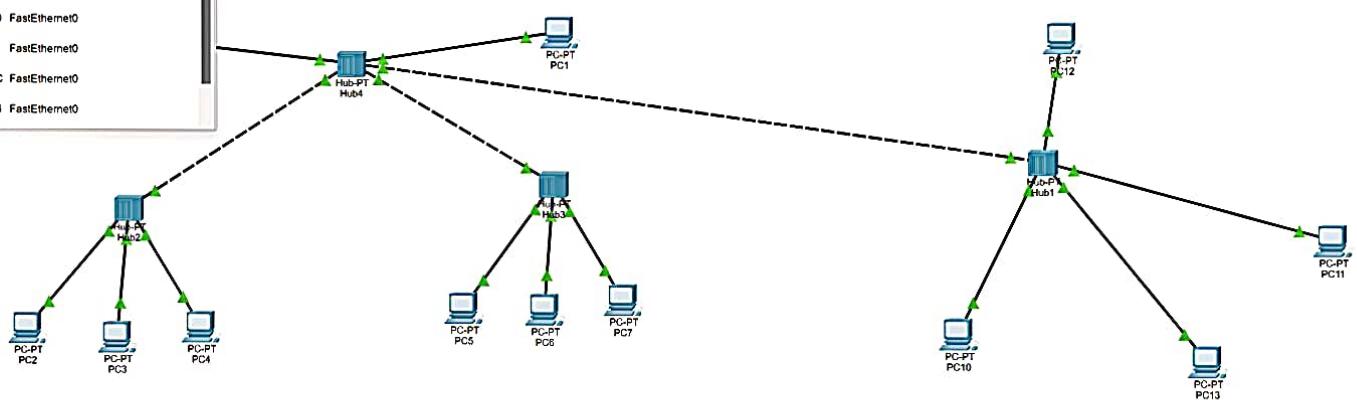


File Edit Options View Tools Extensions Window Help

Logical Physical x: 1355, y: 440

Root

ARP Table for PC0		
IP Address	Hardware Address	Interface
135.19.12.2	0002.4ABB.4E49	FastEthernet0
135.19.12.4	0001.64E4.E194	FastEthernet0
135.19.12.6	0006.2A8A.E500	FastEthernet0
135.19.12.8	0060.2F15.115E	FastEthernet0
135.19.12.9	0009.7C0E.788C	FastEthernet0
135.19.12.10	000A.F301.95D6	FastEthernet0



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC0	PC5	IC...	green	0.000	N	0	(e...)	(delete)
Successful		PC0	PC7	IC...	orange	0.000	N	1	(e...)	(delete)
Successful		PC12	PC0	IC...	red	0.000	N	2	(e...)	(delete)

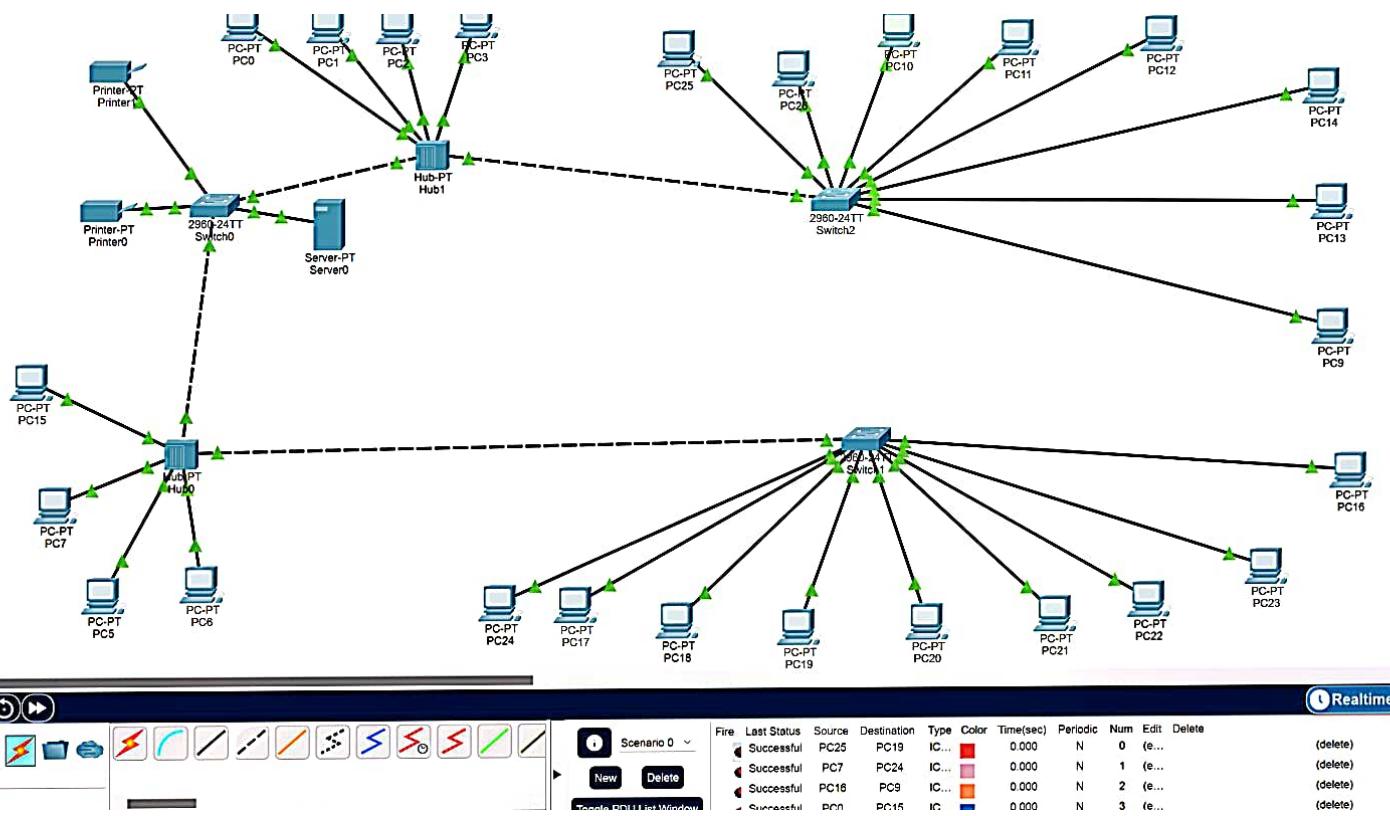
main.c

```
1 #include <stdio.h>
2 int main() {
3     char data[20], stuffedData[30];
4     int i, j, count;
5     printf("Enter the data: ");
6     scanf("%s", data);
7     // Initialize variables
8     i = 0;
9     j = 0;
10    count = 0;
11    // Perform bit stuffing
12    while (data[i] != '\0') {
13        stuffedData[j] = data[i];
14        if (data[i] == '1') {
15            count++;
16        } else {
17            count = 0;
18        }
19        if (count == 5) {
20            stuffedData[++j] = '0';
21            count = 0;
22        }
23        i++;
24        j++;
25    }
26    stuffedData[j] = '\0';
27    printf("Original Data: %s\n", data);
28    printf("After Bit stuffing: %s\n", stuffedData);
29    return 0;
30 }
```

