COMP 8005 ASSIGNMENT 2 DESIGN DOCUMENT
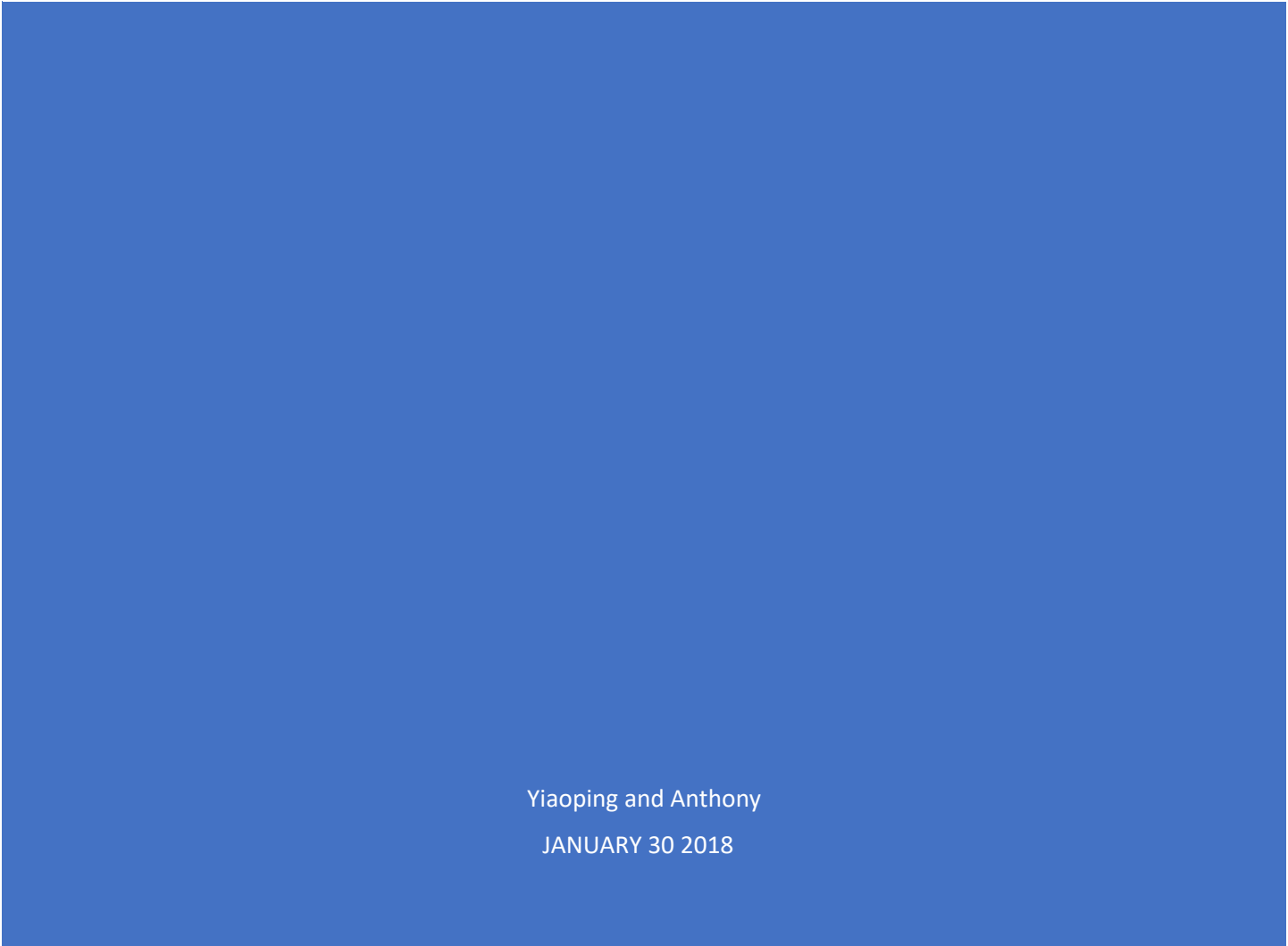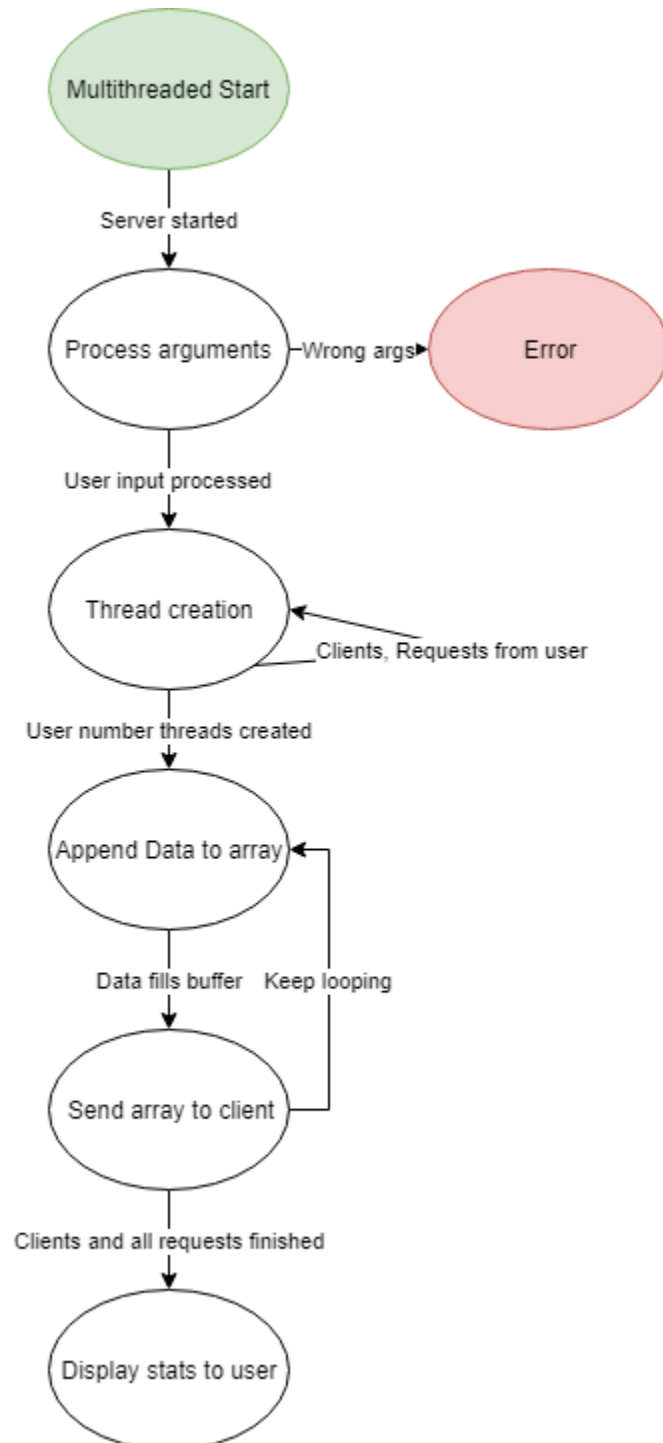