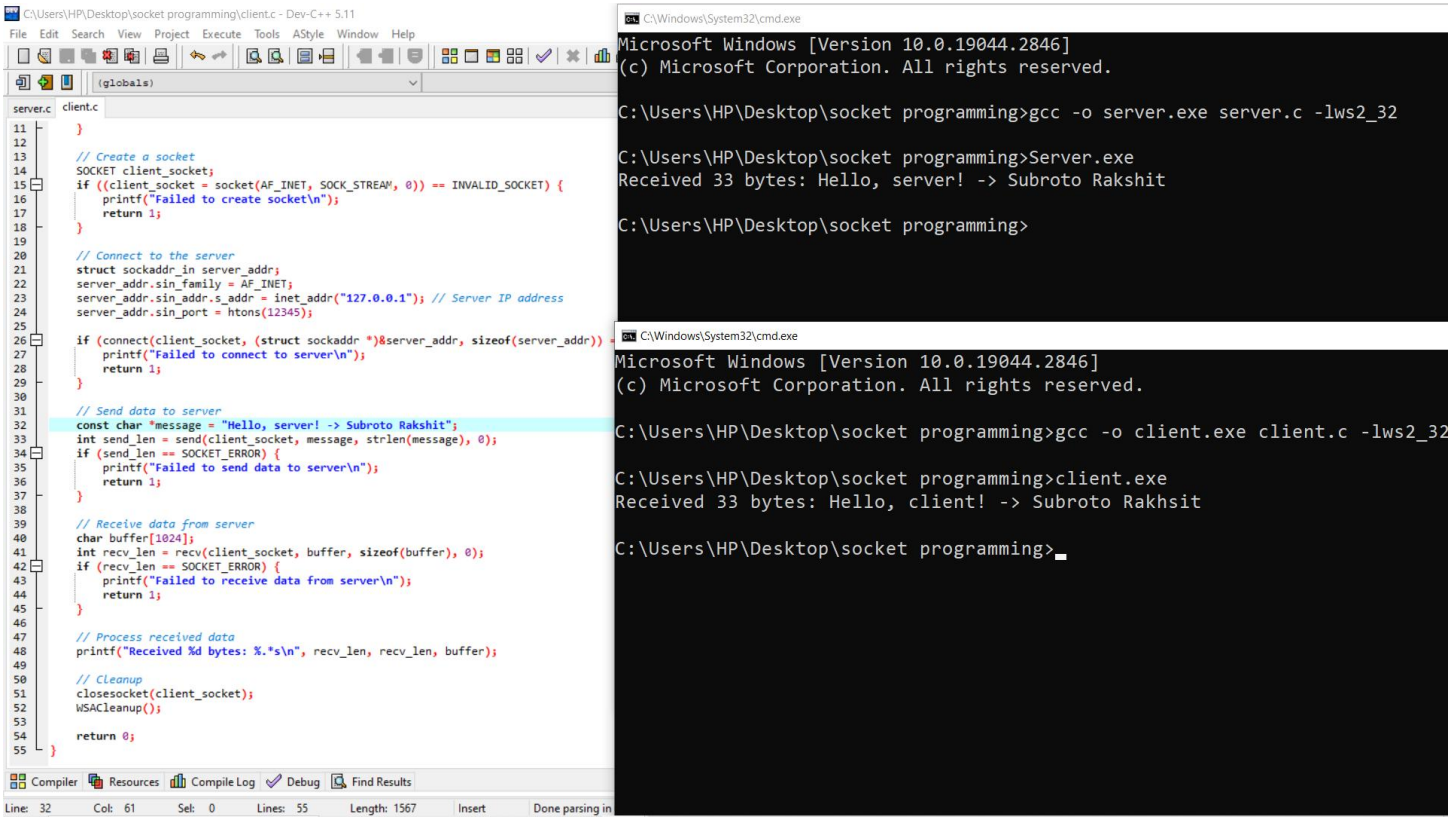
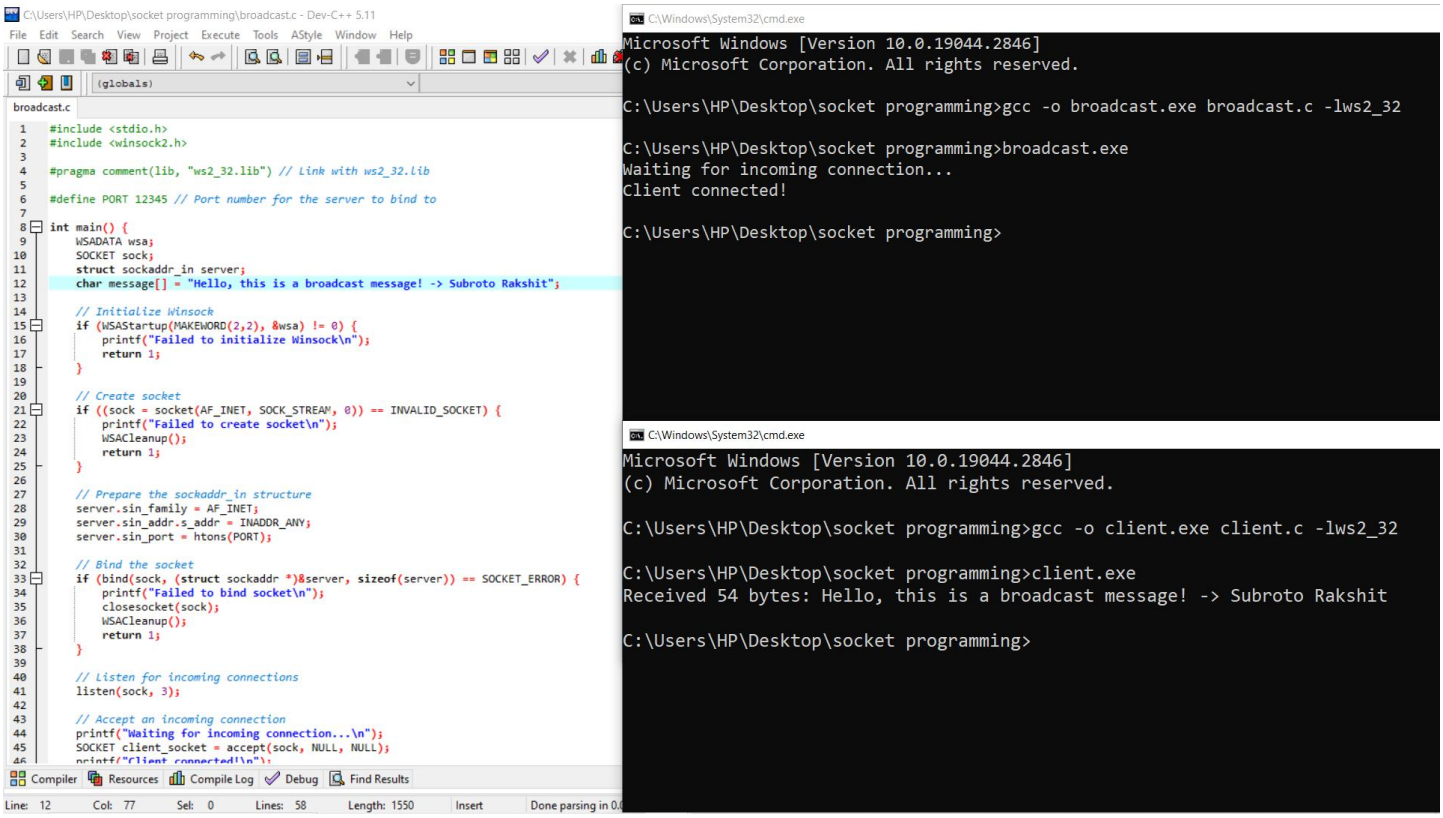
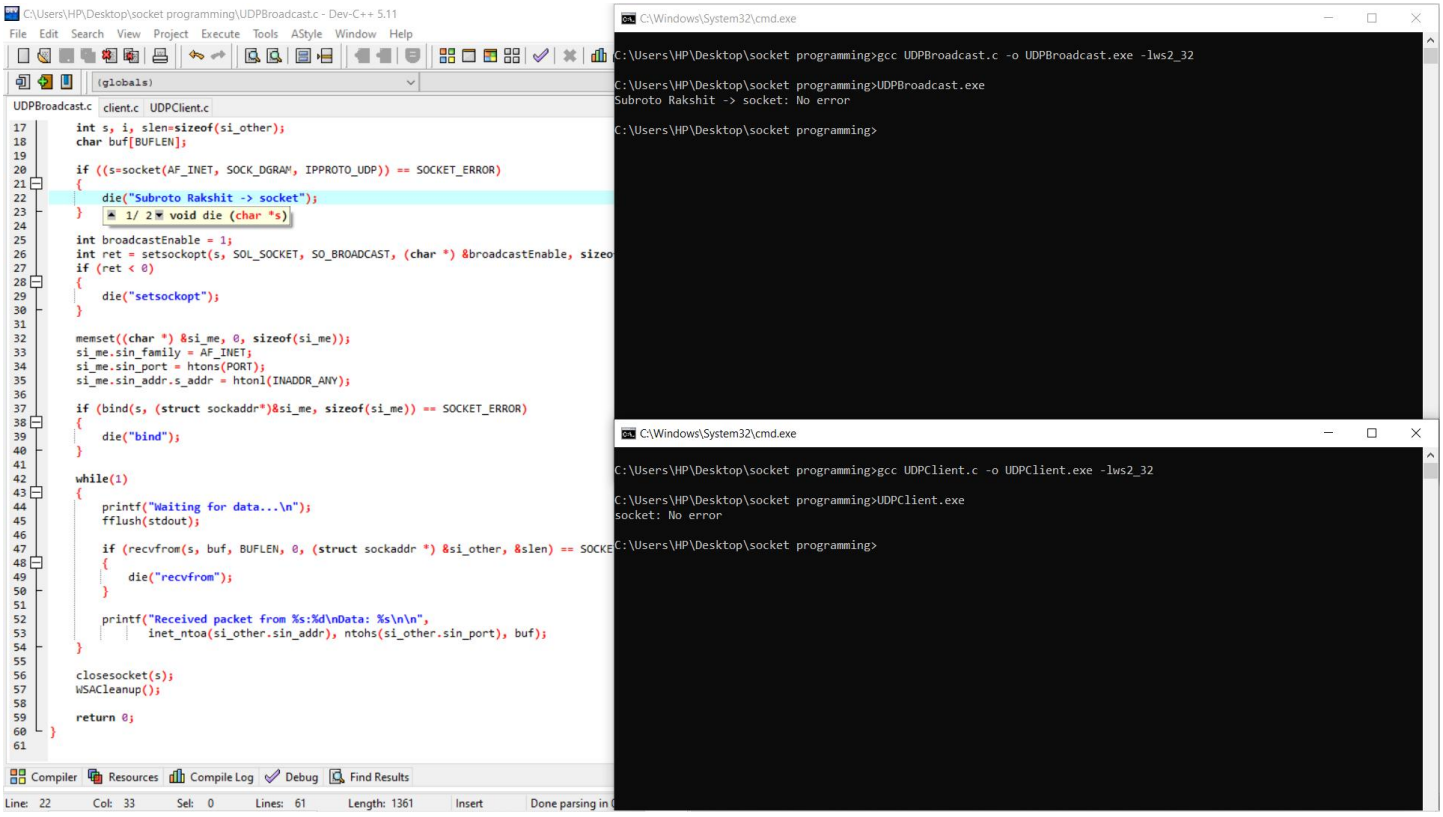
02


C:\Users\HP\Desktop\socket programming\client.c - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
server.c client.c
11 }
12
13 // Create a socket
14 SOCKET client_socket;
15 if ((client_socket = socket(AF_INET, SOCK_STREAM, 0)) == INVALID_SOCKET) {
16 printf("Failed to create socket\n");
17 return 1;
18 }
19
20 // Connect to the server
21 struct sockaddr_in server_addr;
22 server_addr.sin_family = AF_INET;
23 server_addr.sin_addr.s_addr = inet_addr("127.0.0.1"); // Server IP address
24 server_addr.sin_port = htons(12345);
25
26 if (connect(client_socket, (struct sockaddr *)&server_addr, sizeof(server_addr)) <