Run

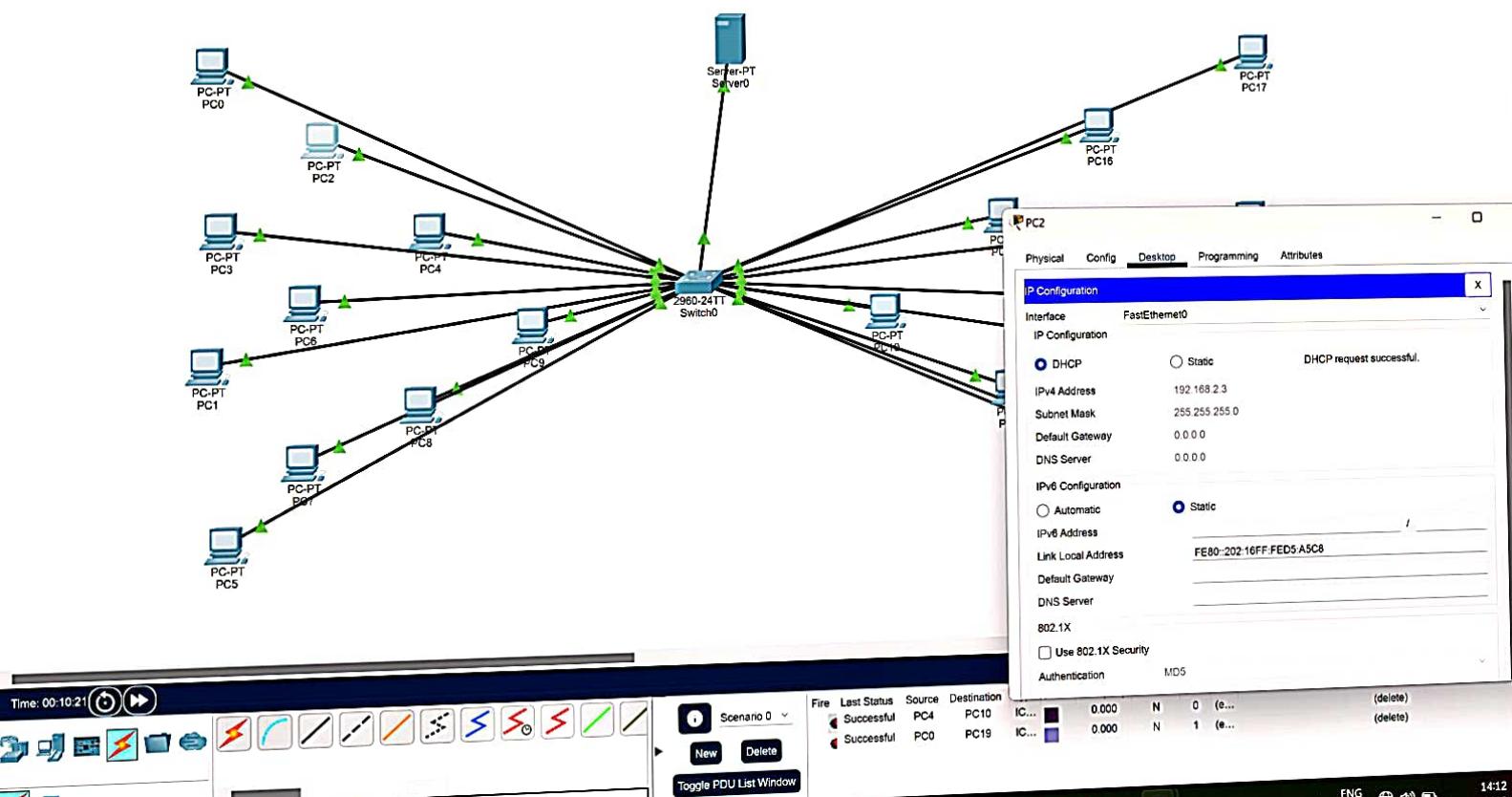
Output

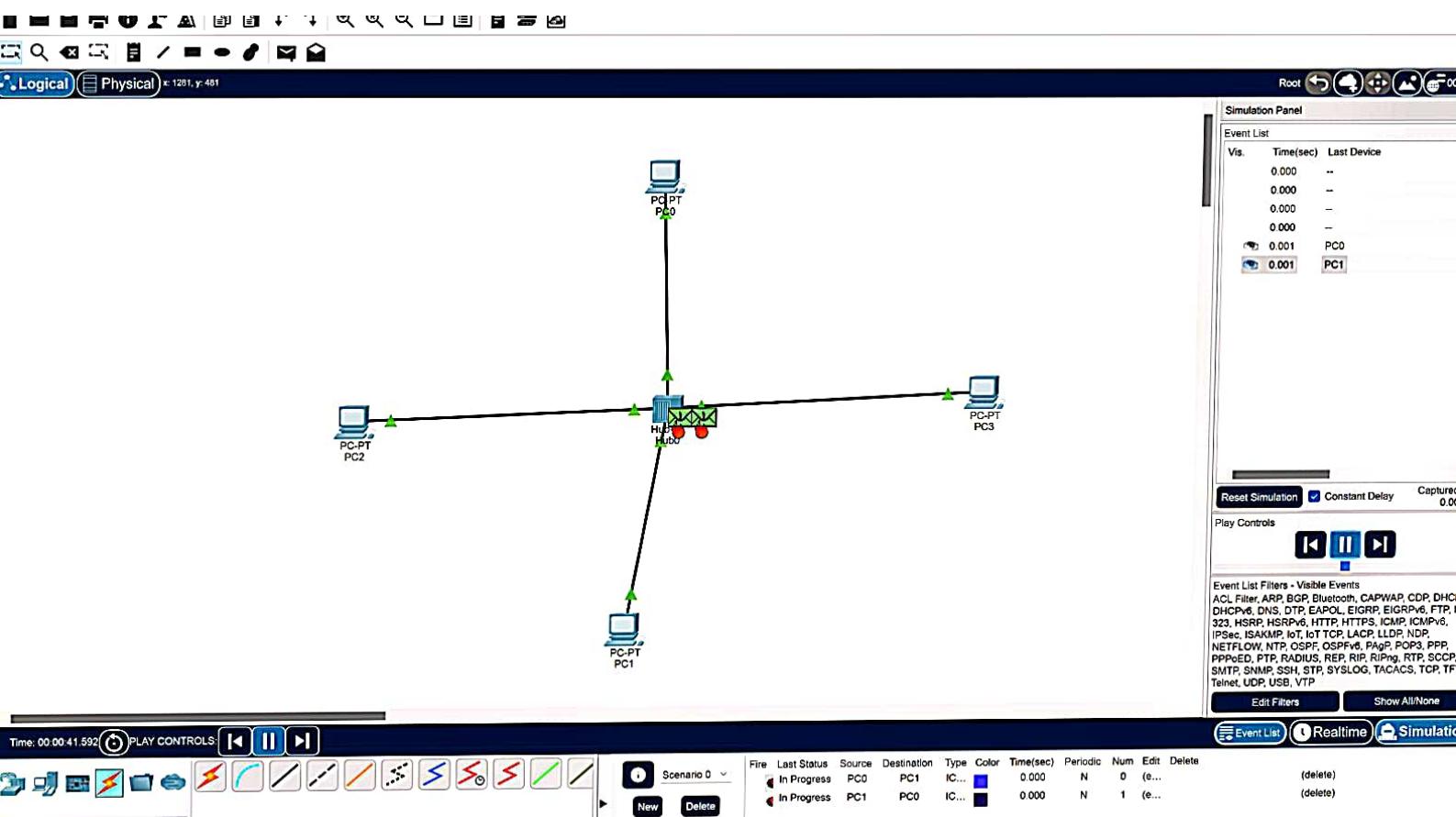
```
/tmp/zqlG91WOMn.o
Enter the data: 101111100110
Original Data: 101111100110
After Bit stuffing: 10111110100110
```

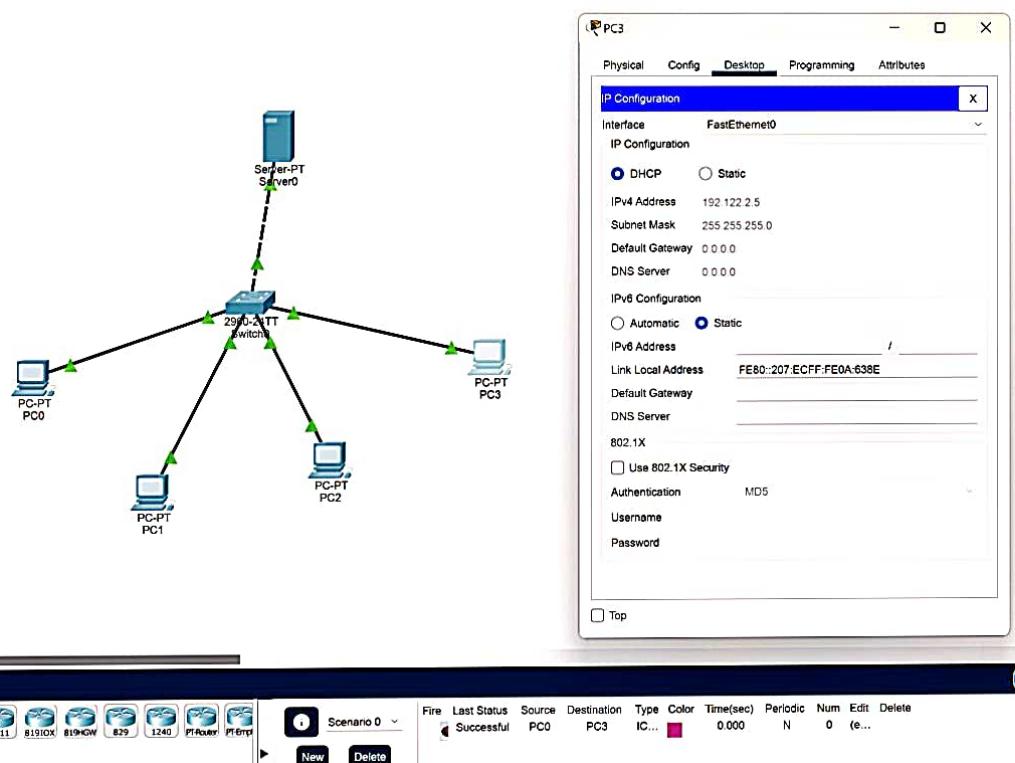


Time: 00:37:13	Realtime	Simulation

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC25	PC19	IC...	red	0.000	N	0	(e...)	(delete)
Successful		PC7	PC24	IC...	pink	0.000	N	1	(e...)	(delete)
Successful		PC16	PC9	IC...	orange	0.000	N	2	(e...)	(delete)
Successful		pcn	PC15	IC...	blue	0.000	N	3	(e...)	(delete)



