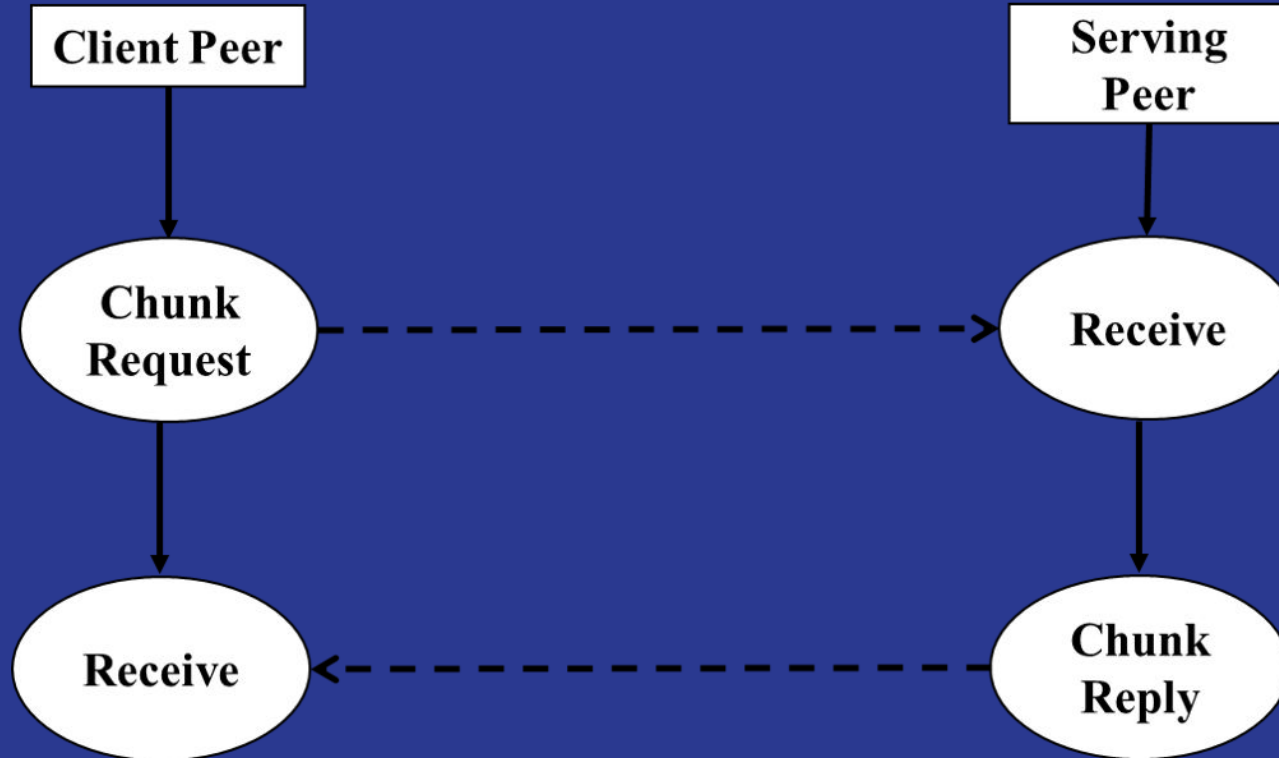
Supervised By
Dr. B M Mainul Hossain

Concepts & Algorithms implemented In this project

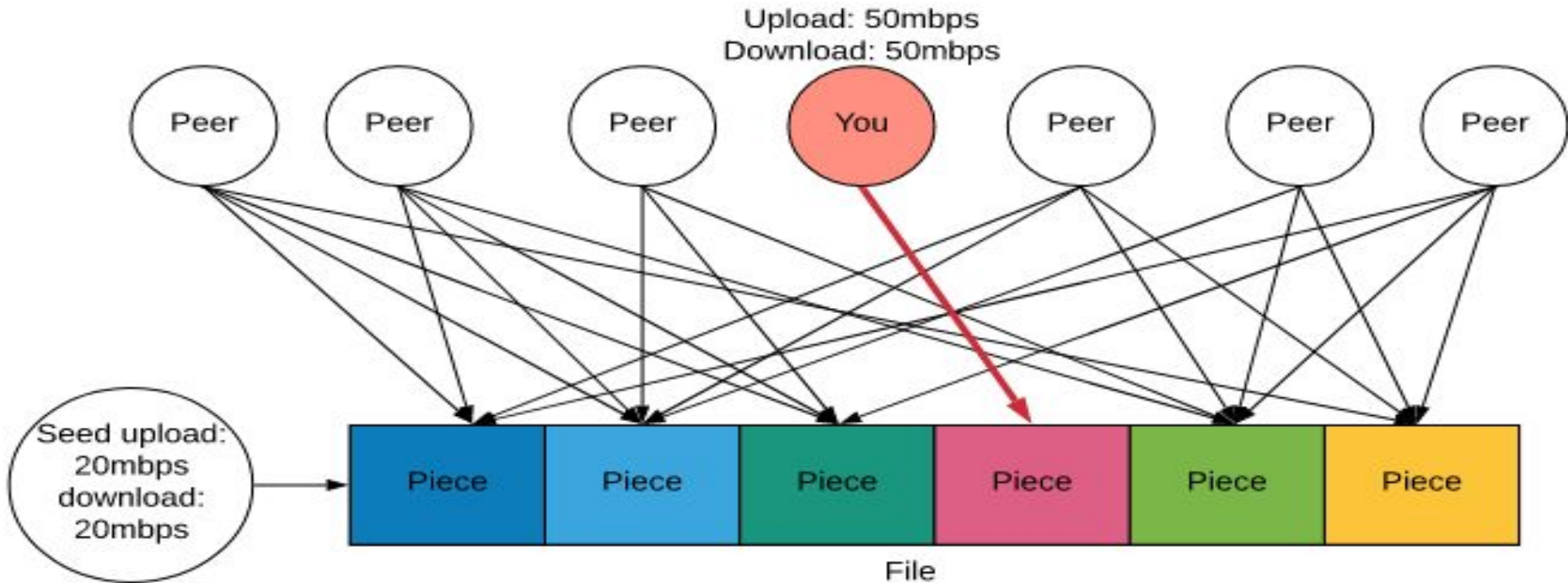
SOCKET PROGRAMMING



P2P ARCHITECHTURE



PIECE SELECTION ALGORITHM



Bencoding

- Dictionaries

- Prefixed with "d", end with "e"

- Lists

- Prefixed with "l", end with "e"

- Integers

- Prefixed with "i", end with "e"

- Strings

- Prefixed with string length + ":"

