SERVER Code:

```
import socket
import threading
import random

HEADER = 64
PORT = 5050
SERVER = socket.gethostbyname(socket.gethostname())
NAME = socket.gethostname()
ADDR = (SERVER, PORT)
FORMAT = 'utf-8'

server = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
server.bind(ADDR)

def handle_client(conn, addr):
    print(f"\nServer of {NAME}")
    print(f"\n[NEW CONNECTION] {addr} connected.")

    connected = True
    while connected:
        msg_length = conn.recv(HEADER).decode(FORMAT)
        if msg_length:
            msg_length = int(msg_length)
            msg = conn.recv(msg_length).decode(FORMAT)
            msg1 = msg.split(':')
            if int(msg1[1]) < 1 or int(msg1[1])> 100:
                connected = False
                conn.send("DISCONNECTING...".encode(FORMAT))

            else:
                serverNo = random.randint(1,100)
                cl_name = msg1[0]
                print(f"\n[Server Response]:")
                print(f"[Client Name]: {cl_name[10:]}")
                print(f"[Client number]: {msg1[1]}")
                print(f"[Server's Name]: {NAME}")
                print(f"[Server's number]: {serverNo}")
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                print(f"[Sum of numbers]: {msg1[1]} +
{serverNo} = {int(msg1[1])+serverNo}")
                conn.send(f"[Server of {NAME}]:
{serverNo}".encode(FORMAT))
    conn.close()

def start():
    server.listen()
    print(f"[LISTENING] Server is listening on {SERVER}")
    while True:
        conn, addr = server.accept()
        thread = threading.Thread(target=handle_client,
args=(conn, addr))
        thread.start()
        print(f"\n[ACTIVE CONNECTIONS]
{threading.active_count()-1}")

print("[STARTING] Server is starting...")
start()
```

CLIENT Code:

```
import socket

HEADER = 64
PORT = 5050
SERVER = socket.gethostbyname(socket.gethostname())
ADDR = (SERVER, PORT)
NAME = socket.gethostname()
FORMAT = 'utf-8'
DISCONNECT_MESSAGE = "exit"
ABORT = "DISCONNECTING..."


client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
client.connect(ADDR)

def send(msg):
    message = msg.encode(FORMAT)
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    msg_length = len(message)
    send_length = str(msg_length).encode(FORMAT)
    send_length += b' '*(HEADER - len(send_length))
    client.send(send_length)
    client.send(message)
    # data = client.recv(2048).decode(FORMAT)
    # print(f"{data}")


clientMsg = ''
data = ""
while clientMsg != DISCONNECT_MESSAGE:
    num = int(input("\nEnter a number between 1 and 100: "))
    send(f"Client of {NAME}:{num}")
    data = client.recv(2048).decode(FORMAT)
    msg1 = data.split(':')
    print(f"{data}")
    if data == ABORT:
        clientMsg = DISCONNECT_MESSAGE
    else:
        print(f"[Sum of numbers]: {num} + {msg1[1]} = {num + int(msg1[1])}")
```