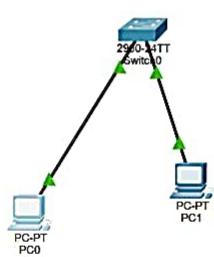






Logical Physical x: 569, y: 302

Root 01:07:00



PC0

Physical Config Desktop Programming Attributes

Firewall

Service On Off

Interface FastEthernet0

Inbound Rules

Action Protocol

Remote IP _____ Remote Wildcard Mask _____

Remote Port _____ Local Port _____

Save Remove Add

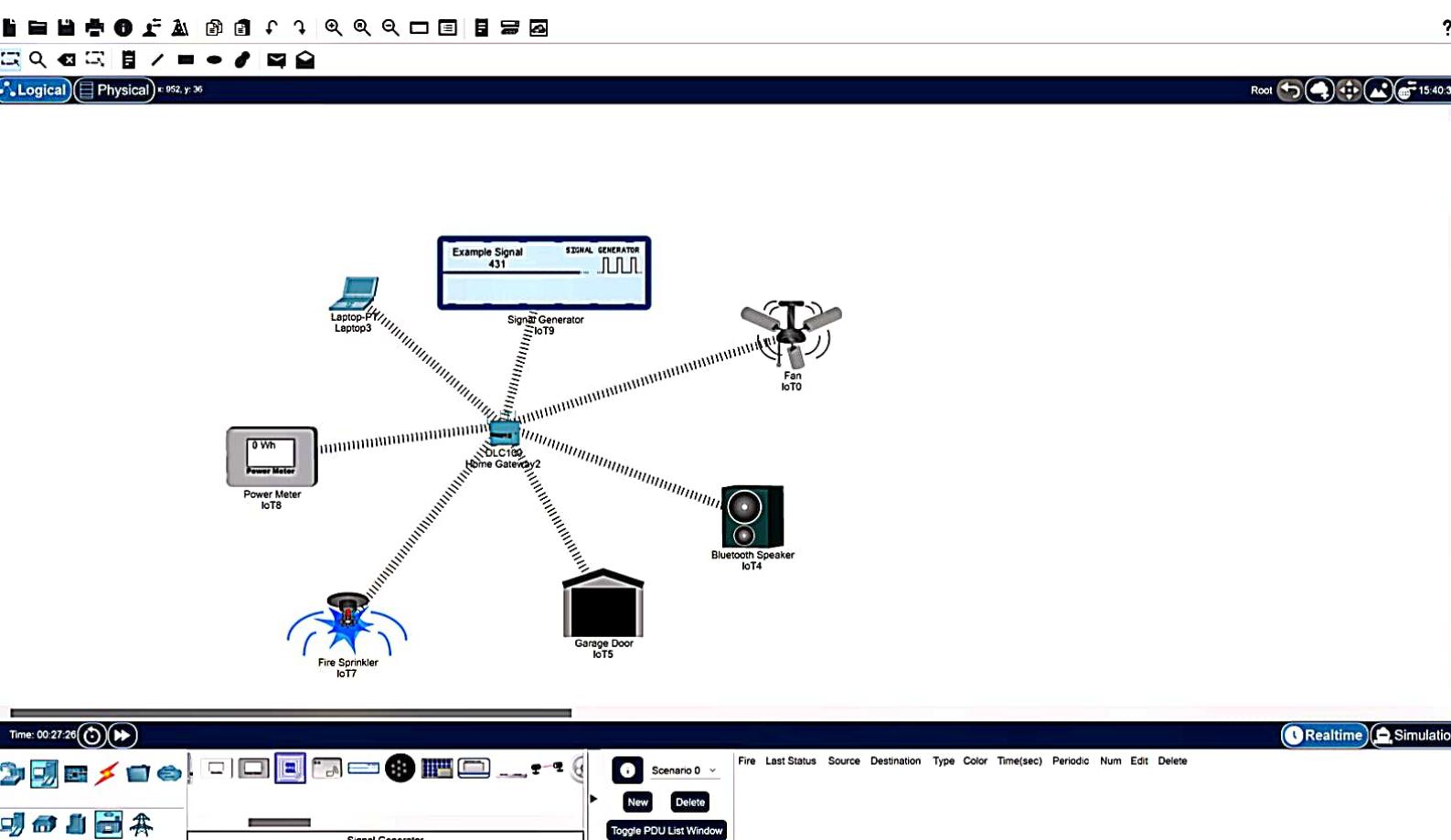
Action	Protocol	Remote IP	Remote Wild Card	Remote Port	Local Port
Deny	ICMP	0.0.0	255.255.25...	-	-

Time: 00:02:12



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Failed	PC0	PC1	IC...	IC...	Green	0.000	N	0	(e...)	(delete)
Successful	PC0	PC1	IC...	IC...	Blue	0.000	N	1	(e...)	(delete)
Failed	PC0	PC1	IC...	IC...	Red	0.000	N	2	(e...)	(delete)

Realtime Simulation



The screenshot shows a Java development environment with several windows open. At the top is a menu bar with File, Edit, Search, View, Encoding, Language, Settings, Tools, Macro, Run, Plugins, Window, and Help. Below the menu is a toolbar with various icons. The main workspace contains several tabs: tcpdateserver.java, tcpdateclient.java, udpdnsclient.java, chatServer.java, and chatClient.java. The code editor window displays the following Java code:

