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Batch: D

CEL 51, DCCN, Lab 8: Socket Programming

AIM: To implement Client Server program.

THEORY:

Socket Programming:

Socket programming is a way of connecting two nodes on a network to communicate with each other. One socket(node) listens on a particular port at an IP, while other socket reaches out to the other to form a connection. Server forms the listener socket while client reaches out to the server. They are the real backbones behind web browsing. In simpler terms there is a server and a client. Socket programming is started by importing the socket library and making a simple socket.

Server Socket Methods:

Sr.No.	Method & Description
1	s.bind() This method binds address (hostname, port number pair) to socket.
2	s.listen() This method sets up and start TCP listener.
3	s.accept() This passively accept TCP client connection, waiting until connection arrives (blocking).

Client Socket Methods:

Sr.No.	Method & Description
1	s.connect() This method actively initiates TCP server connection.

General Socket Methods:

Sr.No.	Method & Description
1	s.recv() This method receives TCP message
2	s.send() This method transmits TCP message
3	s.recvfrom() This method receives UDP message
4	s.sendto() This method transmits UDP message
5	s.close() This method closes socket
6	socket.gethostname() Returns the hostname.

CODE:

Server.py

```
C:\Users\Ankeet\Desktop\Python\DCCN8\Server.py • (RailwayTicketBooking) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help

Server.py Client.py x
1  import socket
2
3  s = socket.socket()
4
5  print('Socket Created')
6
7  s.bind(('localhost',9999))
8
9  s.listen(3)
10
11 print('waiting for connection')
12
13 while True:
14
15     c, addr = s.accept()
16
17     name = c.recv(1024).decode()
18
19     print("connected with", addr, name)
20
21     c.send(bytes("Welcome "+ name,'utf-8'))
22
```

client.py

```
C:\Users\Ankeet\Desktop\Python\DCCN8\Client.py (RailwayTicketBooking) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help

Server.py Client.py x
1 import socket
2
3 c = socket.socket()
4
5 c.connect(('localhost',9999))
6
7 name = input("Enter Your Name: ")
8
9 c.send(bytes(name,'utf-8'))
10
11 print(c.recv(1024).decode())
```

OUTPUT:

server.py

```
Command Prompt - Server.py
Microsoft Windows [Version 10.0.18363.1139]
(c) 2019 Microsoft Corporation. All rights reserved.

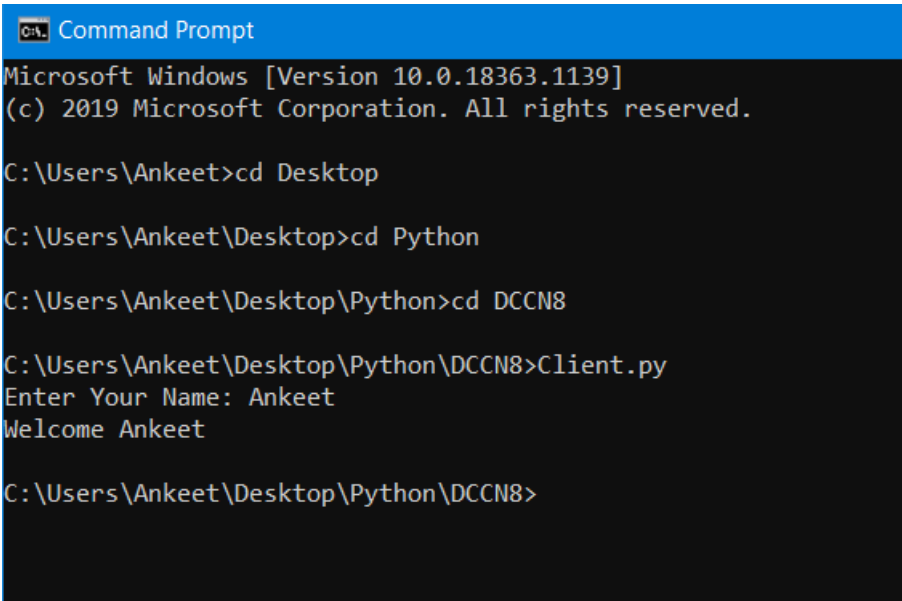
C:\Users\Ankeet>cd Desktop

C:\Users\Ankeet\Desktop>cd Python

C:\Users\Ankeet\Desktop\Python>cd DCCN8

C:\Users\Ankeet\Desktop\Python\DCCN8>Server.py
Socket Created
waiting for connection
connected with ('127.0.0.1', 52502) Ankeet
```

Client.py

A screenshot of a Windows Command Prompt window. The title bar is blue and says "Command Prompt". The window has a black background with white text. The text shows the user navigating through directories: from the root to Desktop, then to a folder named Python, and finally to a folder named DCCN8. In the DCCN8 folder, the user runs a file named Client.py. The script prompts for a name, and the user enters "Ankeet". The script then outputs "Welcome Ankeet". The prompt returns to the DCCN8 directory.

```
Microsoft Windows [Version 10.0.18363.1139]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Ankeet>cd Desktop

C:\Users\Ankeet\Desktop>cd Python

C:\Users\Ankeet\Desktop\Python>cd DCCN8

C:\Users\Ankeet\Desktop\Python\DCCN8>Client.py
Enter Your Name: Ankeet
Welcome Ankeet

C:\Users\Ankeet\Desktop\Python\DCCN8>
```

CONCLUSION:

After completing this experiment, I understood concept of socket programming.

REFERENCE:

https://www.tutorialspoint.com/python/python_networking.htm