

Computer Networks Lite

Lab #6

SE20UARI002

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Idea:

1)

For the modifying the PingServer.java to PingClient.java I changed the while loop to a for loop that runs for a total of 10 times

```
the packetNotReceived[] = new int[10];
for(int i=0;i<10;i++)
{
    // Create a datagram packet to hold outgoing UDP packet.
    //Each message contains
    // a payload of data that includes the keyword PING,
    // a sequence number, and a timestamp.
    Random random = new Random();
    long SendTime = System.currentTimeMillis();
    String Message = "Ping " + i + " " + SendTime + "\n";
    DatagramPacket request =new DatagramPacket(Message.getBytes(),
    socket.send(request);
    DatagramPacket reply =new DatagramPacket(new byte[1024], lenght
    socket.setSoTimeout(timeout: 1000);
    try
    {
        socket.receive(reply);
    }
    catch(IOException E)
    {
        System.out.println(x: " Reply not sent.");
    }
    long RecieveTime = System.currentTimeMillis();
    long Time_Taken=RecieveTime-SendTime;
    if(random.nextDouble() < 0.3)
    {
        packetNotRecivied[i] = 1;
    }
    timeTakenArray[i] = Time_Taken;
    printData(reply,Time_Taken, packetNotRecivied[i]);

    // Thread.sleep(1000);
}
```

Which then creates a new Datagram packet and sends it to the server and if it receives Null pointer back then it prints a Reply not sent message into the terminal

But if it receives a packet it sends prints out the data of the packet with the sequence number, host IP address the message that it received in bit format with the amount of time it took to send and receive the message.

```
PS C:\Users\91900\Desktop\College\Computer Networks Lite\Lab 6> java PingClient 127.0.0.1 8055
Received from 127.0.0.1: Ping 0 1667569168670
Time Taken: 69ms
Received from 127.0.0.1: Ping 1 1667569169757
Time Taken: 142ms
Reply not sent.
Received from 127.0.0.1: Ping 3 1667569171020
Time Taken: 53ms
Reply not sent.
Reply not sent.
Received from 127.0.0.1: Ping 6 1667569172230
Time Taken: 199ms
Received from 127.0.0.1: Ping 7 1667569173432
Time Taken: 63ms
Reply not sent.
Received from 127.0.0.1: Ping 9 1667569174509
Time Taken: 84ms
```

After printing out the following data it prints out the Max RTT, the Min RTT and the Avg RTT from all the packets.

```
The Max RTT is 199
The Min RTT is 53
The Avg RTT is 61.0
```

The Logic for calculating each value is a very simple linear search of an array where each value is stored, and finding the max, min and sum of the values then calculating the Avg RTT.

The Code also sends a ping only every 1 second and if it does't receive any ping back it sends the message "Replay not sent."