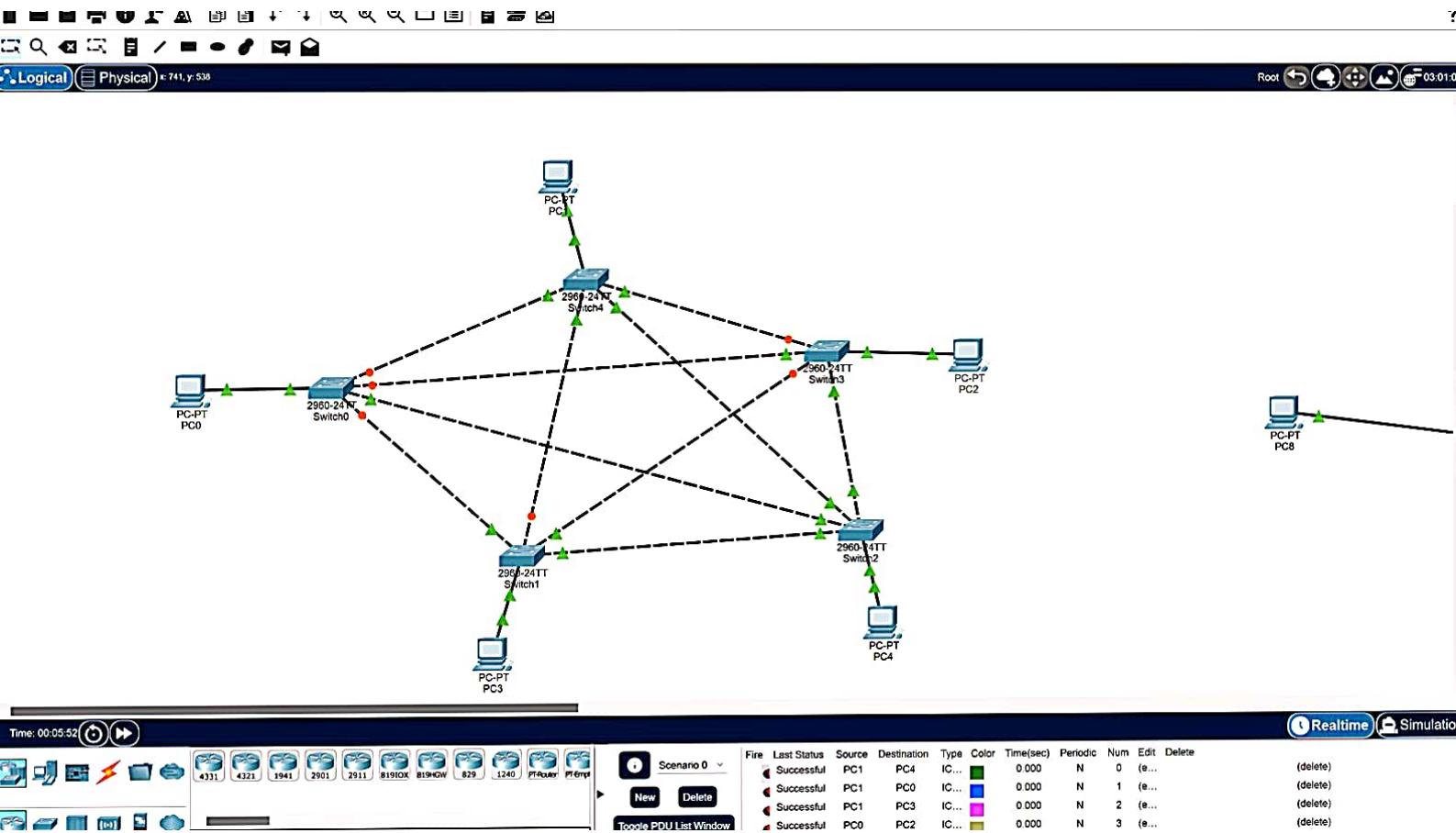
```
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?  
tcpdateserver.java tcpdateclient.java udpdnsclient.java chatServer.java chatClient.java  
1 import java.io.*; import java.net.*; class ChatClient {  
2     public static void main(String[] args) throws Exception {  
3         Socket sock=new Socket("127.0.0.1",1309);  
4         BufferedReader keyRead=new BufferedReader(new InputStreamReader(System.in)); OutputStream ostream=sock.getOutputStream();  
5         PrintWriter pwrite=new PrintWriter(ostream,true); InputStream istream=sock.getInputStream();  
6         BufferedReader receiveRead =new BufferedReader(new InputStreamReader(istream)); System.out.println("Start the chitchat,type and press Enter key");  
7         String receiveMessage,sendMessage; while(true){  
8             sendMessage=keyRead.readLine(); pwrite.println(sendMessage); pwrite.flush();  
9             if((receiveMessage=receiveRead.readLine())!=null){  
10                 System.out.println(receiveMessage);  
11             }  
12         }  
13     }  
14 }  
15  
16 }  
17 }
```

Below the code editor is a terminal window titled "cmd.e" showing the command prompt and output of the Java compiler and interpreter. The terminal output is as follows:

```
Java source file  
C:\Windows\System32\cmd.e + - X length: 771 lines: 19 L:1 Col:44 Sel:10|1 Windows (CR LF) UTF-8 IN  
Microsoft Windows [Version 10.0.22631.2506]  
(c) Microsoft Corporation. All rights reserved.  
D:\form>javac chatClient.java  
D:\form>java chatClient  
Start the chitchat,type and press Enter key  
hi bye  
hello
```

On the right side of the interface, there is another terminal window showing the server's response:

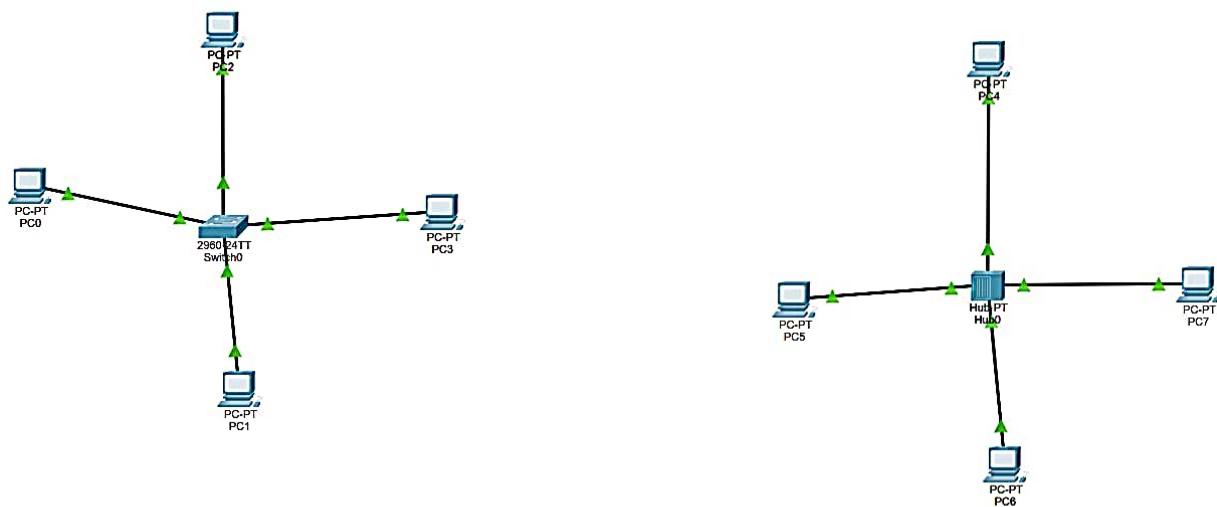
```
Java Source File  
CLASS File  
Java Source File  
C:\Windows\System32\ + - X length: 771 lines: 19 L:1 Col:44 Sel:10|1 Windows (CR LF) UTF-8 IN  
Microsoft Windows [Version 10.0.22631.2506]  
(c) Microsoft Corporation. All rights reserved.  
D:\form>javac chatServer.java  
D:\form>java chatServer  
server ready for chatting  
hi bye  
hello
```





Logical Physical

Root



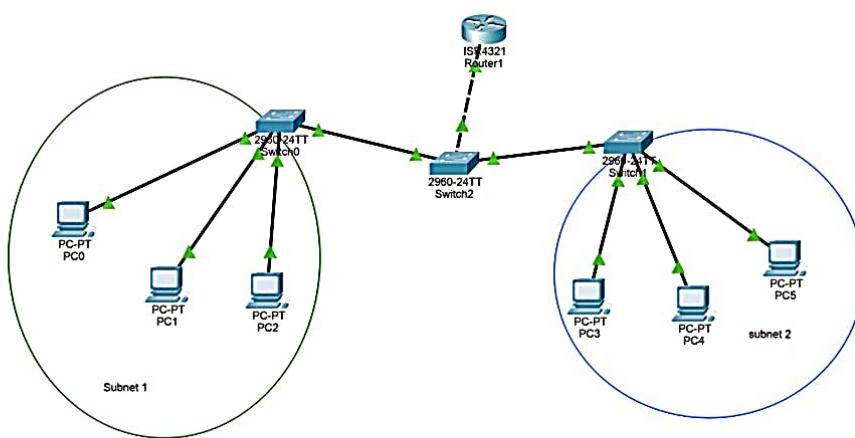
Time: 00:00:41

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC4	PC6	IC...	Blue	0.000	N	0	(e...)	(delete)
Successful		PC1	PC2	IC...	Green	0.000	N	1	(e...)	(delete)