Parsed Value after BEncoding:-

INFO_HASH=3fb91a4a7a4bd79ba7e465dd13548f8a7d0365c

announce = udp://tracker.ccc.de:80/announce

announce-list = udp://tracker.ccc.de:80/announce

announce-list = udp://open.demonii.com:1337/announce

announce-list = udp://tracker.publicbt.com:80/announce

announce-list = udp://tracker.openbittorrent.com:80/announce

announce-list = udp://tracker.istole.it:80/announce

announce-list = http://tracker.hexagon.cc:2710/announce

announce-list =

comment = Torrent downloaded from torrent cache at <http://torcache.net/>

creation date = 1397436079

length = 70401147

name = Family.Guy.S12E17.HDTV.x264-EXCELLENCE.mp4

piece length = 524288

Hash handler, hash length = 2700

CONNECTED & HANDSHAKE

Activities Visual Studio Code 30 04:57

p2p.c - c_bittorrent-main - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

- C_BITTORRENT-MAIN
 - .vscode
 - include
 - bencode.h
 - list.h
 - p2p.h
 - src
 - bencode.c
 - dict.c
 - main.c
 - p2p.c
 - lock.1.torrent#
 - lock.random.txt.torrent#
 - .gitignore
 - 1.torrent
 - debian-11.3.0-amd64-netinst.iso
 - makefile
 - STORRENT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Tracker found: http://bttracker.debian.org:6969/announce
Getting response from tracker
d8:interval1900e5:peers300:c0 000c00 0A 0000000R 9G00Z-0 00U000]010F:0\$A0R@GRAD
n[E0\\00I'070.0000P0ieA0Vs0
Peers found: 50
~/2-1/c_bittorrent-main/include/list.h

```
[c] Connected to peer 92.169.240.159
[h] Sent handshake to peer 92.169.240.159
[c] Connected to peer 90.126.207.95
[h] Sent handshake to peer 90.126.207.95
[c] Connected to peer 85.212.193.27
[h] Sent handshake to peer 85.212.193.27
[c] Connected to peer 178.174.157.118
[h] Sent handshake to peer 178.174.157.118
[c] Connected to peer 185.107.71.8
[h] Sent handshake to peer 185.107.71.8
[c] Connected to peer 77.251.249.19
[h] Sent handshake to peer 77.251.249.19
[e] Error on peer 178.32.220.61: Connection refused (whndshk)
[c] Connected to peer 93.230.105.25
[h] Sent handshake to peer 93.230.105.25
[c] Connected to peer 185.107.71.139
[h] Sent handshake to peer 185.107.71.139
[c] Connected to peer 91.214.169.69
[h] Sent handshake to peer 91.214.169.69
[c] Connected to peer 5.182.17.151
[h] Sent handshake to peer 5.182.17.151
[c] Connected to peer 91.249.78.8
[h] Sent handshake to peer 91.249.78.8
[e] Error on peer 213.174.1.230: Connection refused (whndshk)
[c] Connected to peer 84.84.96.92
[h] Sent handshake to peer 84.84.96.92
[c] Connected to peer 164.5.212.160
[h] Sent handshake to peer 164.5.212.160
[c] Connected to peer 212.201.8.116
[h] Sent handshake to peer 212.201.8.116
[c] Connected to peer 95.28.171.140
```

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BITFIELD READ AND ERROR READ

