



# COMPUTER NETWORK

**[Practical File]**

**3<sup>rd</sup> Semester**

**Bsc Computer Science (Hons)**

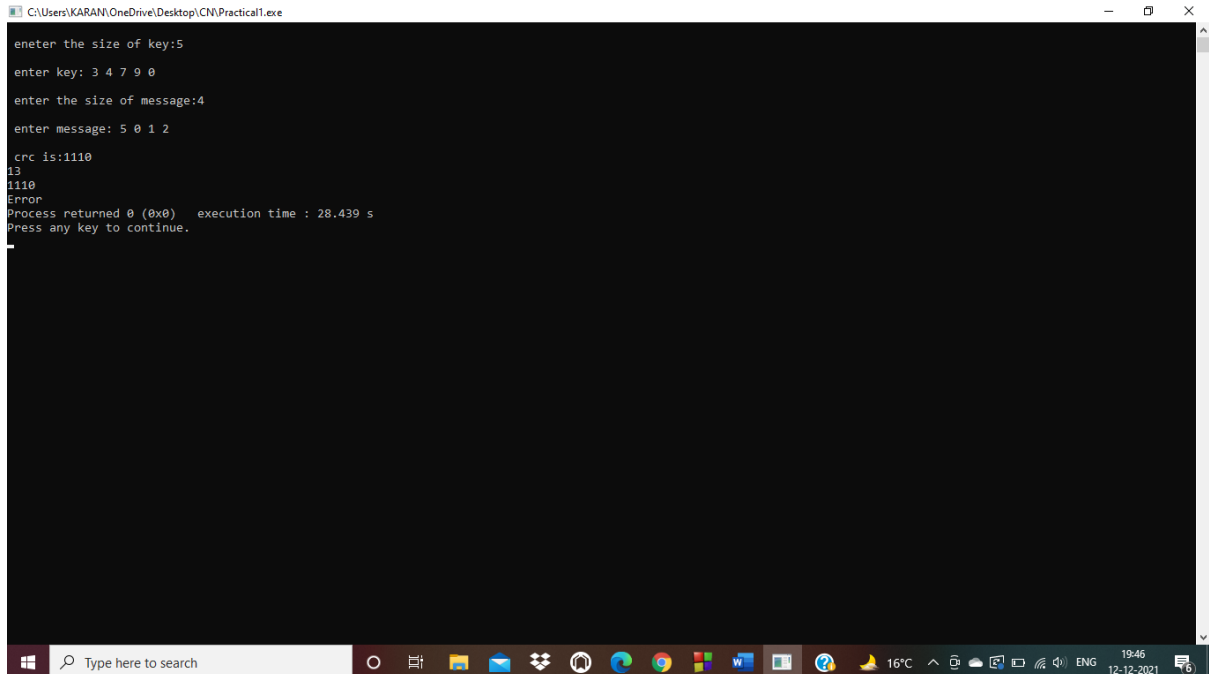
**By Karan Sharma**

**Roll No.: 20201456**

**Exam Roll No.: 20016570012**

**Question 1:** Simulate Cyclic Redundancy Check (CRC) error detection algorithm for noisy channel.

**Output:**



```
C:\Users\KARANI\OneDrive\Desktop\CN\Practical1.exe
enter the size of key:5
enter key: 3 4 7 9 0
enter the size of message:4
enter message: 5 0 1 2
crc is:1110
13
1110
Error
Process returned 0 (0x0)   execution time : 28.439 s
Press any key to continue.
```

**Question 2:** Simulate and implement stop and wait protocol for noisy channel.

**Output:**

```
C:\Users\KARAN\OneDrive\Desktop\CN\Practical2.exe

sender information    1
sequence no.        0
Receiver : packet received    1
Acknowledgement sent
sender information    2
sequence no.        1
Receiver : packet received    2
Acknowledgement sent
sender information    3
sequence no.        0
Receiver : packet received    3
Acknowledgement sent
sender information    4
sequence no.        1
Receiver : packet received    4
Acknowledgement sent
sender information    5
sequence no.        0
Receiver : packet received    5
Acknowledgement sent
discontinue

Process returned 0 (0x0)   execution time : 25.731 s
Press any key to continue.
```

**Question 3:** Simulate and implement go back n sliding window protocol.

**Output:**

```
C:\Users\KARAN\OneDrive\Desktop\CN\Practical3.exe

ENTER THE WINDOWS SIZE :
10
SENDER WINDOW IS EXPANDED TO STORE MESSAGE OR WINDOW

ENTER THE DATA TO BE SENT:
Hello Computer

MESSAGE SEND BY THE SENDER:
Hello Computer

WINDOW SIZE OF RECEIVER IS EXPANDED

ACKNOWLEDGEMENT FROM RECEIVER

ACK:10
MESSAGE RECEIVED BY RECEIVER IS :
Hello Comp

WINDOW SIZE OF RECEIVER IS SHRINKED

Process returned 0 (0x0)   execution time : 25.499 s
Press any key to continue.
```

**Question 4:** Simulate and implement selective repeat sliding window protocol.

**Output:**

```
C:\Users\KARANI\OneDrive\Desktop\CN\Practical4.exe
Enter the no. of bits for the sequence no. : 4
SENDER : Frame 0 is sent
SENDER : Frame 1 is sent
SENDER : Frame 2 is sent
SENDER : Frame 3 is sent
SENDER : Frame 4 is sent
SENDER : Frame 5 is sent
SENDER : Frame 6 is sent
SENDER : Frame 7 is sent
receiver:Frame0received correctly
(acknowledgement 0 recieved)
receiver:Frame1received correctly
(acknowledgement 1 recieved)
receiver:Frame2received correctly
(acknowledgement 2 recieved)
receiver:Frame3received correctly
(acknowledgement 3 recieved)
receiver:Frame4received correctly
(acknowledgement 4 recieved)
RECEIVER : Frame 5 is lost
(SENDER TIMEOUTS-->RESEND THE FRAME)
receiver:Frame6received correctly
(acknowledgement 6 recieved)
receiver:Frame7received correctly
(acknowledgement 7 recieved)
Want to continue_
```

**Question 5:** Simulate and implement distance vector routing algorithm

**Output:**

```
C:\Users\KARAN\OneDrive\Desktop\CN\Practical5.exe

PROGRAM TO IMPLEMENT DISTANCE VECTOR ROUTING ALGORITHM

Enter the number of nodes : 3

Enter the cost matrix :
4
5
6
7
8
3
4
0
2

For router: 1
node 1 via 1 Distance 0
node 2 via 2 Distance 5
node 3 via 3 Distance 6

For router: 2
node 1 via 1 Distance 7
node 2 via 2 Distance 0
node 3 via 3 Distance 3

For router: 3
node 1 via 1 Distance 4
node 2 via 2 Distance 0
node 3 via 3 Distance 0

Process returned 0 (0x0)   execution time : 12.649 s
Press any key to continue.
```

**Question 6:** Simulate and implement Dijkstra algorithm for shortest path routing.

**Output:**

```
C:\Users\KARAN\OneDrive\Desktop\CN\Practical6.exe

Vertex    Distance from Source
0          0
1          4
2         12
3         19
4         21
5         11
6          9
7          8
8         14

Process returned 0 (0x0)   execution time : 0.021 s
Press any key to continue.
```