Realtime Simulation

Toggle PDU List Window





Scenario 0											Realtime		Simulation	
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete				
Successful		PC1	PC4	IC...	■	0.000	N	0	(e...)	(delete)				
Successful		PC1	PC3	IC...	■	0.000	N	1	(e...)	(delete)				
Successful		PC5	PC5	IC...	■	0.000	N	2	(e...)	(delete)				

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

tcpdateclient.java

```

1 import java.net.*;
2 import java.io.*;
3 class tcpdateclient
4 {
5     public static void main (String args[])
6     {
7         Socket soc;
8         BufferedReader dis;
9         String sdate;
10        PrintStream ps;
11        try { InetAddress ia = InetAddress.getLocalHost();
12            if (args.length == 0)
13                soc = new Socket(InetAddress.getLocalHost(),4444);
14            else soc = new Socket(InetAddress.getByName(args[0]),4444);
15            dis = new BufferedReader(new InputStreamReader(soc.getInputStream()));
16            sdate=dis.readLine();
17            System.out.println("The date/time on server is : " +sdate);
18            ps = new PrintStream(soc.getOutputStream());
19            ps.println(ia); ps.close();
20        }
21        catch(IOException e)
22        {
23            System.out.println("THE EXCEPTION is :" + e);
24        }
25    }

```

C:\Windows\System32\cmd.e

```

Microsoft Windows [Version 10.0.22631.2506]
(c) Microsoft Corporation. All rights reserved.

D:\form>javac tcpdateclient.java
tcpdateclient.java:18: error: 'catch' without 'try'
    catch(IOException e)
    ^
tcpdateclient.java:9: error: 'try' without 'catch', 'finally' or resource declarations
    try { InetAddress ia = InetAddress.getLocalHost();
    ^
tcpdateclient.java:23: error: reached end of file while parsing
}
^
3 errors

D:\form>javac tcpdateclient.java

D:\form>java tcpdateclient
The date/time on server is : Tue Nov 14 10:39:08 IST 2023

D:\form>
```

Microsoft Windows [Version 10.0.22631.2506]
(c) Microsoft Corporation. All rights reserved.

D:\form>javac tcpdateserver.java

D:\form>java tcpdateserver
Press Ctrl+C to quit
Client System/IP address is :LAPTOP-JTTU7GNF/172.30.240.1

ava source file length : 697 lines : 25 Ln : 24 C

4 items | 42 items | 1 item selected 0 bytes |

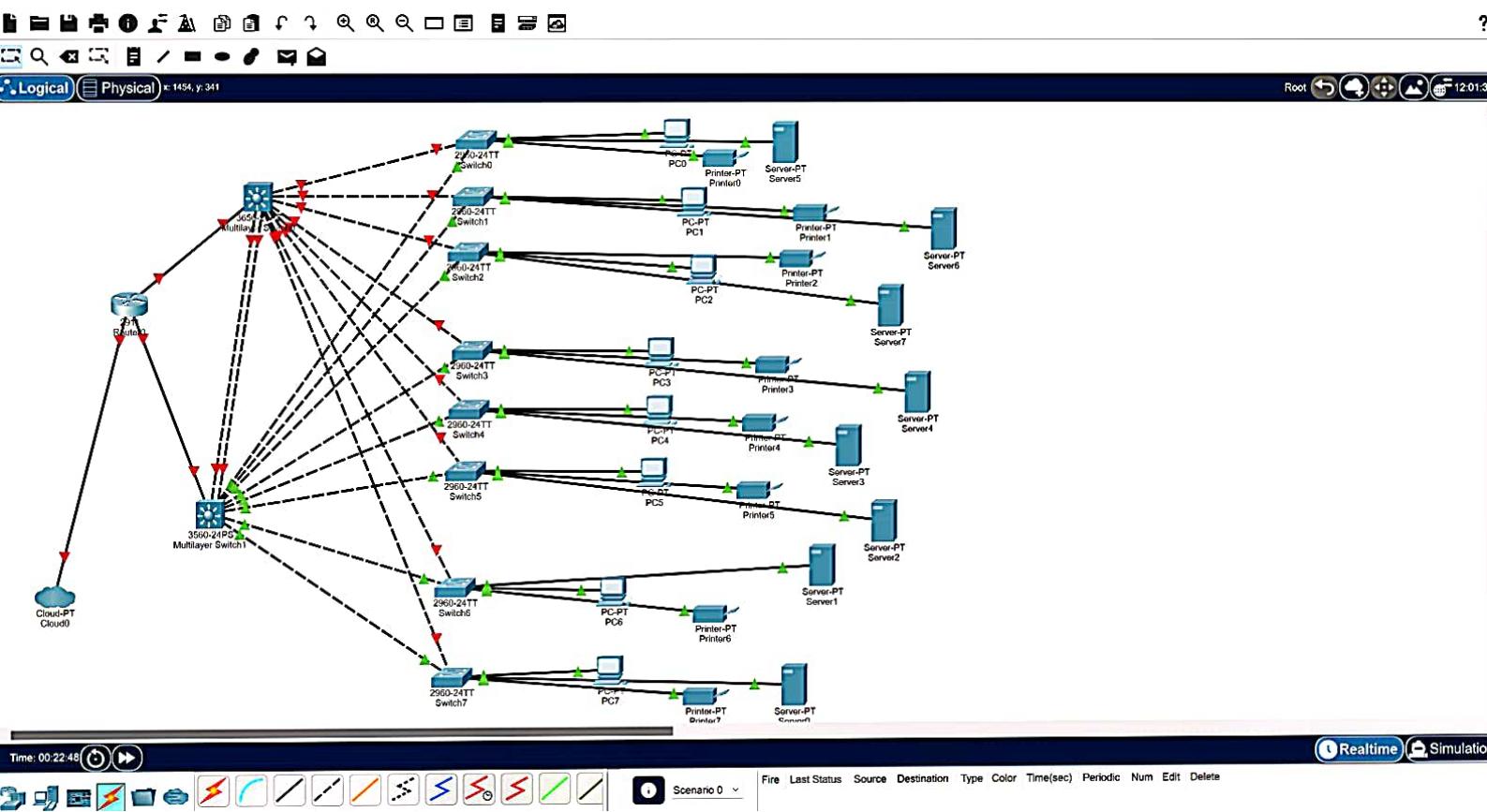
One Piece (Dub) - 509 1080p.mkv
One Piece (Dub) - 508 1080p.mkv

