**Window Setup**

Open new window and register the window

Setup menu with “tcp/udp”, “client/server”, “packet size”, “port number”, “ip”, “send count”, “select file”, “connect” options

Set default selected values for “tcp/udp”, “client/server”, “packet size”, “port number”, “send count”,

**Listen for User Options**

Listen for user to select menu option

If user selects “tcp” or “udp”

Set the communication protocol to user selection

If user selects “client” or “server”

Set the communication side to the user selection

If user selects “packet size”

Set the packet size to the user selection

If user selects “port number”

Set the port number to the user selection

If user selects “ip”

Open dialogue box

Set the ip address to the user input

If user selects “send count”

Set the send count to the user selection

If user selects “select file”

Open file dialog box

Set the file path to the user selection

If user selects “connect” options

Go to ***Open Socket***

**Open Socket**

If protocol is “tcp”

Attempt to open socket for streaming

If socket failed

Record error

Exit program

If socket opened successfully

If selected side is “server”

Go to ***Open file for reading***

If selected side is “client”

Got to ***Open file for writing***

If protocol is “udp”

Attempt to open socket for datagrams

If socket failed

Record error

Exit program

If socket opened successfully

If selected side is “server”

Go to ***Open file for reading***

If selected side is “client”

Got to ***Open file for writing***

**Open file for writing**

Attempt to open file with selected path for writing

If open file is unsuccessful

Print error message

Go to ***Listen for User Options***

If open file is successful

If protocol is “tcp”

Go to ***Connect to Server***

If protocol is “udp”

Go to ***Bind Socket***

**Open file for reading**

Attempt to open file with selected path for reading

If open file is unsuccessful

Print error message

Go to ***Listen for User Options***

If open file is successful

If protocol is “tcp”

Go to ***Bind Socket and Listen***

If protocol is “udp”

Go to ***Bind Socket***

**Bind Socket**

Attempt to bind socket to selected ip address and port number

If bind is unsuccessful

Print error message

Go to ***Listen for User Options***

If bind is successful

Set network events for bound socket to prompt windows notification

If selected side is “client”

Go to ***Listen for Read Event***

If selected side is “server”

Go to ***Wait for Write Event***

**Bind Socket and Listen**

Attempt to bind socket to selected ip address and port number

If bind is unsuccessful

Print error message

Go to ***Listen for User Options***

If bind is successful

Attempt to listen bound socket

If listen is unsuccessful

Print error message

Go to ***Listen for User Options***

If listen is successful

Set network events for bound socket to prompt windows notification

Go to ***Wait for Write Event***

**Connect to Server**

Attempt to connect socket to selected ip address and port number

If connect is unsuccessful

Print error message

Go to ***Listen for User Options***

If connect is successful

Set network events for bound socket to prompt windows notification

Go to ***Wait for Write Event***

**Wait for Write Event**

If a write event is received

Go to ***Send Data***

**Send Data**

Iterate through file

While not at the end of file

Read packet size amount of data

Send data through socket

If end of file is reached

Send special end code through socket

***Go to Cleanup Session***

**Listen for Read Event**

If a read event is received

Go to ***Read Data and Write to File***

**Read Data and Write to File**

Read data from socket

If data received equals special end code

***Go to Cleanup Session***

If data received does not equal special end code

Write data to file

Go to ***Listen for Read Event***

**Cleanup Session**

Close opened file

Close bound socket

Go to ***Listen for User Options***