

# CN Assignment 1

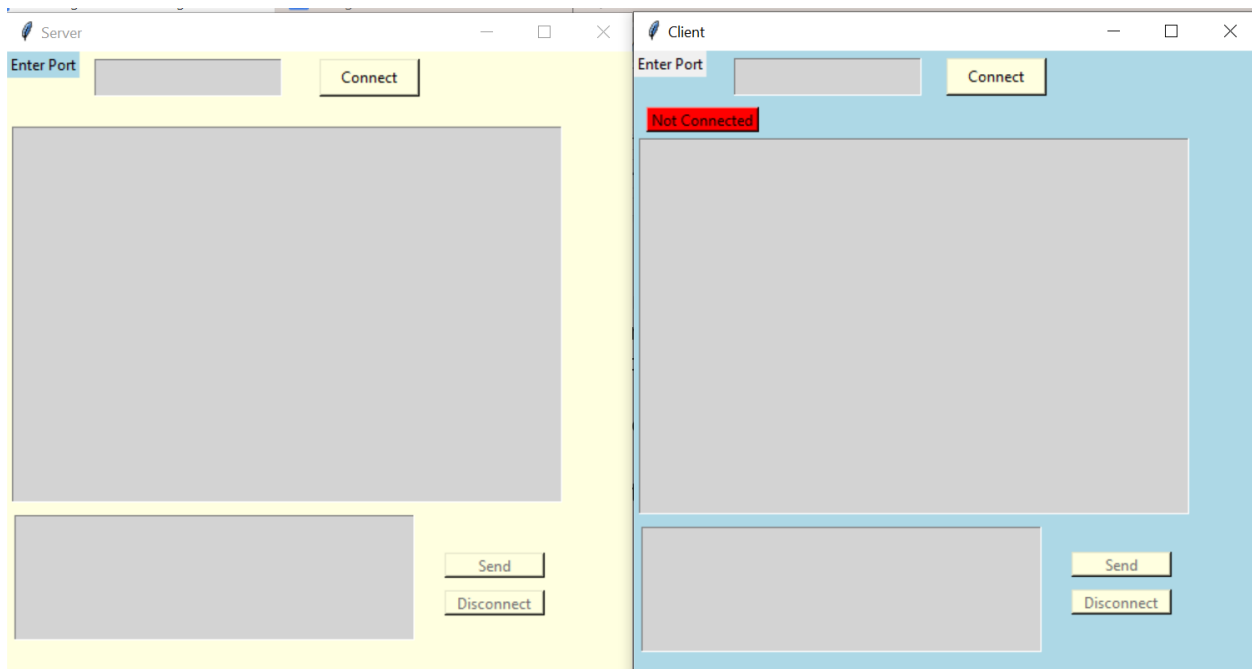
**Group members:**

**20k-0477**

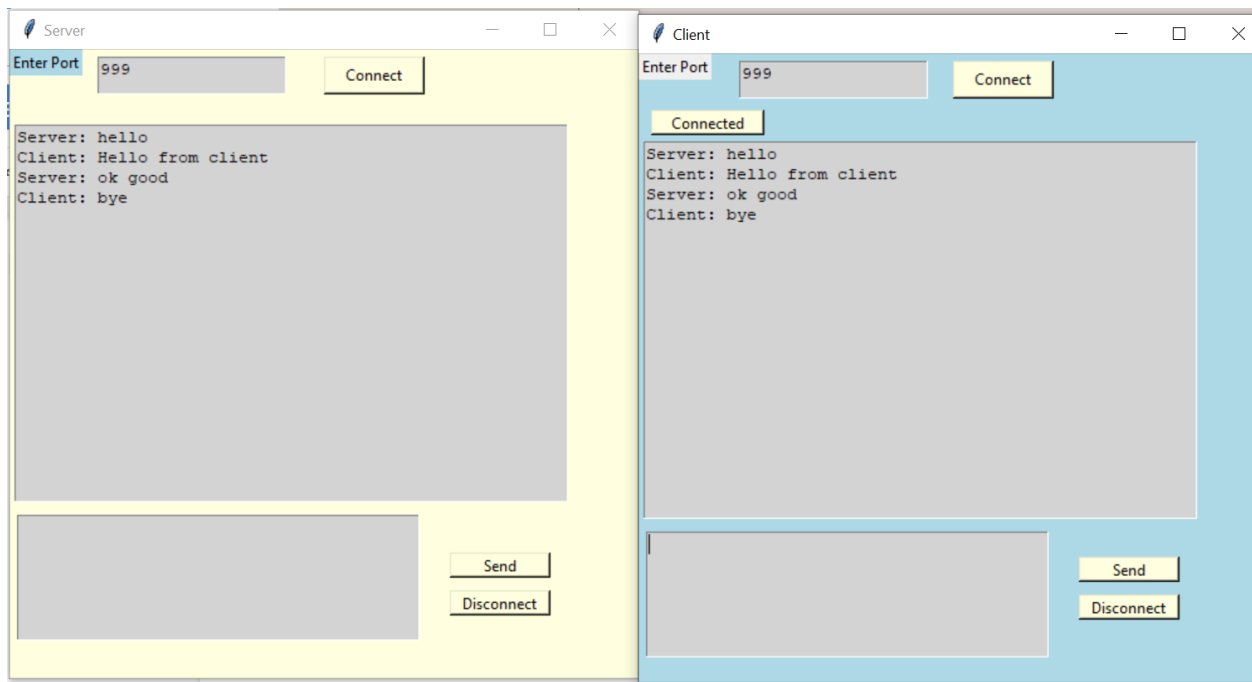
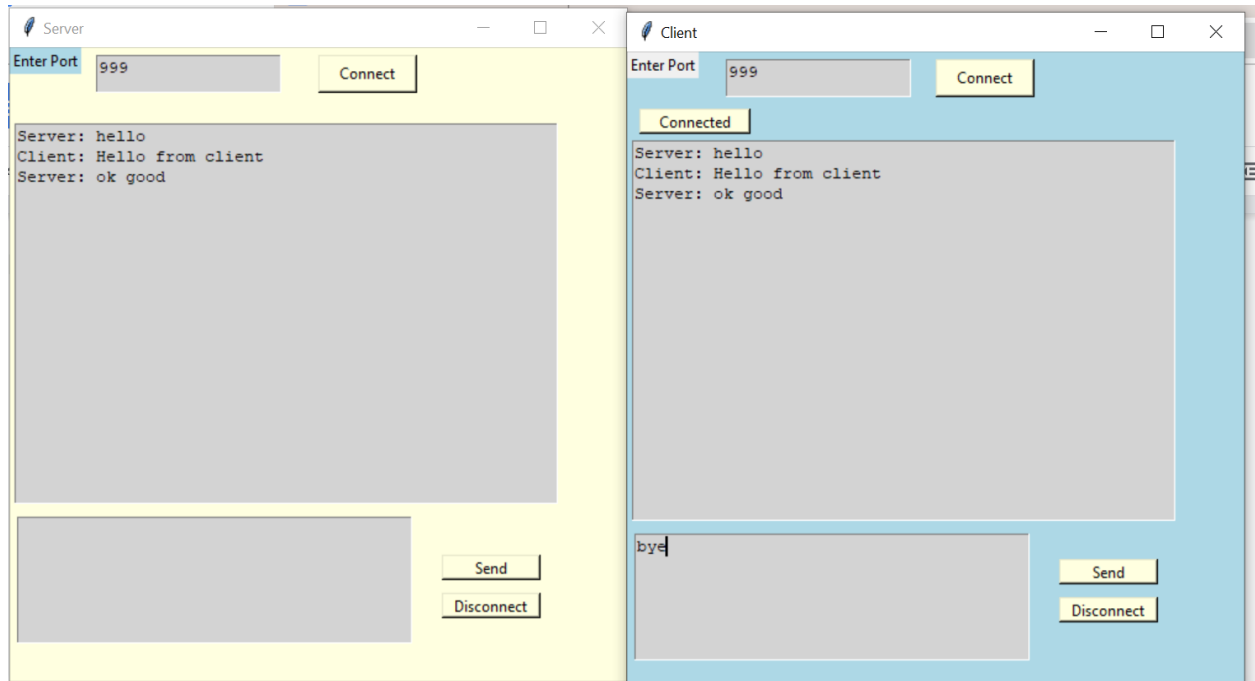
**20k-0385**

We have used socket programming to create a connection oriented chat messenger system. Connection will be made with the **local host** as the same system is being used for both programs. For GUI, we used Python's library "**Tkinter**". Both server and client will have to enter same port number to get connected and now they can send and receive messages from each other

First, both server and client will have to enter port number to connect:



After clicking on connect, a connection will be established between both server and client. Now they can send and receive messages to each other