No.	Time	Source	Destination	Protocol	Length	Info
881	9.025414	92:37:6d:17:9b:18	IntelCor_18:d3:96	ARP	42	Who has 192.168.255.82? Tell 192.168.255.190
882	9.025532	IntelCor_18:d3:96	92:37:6d:17:9b:18	ARP	42	192.168.255.82 is at ac:74:b1:18:d3:96
1155	28.593709	92:37:6d:17:9b:18	IntelCor_18:d3:96	ARP	42	Who has 192.168.255.82? Tell 192.168.255.190
1156	28.593738	IntelCor_18:d3:96	92:37:6d:17:9b:18	ARP	42	192.168.255.82 is at ac:74:b1:18:d3:96


```

> Frame 882: 42 bytes on wire (336 bits), 42 bytes
> Ethernet II, Src: IntelCor_18:d3:96 (ac:74:b1:18:00:00)
> Address Resolution Protocol (reply)
Hardware type: Ethernet (1)
Protocol type: IPv4 (0x0800)
Hardware size: 6
Protocol size: 4
Opcode: reply (2)
Sender MAC address: IntelCor_18:d3:96 (ac:74:b1:18:00:00)
Sender IP address: 192.168.255.82
Target MAC address: 92:37:6d:17:9b:18 (92:37:6d:17:9b:18)
Target IP address: 192.168.255.190

```



Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

udp

No.	Time	Source	Destination	Protocol	Length	Info
5	0.136760	192.168.255.82	192.168.255.190	DNS	80	Standard query 0x7e25 A activity.windows.com
6	0.137126	192.168.255.82	192.168.255.190	DNS	80	Standard query 0xc8ef AAAA activity.windows.com
7	0.186781	192.168.255.190	192.168.255.82	DNS	141	Standard query response 0x7e25 A activity.windows.com CNAME activity-geo.trafficmanager.net A 20.44.229.112
8	0.189696	192.168.255.82	192.168.255.190	DNS	80	Standard query 0xc8ef AAAA activity.windows.com
15	0.231477	192.168.255.190	192.168.255.82	DNS	183	Standard query response 0xc8ef AAAA activity.windows.com CNAME activity-geo.trafficmanager.net SOA tm1.dns-tm.com
108	5.188568	192.168.255.82	192.168.255.190	DNS	89	Standard query 0x240d A v10.events.data.microsoft.com
109	5.188991	192.168.255.82	192.168.255.190	DNS	89	Standard query 0xd087 AAAA v10.events.data.microsoft.com
110	5.235238	192.168.255.190	192.168.255.82	DNS	230	Standard query response 0x240d A v10.events.data.microsoft.com CNAME win-global-asimov-leafs-events-data.trafficmanager.net CNAME onedsc...
111	5.239572	192.168.255.190	192.168.255.82	DNS	282	Standard query response 0xd087 AAAA v10.events.data.microsoft.com CNAME win-global-asimov-leafs-events-data.trafficmanager.net CNAME one...
149	6.590839	2401:4900:2306:1aed...	2600:1901:1:916::	UDP	252	57575 → 443 Len=190
152	6.644857	2600:1901:1:916::	2401:4900:2306:1aed...	UDP	89	443 → 57575 Len=27

```

> Frame 149: 252 bytes on wire (2016 bits), 252 bytes captured (190 bytes) on interface IntelCor_18:d3:96 (ac:74:b1:18:00:00)
> Ethernet II, Src: IntelCor_18:d3:96 (ac:74:b1:18:00:00), Dst: Microsoft DNS (00:0c:29:10:00:00)
> Internet Protocol Version 6, Src: 2401:4900:2306:1aed::, Dst: 2600:1901:1:916:: (2600:1901:1:916::)
> User Datagram Protocol, Src Port: 57575, Dst Port: 57575, Length: 198
  Source Port: 57575
  Destination Port: 443
  Length: 198
  Checksum: 0x4b34 [unverified]
  [Checksum Status: Unverified]
  [Stream index: 3]
  > [Timestamps]
  UDP payload (190 bytes)
  > Data (190 bytes)
  0000  92 37 6d 17 9b 18 ac 74 b1 18 d3 96 86 dd 60 05  ·7m...t .....
  0010  b6 33 00 c6 11 3f 24 81 49 00 23 05 1a ed f0 f0  ·3...$· I#.....
  0020  e9 df 82 21 f9 5d 26 00 19 01 00 01 09 16 00 00  ···!]& .....·
  0030  00 00 00 00 00 e0 e7 01 bb 00 c6 4b 34 42 f6  ······ ···K4B·
  0040  e8 c6 f1 fa d3 86 67 cc ba 42 a2 38 8a a8 08 47  ······ g -B-B-G
  0050  e1 4c 68 6a 09 71 a0 4b 6e ca 2b 8b aa b0 e4 ce  ·Lh1-q @ n+·
  0060  81 03 55 f7 31 b2 4f 01 ae 3f 19 5e 9e ad 2d bb  ··U-1-O ·?^···
  0070  03 48 43 b4 5e 3a e5 32 5f 87 fe 34 f6 e6 d7 8d  ·HC->-2 _-4··
  0080  90 d8 98 b0 52 61 3e 22 cd ea d4 e7 e2 e9 3f 41  ···Ra> ·····?A
  0090  2f 6a bb 2a 3b 37 17 c4 55 a1 73 5a b4 6a b1 f2  ·j-*?· - U-S^·n·
  00a0  1e 34 c7 5c b9 60 92 98 cc e5 8c 13 63 9c 22 d2  ·4-\`··· ···c-·
  00b0  f5 e3 47 a8 b1 42 a4 d1 da 39 b8 8e 10 3e 5d  ·G··B · ·9-··>
  00c0  f3 3f 28 ed ea ab 46 bf 98 48 34 71 a1 c1 c9 4b  ?(··F · H4q ·K··
  00d0  74 63 6c 45 92 34 d8 2b ac 55 0f 81 af 00 29 16  tclE-4+ ·U-···
  00e0  97 2d 06 58 8f 36 fa a7 6b c9 5c 79 4b ef f3 f4  ··X-6.. k·yK··
  00f0  11 fd 8b 30 6e 42 2b 49 25 a5 21 2e  ···0nB+1 % !·

