

# CSD2161 Assignment 3 Design Documents

## Individual Contributions:

Goh Pin Kai [pincai.g@digipen.edu](mailto:pincai.g@digipen.edu) 2301388

- Code, Design Documents, Testing

Pek Jun Kai Gerald [p.junkaigerald@digipen.edu](mailto:p.junkaigerald@digipen.edu) 2301334

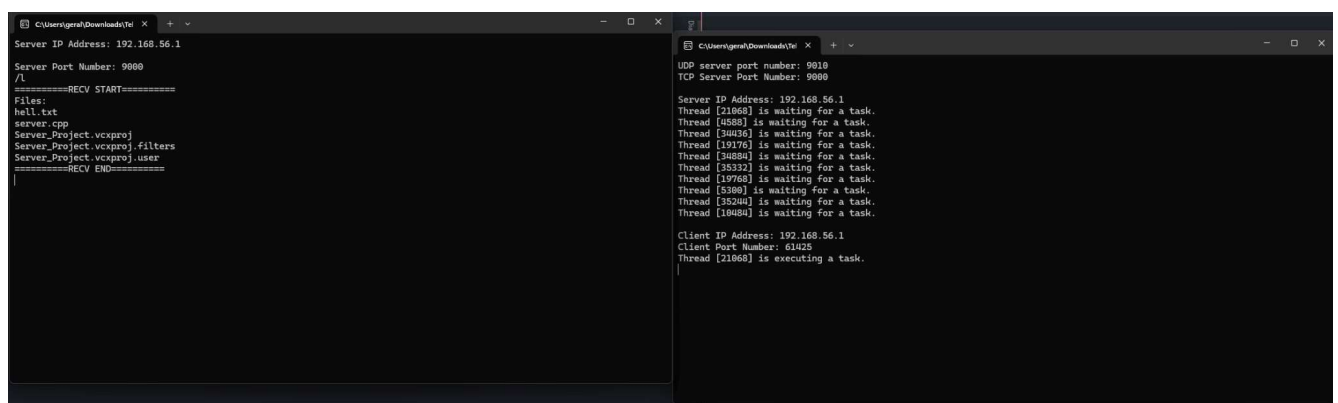
- Code, Design Documents, Testing

## Design Introduction

Using winsock sockets, the client will try to connect to the server and send requests through commands. The server will reply with the desired results, whether to list all downloadable files or actually doing a file transfer through UDP. The client is able to receive a list of files that can be accessed by the server as well as quit. However sadly when we try to initiate the download, the TCP instructions sent do not contain the file name well and although we can get the file on the client side, it does not contain any content.

## Verification

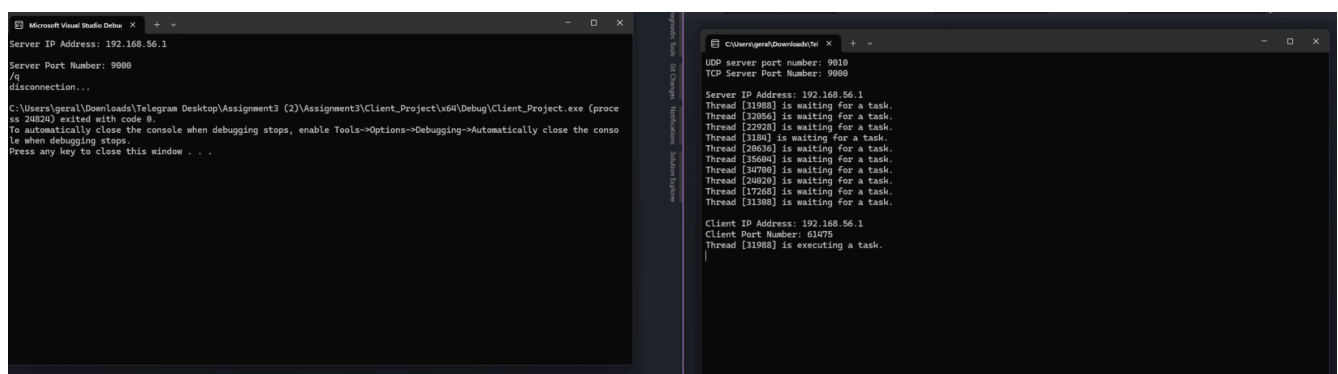
To verify the design, the program was tested with scenarios that will be depicted in the following pictures.



```
Server IP Address: 192.168.56.1
Server Port Number: 9000
/l
=====RECV START=====
Files:
hell.txt
server.cpp
Server_Project.vcxproj
Server_Project.vcxproj.filters
Server_Project.vcxproj.user
=====RECV END=====

UDP server port number: 9010
TCP Server Port Number: 9000
Server IP Address: 192.168.56.1
Thread [21968] is waiting for a task.
Thread [4688] is waiting for a task.
Thread [39836] is waiting for a task.
Thread [19176] is waiting for a task.
Thread [34888] is waiting for a task.
Thread [35322] is waiting for a task.
Thread [19768] is waiting for a task.
Thread [5398] is waiting for a task.
Thread [35204] is waiting for a task.
Thread [19484] is waiting for a task.
Client IP Address: 192.168.56.1
Client Port Number: 61425
Thread [21968] is executing a task.
```

In the image above is the test for the /l command to get the list of files in the server environment that is available for download



```
Server IP Address: 192.168.56.1
Server Port Number: 9000
/q
disconnection...
C:\Users\geral\Downloads\Telegram Desktop\Assignment3 (2)\Assignment3\Client_Project\64\Debug\Client_Project.exe (process 24824) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .

UDP server port number: 9010
TCP Server Port Number: 9000
Server IP Address: 192.168.56.1
Thread [31988] is waiting for a task.
Thread [22056] is waiting for a task.
Thread [22928] is waiting for a task.
Thread [31184] is waiting for a task.
Thread [28636] is waiting for a task.
Thread [31664] is waiting for a task.
Thread [34700] is waiting for a task.
Thread [24820] is waiting for a task.
Thread [17268] is waiting for a task.
Thread [31388] is waiting for a task.
Client IP Address: 192.168.56.1
Client Port Number: 61475
Thread [31988] is executing a task.
```

In the image above is the test for the /q command to quit the program

```
C:\Users\genl\Downloads\Ne >
Server IP Address: 192.168.56.1
Server Port Number: 9000
/d 192.168.56.1:9010 hell.txt
Downloading file: hell.txt from 192.168.56.1:9010
disconnection...
Receiving file: hell.txt ...
File downloaded successfully: hell.txt
|

C:\Users\genl\Downloads\Ne >
UDP server port number: 9010
TCP Server Port Number: 9000
Server IP Address: 192.168.56.1
Thread [23236] is waiting for a task.
Thread [359694] is waiting for a task.
Thread [25472] is waiting for a task.
Thread [32592] is waiting for a task.
Thread [33860] is waiting for a task.
Thread [13388] is waiting for a task.
Thread [28316] is waiting for a task.
Thread [36332] is waiting for a task.
Thread [33424] is waiting for a task.
Thread [35952] is waiting for a task.

Client IP Address: 192.168.56.1
Client Port Number: 61516
Thread [23236] is executing a task.
Requested file: =====
File open failed!
Graceful shutdown.
Thread [23236] is waiting for a task.
|
```

In the image above is the test for the /d command. As shown above there is communication but the file name extracted is not the correct file name which ends up having errors when the file transfer wants to open the file to start transferring the data.