Activities Visual Studio Code 30 04:57

p2p.c - c_bittorrent-main - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

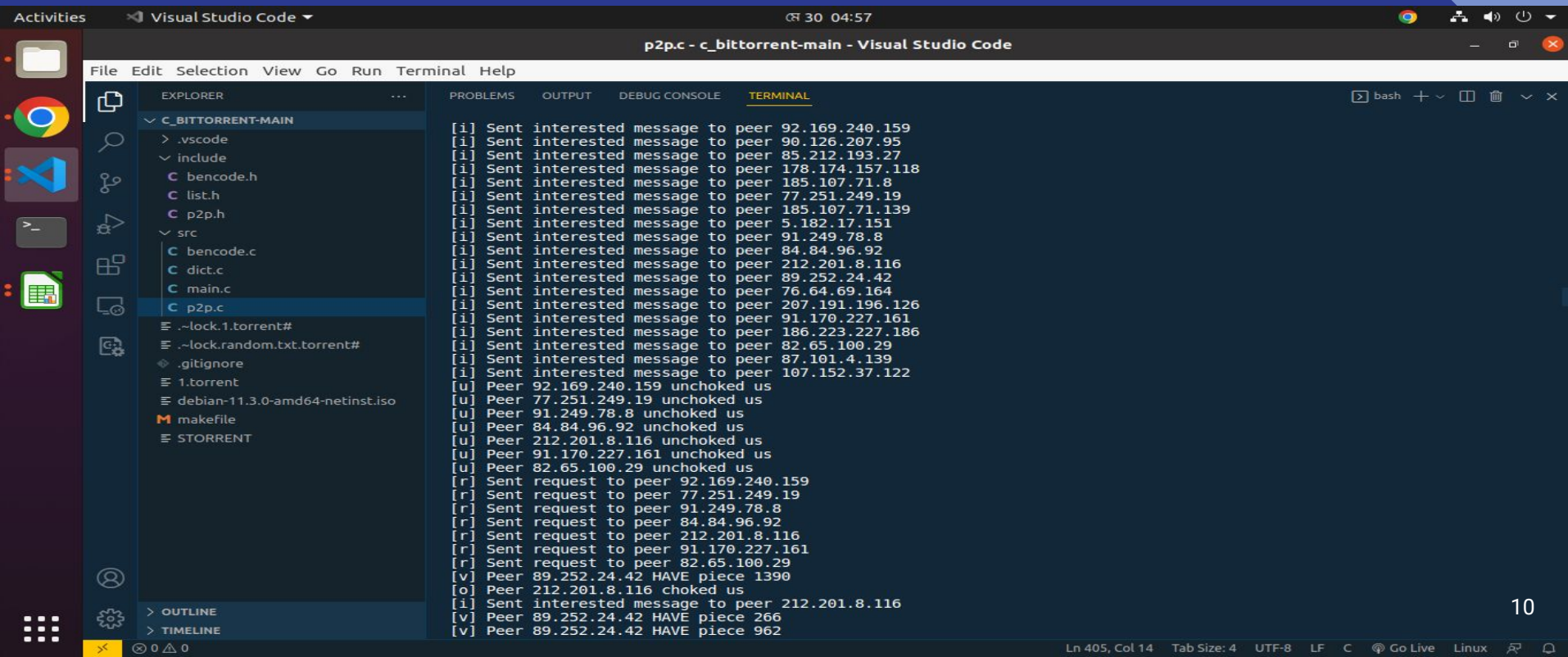
- C_BITTORRENT-MAIN
 - .vscode
 - include
 - bencode.h
 - list.h
 - p2p.h
 - src
 - bencode.c
 - dict.c
 - main.c
 - p2p.c
 - lock.1.torrent#
 - lock.random.txt.torrent#
 - .gitignore
 - 1.torrent
 - debian-11.3.0-amd64-netinst.iso
 - makefile
 - STORRENT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
[v] Got handshake from peer 92.169.240.159
[v] Got handshake from peer 90.126.207.95
[v] Got handshake from peer 85.212.193.27
[v] Got handshake from peer 178.174.157.118
[v] Got handshake from peer 185.107.71.8
[v] Got handshake from peer 77.251.249.19
[e] Peer 93.230.105.25 hung up
[v] Got handshake from peer 185.107.71.139
[e] Peer 185.107.71.139 hung up
[v] Got handshake from peer 5.182.17.151
[v] Got handshake from peer 91.249.78.8
[v] Got handshake from peer 84.84.96.92
[e] Peer 164.5.212.160 hung up
[v] Got handshake from peer 212.201.8.116
[e] Peer 95.28.171.140 hung up
[v] Got handshake from peer 89.252.24.42
[e] Peer 163.172.89.253 hung up
[e] Peer 67.190.172.95 hung up
[e] Error on peer 67.190.172.95: Connection reset by peer (rhndshk)
[v] Got handshake from peer 76.64.69.164
[v] Got handshake from peer 207.191.196.126
[v] Got handshake from peer 70.58.195.36
[e] Peer 70.58.195.36 hung up
[v] Got handshake from peer 91.170.227.161
[v] Got handshake from peer 186.223.227.186
[v] Got handshake from peer 82.65.100.29
