Assignment #1

File Server & Client

Clemens Lo

A00863045

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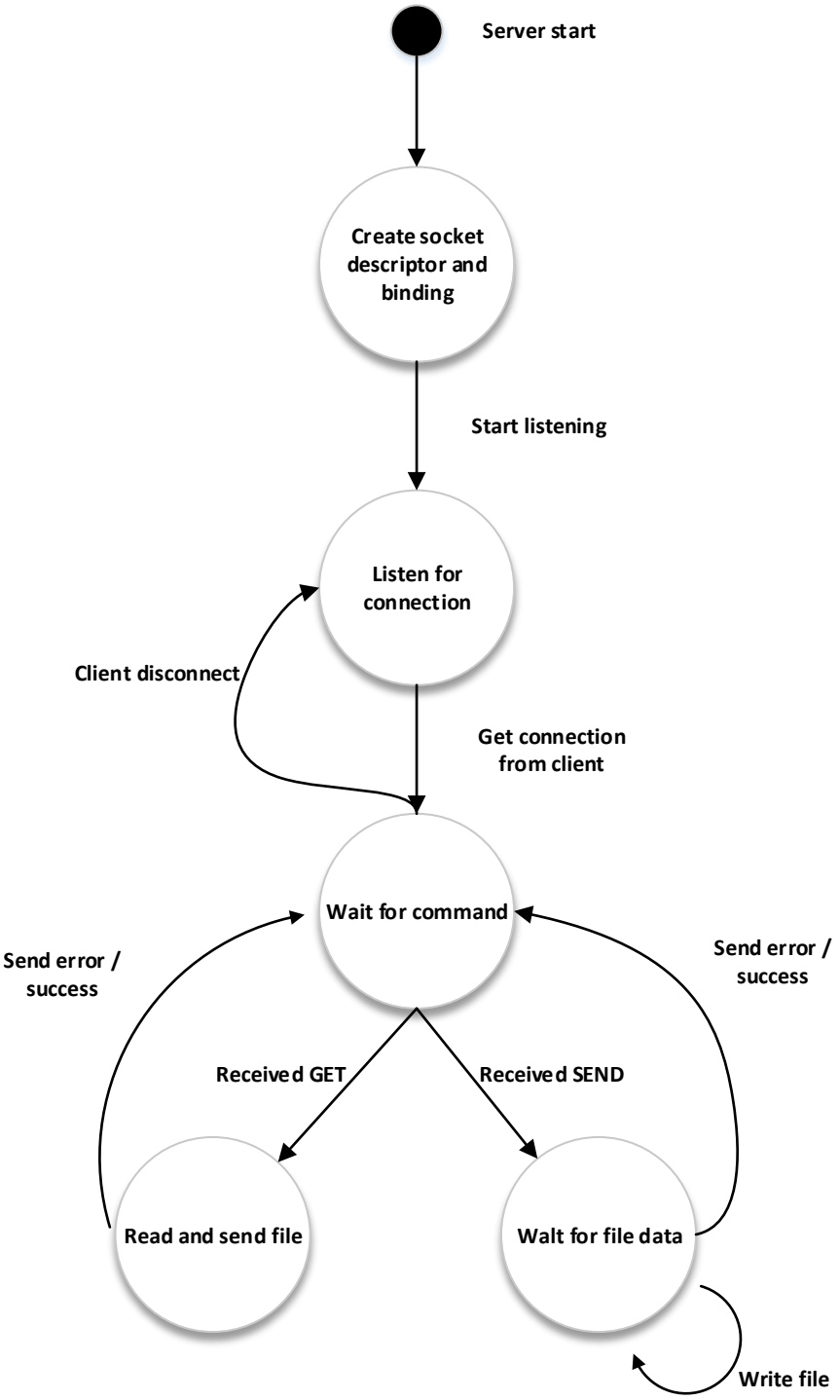
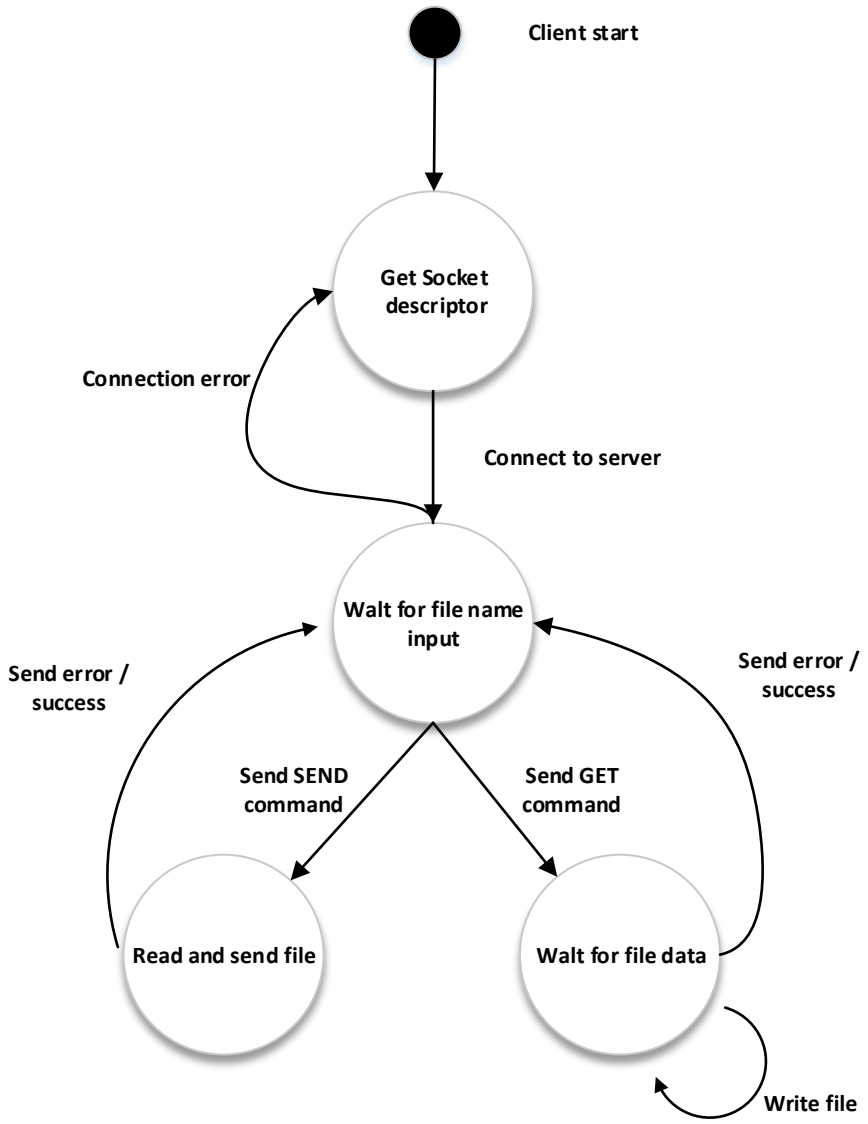
OVERVIEW

