Department of Computer Engineering TE Computer-A (2020-21 Sem I) Computer Networks
Practical Assignment 4 [Max Marks: 10]

By : Himanshu Shekhar Padhi (3325)


```
himanshu@himanshu-nitro:~/College Documents/TE/CN$ g++ 3325_4_sender.cpp -o sender
himanshu@himanshu-nitro:~/College Documents/TE/CN$ ./sender
Connection Established..!
Enter the character : P
Message : 01010000

Sending codeword: 010100000010

Message Sent Successfully...!
himanshu@himanshu-nitro:~/College Documents/TE/CN$ ./sender
Connection Established..!
Enter the character : H
Message : 01001000

Sending codeword: 010011001000

Message Sent Successfully...!
himanshu@himanshu-nitro:~/College Documents/TE/CN$
```

```
himanshu@himanshu-nitro:~/College Documents/TE/CN$ g++ 3325_4_receiver.cpp -o receiver
himanshu@himanshu-nitro:~/College Documents/TE/CN$ ./receiver
...Waiting for connections

Server accepted the request.

Choose how you want to receive the message
1) Receive the orginal message.
2) Receive Message with defect.
1
Received Message : 010100000010

Syndrome : 0
Message : 01010000

Character : P
Message Received Successfully...!
himanshu@himanshu-nitro:~/College Documents/TE/CN$ ./receiver
...Waiting for connections

Server accepted the request.

Choose how you want to receive the message
1) Receive the orginal message.
2) Receive Message with defect.
2
Received Message : 010001001000

Syndrome : 8
Hence flip bit 8
Message : 01001000

Character : H
Message Received Successfully...!
himanshu@himanshu-nitro:~/College Documents/TE/CN$
```


Capturing from Loopback: lo

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	127.0.0.1	127.0.0.1	TCP	74	59730 → 5200 [SYN] Seq=0 Win=65495 Len=0 MSS=65495 SACK_PERM=1 TSval=2428751903 TSecr=0 WS=128
2	0.000010358	127.0.0.1	127.0.0.1	TCP	74	5200 → 59730 [SYN, ACK] Seq=0 Ack=1 Win=65483 Len=0 MSS=65495 SACK_PERM=1 TSval=2428751903 TSecr=2428751903 WS=128
3	0.000020257	127.0.0.1	127.0.0.1	TCP	66	59730 → 5200 [ACK] Seq=1 Ack=1 Win=65536 Len=0 TSval=2428751903 TSecr=2428751903
4	1.738674151	127.0.0.1	127.0.0.1	TCP	79	59730 → 5200 [PSH, ACK] Seq=1 Ack=1 Win=65536 Len=13 TSval=2428753642 TSecr=2428751903
5	1.738704038	127.0.0.1	127.0.0.1	TCP	66	5200 → 59730 [ACK] Seq=1 Ack=14 Win=65536 Len=0 TSval=2428753642 TSecr=2428753642
6	1.738739094	127.0.0.1	127.0.0.1	TCP	66	59730 → 5200 [FIN, ACK] Seq=14 Ack=1 Win=65536 Len=0 TSval=2428753642 TSecr=2428753642
7	1.782255219	127.0.0.1	127.0.0.1	TCP	66	5200 → 59730 [ACK] Seq=1 Ack=15 Win=65536 Len=0 TSval=2428753685 TSecr=2428753642
10	3.198356194	127.0.0.1	127.0.0.1	TCP	66	5200 → 59730 [FIN, ACK] Seq=1 Ack=15 Win=65536 Len=0 TSval=2428755101 TSecr=2428753642
11	3.198378633	127.0.0.1	127.0.0.1	TCP	66	59730 → 5200 [ACK] Seq=15 Ack=2 Win=65536 Len=0 TSval=2428755101 TSecr=2428755101
12	7.074180546	127.0.0.1	127.0.0.1	TCP	74	59732 → 5200 [SYN] Seq=0 Win=65495 Len=0 MSS=65495 SACK_PERM=1 TSval=2428758977 TSecr=0 WS=128
13	7.074200872	127.0.0.1	127.0.0.1	TCP	74	5200 → 59732 [SYN, ACK] Seq=0 Ack=1 Win=65483 Len=0 MSS=65495 SACK_PERM=1 TSval=2428758977 TSecr=2428758977 WS=128
14	7.074219825	127.0.0.1	127.0.0.1	TCP	66	59732 → 5200 [ACK] Seq=1 Ack=1 Win=65536 Len=0 TSval=2428758977 TSecr=2428758977
15	8.891689887	127.0.0.1	127.0.0.1	TCP	79	59732 → 5200 [PSH, ACK] Seq=1 Ack=1 Win=65536 Len=13 TSval=2428760795 TSecr=2428758977
16	8.891721463	127.0.0.1	127.0.0.1	TCP	66	5200 → 59732 [ACK] Seq=1 Ack=14 Win=65536 Len=0 TSval=2428760795 TSecr=2428760795
17	8.891757885	127.0.0.1	127.0.0.1	TCP	66	59732 → 5200 [FIN, ACK] Seq=14 Ack=1 Win=65536 Len=0 TSval=2428760795 TSecr=2428760795
18	8.938176732	127.0.0.1	127.0.0.1	TCP	66	5200 → 59732 [ACK] Seq=1 Ack=15 Win=65536 Len=0 TSval=2428760841 TSecr=2428760795
19	10.386141159	127.0.0.1	127.0.0.1	TCP	66	5200 → 59732 [FIN, ACK] Seq=1 Ack=15 Win=65536 Len=0 TSval=2428762289 TSecr=2428760795
20	10.386175685	127.0.0.1	127.0.0.1	TCP	66	59732 → 5200 [ACK] Seq=15 Ack=2 Win=65536 Len=0 TSval=2428762289 TSecr=2428762289

▸ Frame 1: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface lo, id 0
▸ Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)

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0000  00 00 00 00 00 00  00 00 00 00 00 00 08 00 45 00   ·············E·
0010  00 3c 0d 69 40 00 40 06  2f 51 7f 00 00 01 7f 00   ·<·i@·@· /Q······
0020  00 01 e9 52 14 50 ad 25  e0 4a 00 00 00 00 a0 02   ···R·P·% ·J······
0030  ff d7 fe 30 00 00 02 04  ff d7 04 02 08 0a 90 c3   ···0············
0040  d0 1f 00 00 00 00 01 03  03 07                      ··········
```

Loopback: lo: <live capture in progress>   Packets: 23 · Displayed: 18 (78.3%)   Profile: Default