[v] Got handshake from peer 87.101.4.139
[e] Peer 87.101.4.139 hung up
[v] Got handshake from peer 107.152.37.122
[e] Error on peer 107.152.37.122: Connection reset by peer (rhndshk)
[b] Read bitfield (189) from peer 92.169.240.159
[b] Read bitfield (189) from peer 90.126.207.95
[b] Read bitfield (189) from peer 85.212.193.27
[b] Read bitfield (189) from peer 178.174.157.118
[b] Read bitfield (189) from peer 185.107.71.8
[b] Read bitfield (189) from peer 77.251.249.19
[b] Read bitfield (189) from peer 185.107.71.139
[b] Read bitfield (189) from peer 5.182.17.151
```

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INTERESTED & UNCHOKED



Activities Visual Studio Code 30 04:57

p2p.c - c_bittorrent-main - Visual Studio Code

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EXPLORER

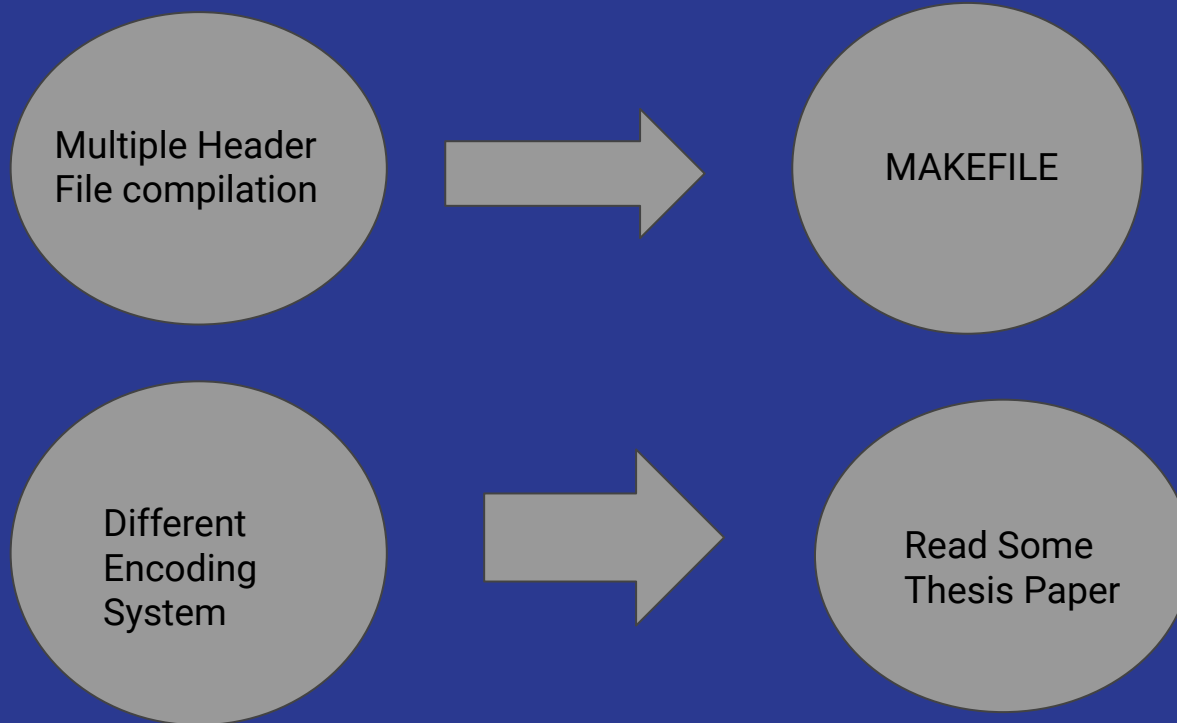
- C_BITTORRENT-MAIN
 - .vscode
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 - 1.torrent
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 - makefile
 - STORRENT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
[i] Sent interested message to peer 92.169.240.159
[i] Sent interested message to peer 90.126.207.95
[i] Sent interested message to peer 85.212.193.27
[i] Sent interested message to peer 178.174.157.118
[i] Sent interested message to peer 185.107.71.8
[i] Sent interested message to peer 77.251.249.19
[i] Sent interested message to peer 185.107.71.139
[i] Sent interested message to peer 5.182.17.151
[i] Sent interested message to peer 91.249.78.8