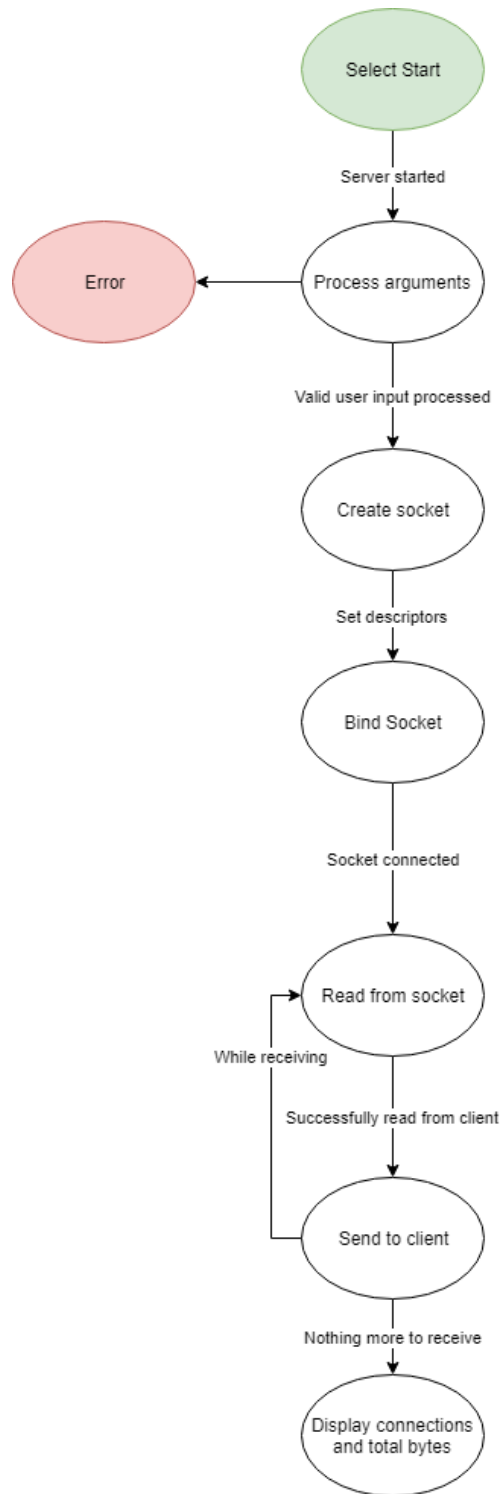
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Multithreaded Server Design:

Multithreaded Start

↓ Server started

Process arguments —Wrong args→ Error

↓ User input processed

Thread creation ← Clients, Requests from user

↓ User number threads created

Append Data to array

↓ Data fills buffer   Keep looping

Send array to client

↓ Clients and all requests finished

Display stats to user

Select Server Design

Select Start

Server started

Process arguments → Error

Valid user input processed

Create socket

Set descriptors

Bind Socket

Socket connected

Read from socket

While receiving

Successfully read from client

Send to client

Nothing more to receive

Display connections and total bytes

Epoll Design

Epoll Start

Server started

Process arguments

Incorrect args → Error

Valid arguments processed

Create Socket

Read from socket

While receiveing

Successfully read

Send to client

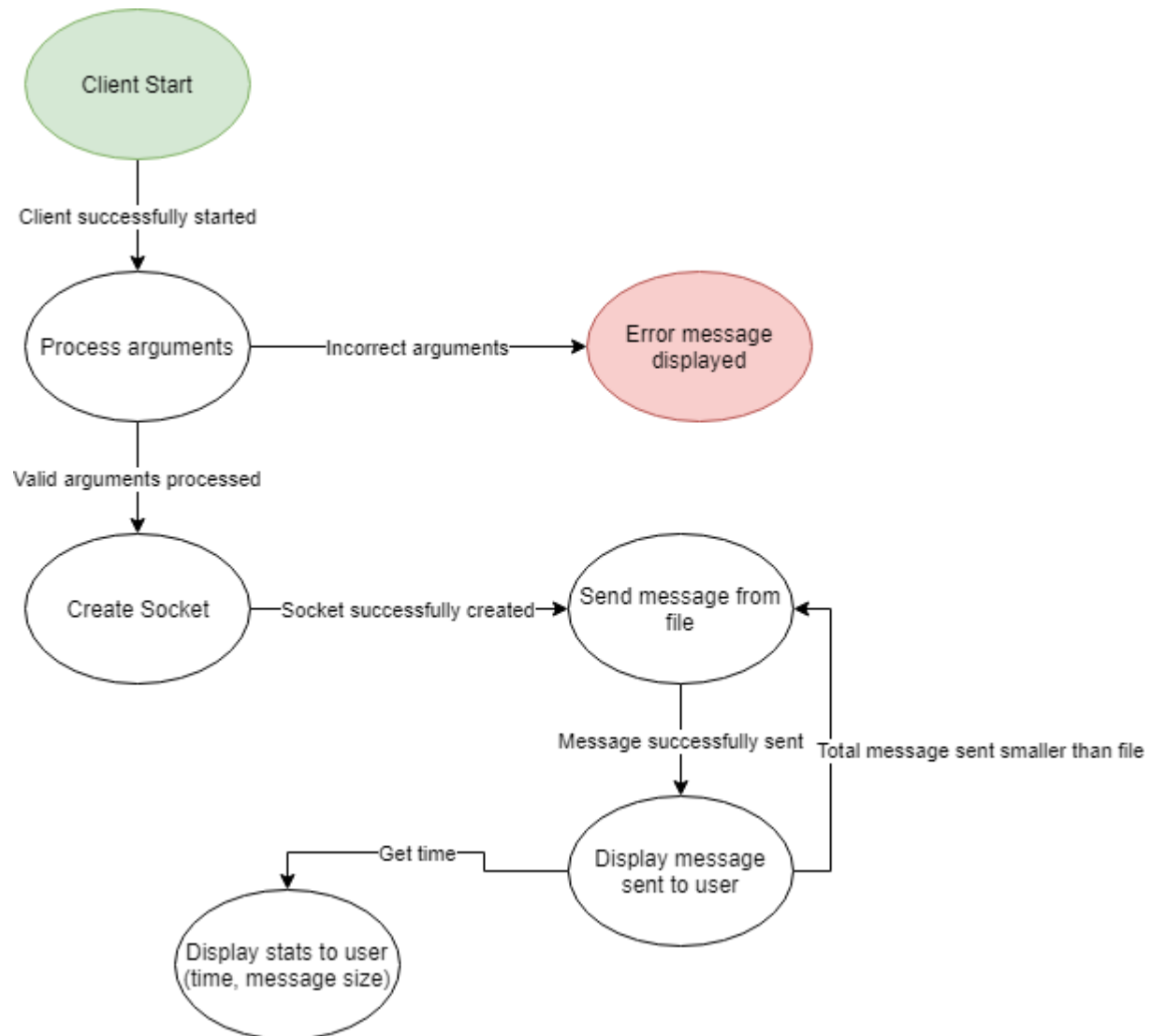No more to receive → Display connections and total bytes

Client Design:

Pseudocode

Multithread

Get user arguments

 if user displays incorrect arguments

  display error message

Main

 Pass in server information to ThreadingMixIn library

 run thread_handler

 Handle client requests until shutdown is told, polling for shutdown

 Display stats to user

thread_handler

 while true

  if data being received

   create thread

   append thread to thread array

   join threads

   display message to user

   if send data back fails

    display sending error message

  Cleanup threads

Select

Get user arguments

    If user arguments incorrect

        Display error message

Make socket selector select

Create socket

    Accept connection

        Bind socket

        Set non-blocking

    while true

        Read from socket

        Display current number of connections

Display stats on server kill

    Time displayed

Read

    Receive buffer from socket of buffer size

    If data being received

        store data array

        send array

else close socket

Epoll

Get user arguments

If user arguments incorrect

Display error message

Make socket selector EPoll

Create socket

Listen for connection from client

Accept and bind socket

Set non-blocking socket

while true

Read from socket

Display active connections to user

Display stats on server kill

Time displayed

Read

Receive buffer from socket of buffer size

If data being received

store data array

send array

else close socket

    display message to user