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Professor Jun Dai

CSC138

03/27/2021

Socket Programming

Objective: To learn about socket programming by sending a sentence in lower case to a server and have it return to the client displayed in upper case.

Lab Procedure TCP Socket:

1. I opted to use two computers on my wifi for this lab. The client computer is a Linux Ubuntu machine and the server is a windows 10 machine. In order to program the client socket, I need to know the allocated IP address of the windows machine. I found this information by going to settings → WiFi → Hardware Properties.

🏠 Wi-Fi

Properties

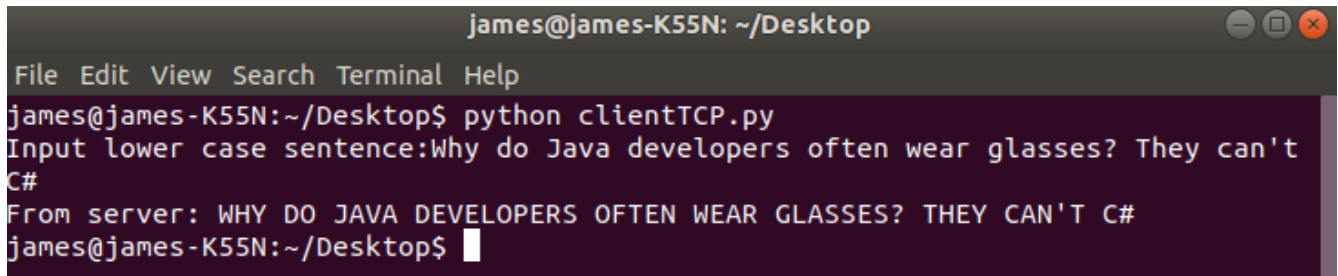
SSID:	scohoot
Protocol:	Wi-Fi 4 (802.11n)
Security type:	WPA2-Personal
Network band:	2.4 GHz
Network channel:	1
Link speed (Receive/Transmit):	54/72 (Mbps)
IPv6 address:	2600:1700:4390:e840::13 2600:1700:4390:e840:9825:1bc2:7 067:993
Link-local IPv6 address:	fe80::9825:1bc2:7067:993%27
IPv6 DNS servers:	2600:1700:4390:e840::1
IPv4 address:	192.168.1.69
IPv4 DNS servers:	192.168.1.254

2. Call the python server program on the windows machine. Please note, I will be including the annotated source code with the canvas submission.

```
C:\Windows\System32\cmd.exe - python serverTCP.py
Microsoft Windows [Version 10.0.19041.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\James Gouveia\OneDrive\Desktop>python serverTCP.py
The server is listening
```

3. Call the python client socket program on the Linux machine and input a sentence. Please note, I will be including the annotated source code with the canvas submission.



```
james@james-K55N: ~/Desktop
File Edit View Search Terminal Help
james@james-K55N:~/Desktop$ python clientTCP.py
Input lower case sentence:Why do Java developers often wear glasses? They can't
C#
From server: WHY DO JAVA DEVELOPERS OFTEN WEAR GLASSES? THEY CAN'T C#
james@james-K55N:~/Desktop$
```

Lab Procedure UDP Socket:

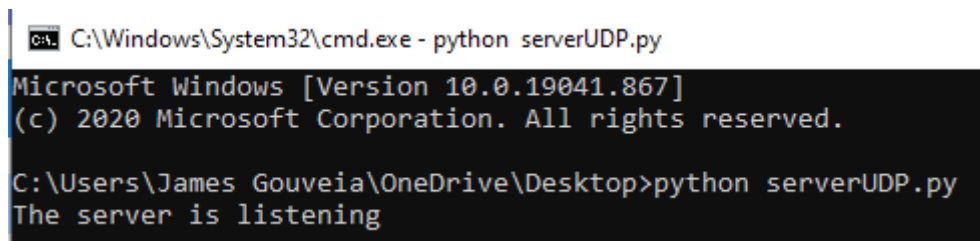
1. I opted to use two computers on my wifi for this lab. The client computer is a Linux Ubuntu machine and the server is a windows 10 machine. In order to program the client socket, I need to know the allocated IP address of the windows machine. I found this information by going to settings → WiFi → Hardware Properties.

Wi-Fi

Properties

SSID:	scohoot
Protocol:	Wi-Fi 4 (802.11n)
Security type:	WPA2-Personal
Network band:	2.4 GHz
Network channel:	1
Link speed (Receive/Transmit):	54/72 (Mbps)
IPv6 address:	2600:1700:4390:e840::13 2600:1700:4390:e840:9825:1bc2:7 067:993
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IPv6 DNS servers:	2600:1700:4390:e840::1
IPv4 address:	192.168.1.69
IPv4 DNS servers:	192.168.1.254

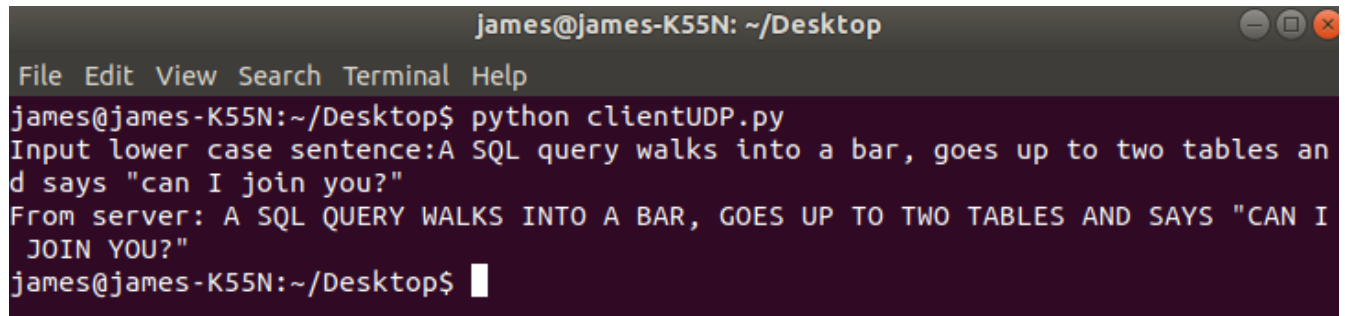
2. Call the python server program on the windows machine. Please note, I will be including the annotated source code with the canvas submission.



```
C:\Windows\System32\cmd.exe - python serverUDP.py
Microsoft Windows [Version 10.0.19041.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\James Gouveia\OneDrive\Desktop>python serverUDP.py
The server is listening
```

3. Call the python client socket program on the Linux machine and input a sentence. Please note, I will be including the annotated source code with the canvas submission.

A terminal window titled 'james@james-K55N: ~/Desktop' with a menu bar (File, Edit, View, Search, Terminal, Help) and standard window controls. The terminal shows the execution of 'python clientUDP.py'. The user inputs the sentence 'A SQL query walks into a bar, goes up to two tables and says "can I join you?"'. The program outputs the same sentence in all caps: 'A SQL QUERY WALKS INTO A BAR, GOES UP TO TWO TABLES AND SAYS "CAN I JOIN YOU?"'.

```
james@james-K55N: ~/Desktop
File Edit View Search Terminal Help
james@james-K55N:~/Desktop$ python clientUDP.py
Input lower case sentence:A SQL query walks into a bar, goes up to two tables and says "can I join you?"
From server: A SQL QUERY WALKS INTO A BAR, GOES UP TO TWO TABLES AND SAYS "CAN I JOIN YOU?"
james@james-K55N:~/Desktop$
```