Programming Assignment 1
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COMP 4320
Fall 2023

1. **Does my program work?**

   Yes, my program does work.

2. **How to execute my program:**

   To execute my program, please follow the following steps:
   1. Download the files Decoder.java, DecoderBin.java, Encoder.java, EncoderBin.java, SendUDP.java, RecvUDP.java
   2. Compile the programs in the order that is listed in Step 1 on a signed in tux machine
   3. Run the command "java RecvUDP 10058" on a signed in AU tux machine, the Server should now be running
      a. Please take note of the tux machine you are signed in on
   4. On a separate AU tux machine, run the command "java SendUDP **tux#** 10058"
      a. Please note that **tux#** will be replaced with the name of the tux machine you are signed in on for step 3/for the server.
   5. When prompted on the client, enter a value that fits in the parameters given by the program.
   6. After the program executes the first time, you will be prompted with "Would you like to enter another number? [y/n]: ". Please type "y" to continue or "n" to have the Client stop running. Please do not enter any other values.
      a. If you type "y", just repeat from **step 5**

Minimum: 3.489428 (ms)
Maximum: 24.724638 (ms)
Average: 7.9823972 (ms)

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Command Prompt - ssh jpm(    ×    +    ∨

jpm0092@tux065:~/Desktop/COMP4320/ProgrammingAssignment1$ date
Wed Oct  4 14:36:25 CDT 2023
jpm0092@tux065:~/Desktop/COMP4320/ProgrammingAssignment1$ java SendUDP tux064 10058
Please enter an integer to encode between -32768 and 32767: 16738
41
62
The received echo from the server in hexadecimal:
FE
FF
00
31
00
36
00
37
00
33
00
38
The received echo string from the server is:
16738
To send and receive a message, it took: 21.373024ms.
Would you like to enter another number? [y/n]: y
Please enter an integer to encode between -32768 and 32767: 12000
2E
E0
The received echo from the server in hexadecimal:
FE
FF
00
31
00
32
00
30
00
30
00
30
The received echo string from the server is:
12000
To send and receive a message, it took: 4.882551ms.
Would you like to enter another number? [y/n]: n
```

Client Screenshot

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jpm0092@tux064:~/Desktop/COMP4320/ProgrammingAssignment1$ date
Wed Oct  4 14:36:02 CDT 2023
jpm0092@tux064:~/Desktop/COMP4320/ProgrammingAssignment1$ java RecvUDP 10058
Handling client at 131.204.14.65 on port 53853
The decoded hexadecimal short received is:
41
62
Received Binary-Encoded Short:
16738
Converting received short to String...
Hexadecimal UTF-16 Encoding of Response String:
FE
FF
00
31
00
36
00
37
00
33
00
38
Handling client at 131.204.14.65 on port 37508
The decoded hexadecimal short received is:
2E
E0
Received Binary-Encoded Short:
12000
Converting received short to String...
Hexadecimal UTF-16 Encoding of Response String:
FE
FF
00
31
00
32
00
30
00
30
00
30
```

Server Screenshot