```

Time	Source	Destination	Protocol	Length	Info
165 65.457945	2600:1901:1:c36::	2401:4900:2306:1aed..	TCP	74	443 -> 49740 [ACK] Seq=1 Ack=518 Win=66816 Len=0
166 65.460218	2600:1901:1:c36::	2401:4900:2306:1aed..	TLSv1.3	2514	Server Hello, Change Cipher Spec
167 65.460271	2401:4900:2306:1aed..	2600:1901:1:c36::	TCP	74	49740 -> 443 [ACK] Seq=518 Ack=2441 Win=66048 Len=0
168 65.461346	2600:1901:1:c36::	2401:4900:2306:1aed..	TLSv1.3	1953	Application Data
169 65.461724	2401:4900:2306:1aed..	2600:1901:1:c36::	TLSv1.3	138	Change Cipher Spec, Application Data
170 65.495537	2600:1901:1:c36::	2401:4900:2306:1aed..	TLSv1.3	668	Application Data, Application Data
171 65.547888	2401:4900:2306:1aed..	2600:1901:1:c36::	TCP	74	49740 -> 443 [ACK] Seq=582 Ack=4006 Win=66048 Len=0
172 65.607433	2600:1901:1:c36::	2401:4900:2306:1aed..	QUIC	232	Protected Payload (KPO)
173 65.607829	2401:4900:2306:1aed..	2600:1901:1:c36::	QUIC	97	Protected Payload (KPO), DCID=e6785cc05c5d8332
174 65.681198	2600:1901:1:c36::	2401:4900:2306:1aed..	QUIC	86	Protected Payload (KPO)
175 67.165740	192.168.255.82	192.168.255.255	UDP	86	57621 -> 57621 Len=44
me 1: 150 bytes on wire (1200 bits), 150 bytes captured (1200 bits) on interface Ethernet II, Src: IntelCor_18:d3:96 (ac:74:b1:18: ernet Protocol Version 6, Src: 2401:4900:2306: nsmission Control Protocol, Src Port: 49734, D Source Port: 49734 Destination Port: 443 [Stream index: 0] [Conversation completeness: Incomplete (8)] [TCP Segment Len: 76] Sequence Number: 1 (relative sequence number) Sequence Number (raw): 3370964896 Next Sequence Number: 77 (relative sequence number) Acknowledgment Number: 1 (relative ack number) Acknowledgment number (raw): 3721173777 181 ... = Header Length: 20 bytes (5) Flags: 0x018 (PSH, ACK) Window: 255 Calculated window size: 255 Window size scaling factor: -1 (unknown) Checksum: 0x0985 [unverified] Checksum Status: Unverified Urgent Pointer: 0 Timestamps] SEQ/ACK analysis] TCP payload (76 bytes) sport Layer Security					
0000 92 37 6d 17 9b 18 ac 74 b1 18 d3 96 86 dd 60 02 .7m....t- 0010 96 bc 00 60 06 3f 24 01 49 00 23 06 1a ed f0 f0 ..-.?\$. I-#.... 0020 e9 df 83 21 f9 5d 2a 01 01 11 f1 00 a0 04 00 00 *.- 0030 00 00 bf eb 8a d6 c2 46 01 bb c8 ec d4 88 dd ccF- 0040 9b 11 50 18 00 ff 09 85 00 00 17 03 03 00 47 00 ..P..... 0.....G- 0050 00 00 00 00 00 00 05 71 05 48 6b 01 0e a6 75 a5q ..@k...u- 0060 62 d4 8a 64 28 b9 f6 cd 9a d0 fb 87 ba bd 3c b7 b.-d(...<- 0070 9c 66 58 61 99 38 fe bb 02 f4 d1 5b d5 be 0f ba .fxa-8- ...[.... 0080 f0 7b 71 2b 0c 4e e4 11 81 0e 35 f9 0c 9c 05 85 .{q+N- ..S.... 0090 bc df 00 d8 a8 e6					

Hex View | ASCII View | Hex/ASCII View | Grep | Save

II Packets: 372 | Downloads: 372 | 100% 00:00:00:00

II Options: 0

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

tcpdataserver.java tcpdateclient.java udpdnsserver.java udpdnsclient.java

```

1 import java.io.*;
2 import java.net.*;
3
4 public class udpdnsclient { public static void main(String args[]) throws IOException
5 { BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
6   DatagramSocket clientsocket = new DatagramSocket(); InetAddress ipaddress;
7   if (args.length == 0)
8     ipaddress = InetAddress.getLocalHost();
9   else ipaddress = InetAddress.getByName(args[0]);
10  byte[] senddata = new byte[1024]; byte[] receivedata = new byte[1024];
11  int portaddr = 1362; System.out.print("Enter the hostname : ");
12  String sentence = br.readLine();
13  senddata = sentence.getBytes();
14  DatagramPacket pack = new DatagramPacket(senddata,senddata.length, ipaddress,portaddr);
15  clientsocket.send(pack);
16  DatagramPacket recvpack =new DatagramPacket(receivedata,receivedata.length); clientsocket.receive(recvpack); String modified = new String
17  System.out.println("IP Address: " + modified);
18  clientsocket.close(); }}
```

C:\Windows\System32\cmd.e Microsoft Windows [Version 10.0.22631.2506] (c) Microsoft Corporation. All rights reserved.

D:\form>javac udpdnsserver.java

D:\form>java udpdnsserver
Press Ctrl + C to Quit
Request for host yahoo.com

C:\Windows\System32\cmd.e Microsoft Windows [Version 10.0.22631.2506] (c) Microsoft Corporation. All rights reserved.

D:\form>javac udpdnsclient.java
error: file not found: udpdnsclient.java
Usage: javac <options> <source files>
use --help for a list of possible options

D:\form>javac udpdnsclient.java
udpdnsclient.java:12: error: cannot find symbol
 Senddata = sentence.getBytes();
 ^
 symbol: variable Senddata
 location: class udpdnsclient
1 error

D:\form>javac udpdnsclient.java

D:\form>java udpdnsclient
Enter the hostname : yahoo.com
IP Address: 68.180.206.184

D:\form>

