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CSC 138
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Socket Programming 1

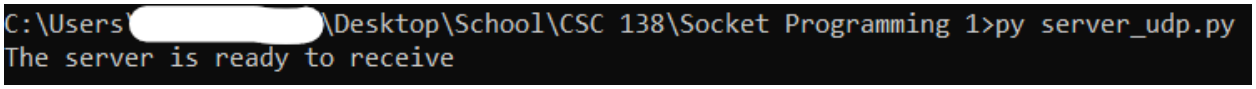
Client UDP

```python
from socket import *

# Capture the serverName which we will use to connect to the socket
serverName = '127.0.0.1'

# Use a random serverPort as long as it matches up with the serverPort in the server_udp.py file
serverPort = 12111

# Create a client socket using the information above
clientSocket = socket(AF_INET, SOCK_DGRAM)

# Take the input that the user has entered
message = input('Input a sentence:')

# Sent the encoded message that the user enetered to the server
clientSocket.sendto(message.encode(),(serverName, serverPort))

# Retrieve the message from the server
modifiedMessage, serverAddress = clientSocket.recvfrom(2048)

# Print the decoded version of the modifiedMessage
print (modifiedMessage.decode())

# Close the connection
clientSocket.close()
```

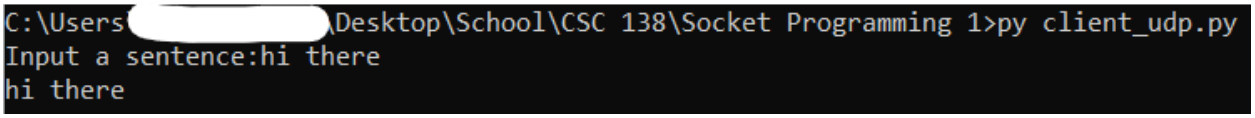
Server UDP

```python
from socket import *

# Use the same serverPort as the one in the client
serverPort = 12111

# Create a server socket
serverSocket = socket(AF_INET, SOCK_DGRAM)

# Bind the serverSocket with the serverPort number
serverSocket.bind(('', serverPort))

# Print the message to display that the server is ready
print('The server is ready to receive')

while 1:

    # Recieve the encoded message and the clientAddress from the client
    message, clientAddress = serverSocket.recvfrom(2048)

    # Modify the message that we recieved
    modifiedMessage = message.lower()

    # Sent the modifiedMessage to the clientAddress that was given to us
    serverSocket.sendto(modifiedMessage, clientAddress)
```

Server UDP Results



Client UDP Results



Client TCP

```python
from socket import *

# Capture the serverName which we will use to connect to the socket
serverName = '127.0.0.1'

# Use a random serverPort as long as it matches up with the serverPort in the server_tcp.py file
serverPort = 12113

# Create a client socket
clientSocket = socket(AF_INET, SOCK_STREAM)

# Connect the clientSocket to the serverName and serverPort
clientSocket.connect((serverName,serverPort))

# Take the input that the user has entered
sentence = input('Input a sentence:')

# Send the encoded message that the user enetered to the server
clientSocket.send(sentence.encode())

# Retrieve the message from the server
modifiedSentence = clientSocket.recv(1024)

# Print the decoded version of the modifiedMessage
print('From Server:', modifiedSentence.decode())

# Close the connection
clientSocket.close()
```

Server TCP

```python
from socket import *

# Use the same serverPort as the one in the client
serverPort = 12113

# Create a server socket
serverSocket = socket(AF_INET,SOCK_STREAM)

# Bind the serverSocket with the serverPort number
serverSocket.bind(('',serverPort))

# Listen to the serverSocket for 1
serverSocket.listen(1)

# Print the message to display that the server is ready
print('The server is ready to receive')

while 1:

    # Accept the connectionSocket and the address from the client
    connectionSocket, addr = serverSocket.accept()

    # Recieve the encoded sentence
    sentence = connectionSocket.recv(1024)

    # Change the sentence to uppercase letters
    capitalizedSentence = sentence.upper()

    # Sent the modified sentence back to the client
    connectionSocket.send(capitalizedSentence)

    # Close the connection
    connectionSocket.close()
```

Server TCP Results

```
C:\Users\[redacted]\Desktop\School\CSC 138\Socket Programming 1>py server_tcp.py
The server is ready to receive
```

Client TCP Results

```
C:\Users\[redacted]\Desktop\School\CSC 138\Socket Programming 1>py client_tcp.py
Input a sentence:Igor Oleshko
From Server: IGOR OLESHKO
```