The assignment was to create a client and server application that enabled sending files between computers. Most configuration data is input though command line arguments. Server can only handle single client at the same time.

DESIGN WORK

Diagrams





PSEUDOCODE – SERVER

Send Data:

```
Recv fileName from client
if (file does not exist)
      print error message
else
      read file into dataBuffer
      send dataBuffer to server
close connect
```

Receive Data:

```
Recv fileName from client
if (file does not exist)
      print error message
else
      receive dataBuffer and write into file
close connection
```

Main:

```
Parse command and store into variables
Attempts to bind socket with port
Attempts to listen connection
While(1)
      Wait connection
      recv command
      if (command is SEND)
            run Receive Data method
      else if (command is GET)
            run Send Data method
```

PSEUDOCODE – CLIENT

Send Data:

```
Send command to server
Get file name from user input
if (file does not exist)
      Print error message
else
      send file name to server
      read file into data buffer
      send data buffer to server
```

Receive Data:

```
Send command to server
Get file name from user input
send file name to server
if (file does not exist)
```

```
      Print error message
else
      receive data buffer and write into file
```

Main:

```
Parse command and store into variables
Attempt to open socket connection to server
if (server not responding)
      print error
      exit
else
      print success
if (command is GET)
      run Receive Data method
if (command is SEND)
      run Send Data method
```

TESTING

The testing revolved sending file between client and server. I used text, zip, and jpg file as testing samples. In order to verify whether a file was successfully sent though the application, I compared the two files using the diff command. The result showed the files wear the same.

Additionally, I tested whether the client or server can handled non-existing file request. I simply tested it by making a GET/SEND request with non-existing file name on both client and server side. The result showed both client and server will shows error message and close the connection if the requested file does not exist. Also if the requested file is already on the destination, the application will overwrite it.