## Server code:

```
from socket import *
from tkinter import *
import _thread as mythread

def disconnect():
    server.close()
    type.config(state=DISABLED)
    button2.config(state=DISABLED)

def receivemsg():
    while 1:
        try:
            msg = server.recv(1024).decode()
            chat.config(state=NORMAL)
            chat.insert(END, 'Client: ' + msg)
            chat.config(state=DISABLED)
        except:
            pass

def send():
    message = type.get("0.0",END)
    chat.config(state=NORMAL)
    chat.insert(END, 'Server: ' + message)
    chat.config(state=DISABLED)
    server.send(message.encode())
    type.delete("0.0", END)

def connection():
    global server
    port_num=ip.get("0.0",END)
    port=int(port_num)
    s = socket(AF_INET, SOCK_STREAM)
    s.bind(('localhost',port))
    s.listen()
    server, addr = s.accept()
    button2.config(state=NORMAL)
    button3.config(state=NORMAL)
    type.config(state=NORMAL)

def GUI():
    global type
    global chat
    global ip
```

```

global button1
global button2
global button3
root = Tk()
mythread.start_new_thread(receivemsg, ())
label1=Label(root,text="Enter Port",bg="light blue")
label1.grid(column=0 ,row=1)
chat=Text(root,bg='light grey',fg='black')
chat.config(state=DISABLED)
root.config(bg="light yellow")
root.title("Server")
root.geometry("500x500")
button1 = Button(root,bg="light yellow", text="Connect",
command=connection)
button2 = Button(root,bg="light yellow", text="Send", command=send)
button2.config(state=DISABLED)
button3 = Button(root, bg="light yellow",
text="Disconnect",command=disconnect)
button3.config(state=DISABLED)
type=Text(root,bg='light grey',fg='black')
type.config(state=DISABLED)
ip = Text(root, bg='light grey')
ip.place(x=70, y=6, height=30, width=150)
button1.place(x=250, y=6, height=30, width=80)
chat.place(x=4, y=60, height=300, width=440)
type.place(x=6, y=370, height=100, width=320)
button2.place(x=350, y=400, height=20, width=80)
button3.place(x=350, y=430, height=20, width=80)
root.mainloop()
GUI()

```

## Client code:

```
import _thread
from socket import *
from tkinter import *

def disconnect():
    client.close()
    type.config(state=DISABLED)
    button2.config(state=DISABLED)
    button3.config(text="Not connected",bg="red")

def send():
    message = type.get("0.0",END)
    chat.config(state=NORMAL)
    chat.insert(END, 'Client: ' + message)
    chat.config(state=DISABLED)
    client.send(message.encode())
    type.delete("0.0", END)

def receivemsg():
    while 1:
        try:
            msg = client.recv(1024).decode()
            chat.config(state=NORMAL)
            chat.insert(END, 'Server: ' + msg)
            chat.config(state=DISABLED)

        except:
            pass

def connection():
    global client
    port_num=ip.get("0.0",END)
    port=int(port_num)
    client= socket(AF_INET, SOCK_STREAM)
    ipaddress ='localhost'
    client.connect((ipaddress,port))
    button3.config(text="Connected",bg="light yellow")
    button2.config(state=NORMAL)
    button4.config(state=NORMAL)
    type.config(state=NORMAL)
```

```

def GUI():
    global root
    global type
    global chat
    global ip
    global button2
    global button3
    global button4
    root = Tk()
    root.config(bg="light blue")
    root.title("Client")
    _thread.start_new_thread(receivemsg, ())

    label1 = Label(root, text="Enter Port")
    label1.grid(row=4, column=1)
    chat = Text(root, bg='light grey', fg='black')
    chat.config(state=DISABLED)
    root.geometry("500x500")
    button1 = Button(root, bg='light yellow', text="Connect",
command=connection)
    button2 = Button(root, bg='light yellow', text="Send", command=send)
    button2.config(state=DISABLED)
    button3 = Button(root, bg='red', text="Not Connected")
    button4 = Button(root, bg="light yellow", text="Disconnect",
command=disconnect)
    button4.config(state=DISABLED)
    ip = Text(root, bg='light grey')
    type = Text(root, bg='light grey', fg='black')
    type.config(state=DISABLED)
    ip.place(x=80, y=6, height=30, width=150)
    button1.place(x=250, y=6, height=30, width=80)
    button3.place(x=10, y=45, height=20, width=90)
    chat.place(x=4, y=70, height=300, width=440)
    type.place(x=6, y=380, height=100, width=320)
    button2.place(x=350, y=400, height=20, width=80)
    button4.place(x=350, y=430, height=20, width=80)
    root.mainloop()

GUI()

```