[i] Sent interested message to peer 84.84.96.92
[i] Sent interested message to peer 212.201.8.116
[i] Sent interested message to peer 89.252.24.42
[i] Sent interested message to peer 76.64.69.164
[i] Sent interested message to peer 207.191.196.126
[i] Sent interested message to peer 91.170.227.161
[i] Sent interested message to peer 186.223.227.186
[i] Sent interested message to peer 82.65.100.29
[i] Sent interested message to peer 87.101.4.139
[i] Sent interested message to peer 107.152.37.122
[u] Peer 92.169.240.159 unchoked us
[u] Peer 77.251.249.19 unchoked us
[u] Peer 91.249.78.8 unchoked us
[u] Peer 84.84.96.92 unchoked us
[u] Peer 212.201.8.116 unchoked us
[u] Peer 91.170.227.161 unchoked us
[u] Peer 82.65.100.29 unchoked us
[r] Sent request to peer 92.169.240.159
[r] Sent request to peer 77.251.249.19
[r] Sent request to peer 91.249.78.8
[r] Sent request to peer 84.84.96.92
[r] Sent request to peer 212.201.8.116
[r] Sent request to peer 91.170.227.161
[r] Sent request to peer 82.65.100.29
[v] Peer 89.252.24.42 HAVE piece 1390
[o] Peer 212.201.8.116 choked us
[i] Sent interested message to peer 212.201.8.116
[v] Peer 89.252.24.42 HAVE piece 266
[v] Peer 89.252.24.42 HAVE piece 962
```

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CHALLENGES AND SOLUTIONS



Socket
Programming



Learned
Some
Networking
Concepts
Such as
TCP,UDP

P2P Architecture



By learning the
Workings of Client
Server Architecture

My Github Repository link :

<https://github.com/SifatSikder/spl-1-storrento>

Thank You