27 printf("Failed to connect to server\n");
28 return 1;
29 }
30
31 // Send data to server
32 const char *message = "Hello, server! -> Subroto Rakshit";
33 int send_len = send(client_socket, message, strlen(message), 0);
34 if (send_len == SOCKET_ERROR) {
35 printf("Failed to send data to server\n");
36 return 1;
37 }
38
39 // Receive data from server
40 char buffer[1024];
41 int recv_len = recv(client_socket, buffer, sizeof(buffer), 0);
42 if (recv_len == SOCKET_ERROR) {
43 printf("Failed to receive data from server\n");
44 return 1;
45 }
46
47 // Process received data
48 printf("Received %d bytes: %.*s\n", recv_len, recv_len, buffer);
49
50 // Cleanup
51 closesocket(client_socket);
52 WSACleanup();
53
54 return 0;
55 }
Compiler Resources Compile Log Debug Find Results
Line: 32 Col: 61 Sel: 0 Lines: 55 Length: 1567 Insert Done parsing in
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2846]
(c) Microsoft Corporation. All rights reserved.
C:\Users\HP\Desktop\socket programming>gcc -o server.exe server.c -lws2_32
C:\Users\HP\Desktop\socket programming>Server.exe
Received 33 bytes: Hello, server! -> Subroto Rakshit
C:\Users\HP\Desktop\socket programming>
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2846]
(c) Microsoft Corporation. All rights reserved.
C:\Users\HP\Desktop\socket programming>gcc -o client.exe client.c -lws2_32
C:\Users\HP\Desktop\socket programming>client.exe
Received 33 bytes: Hello, client! -> Subroto Rakhsit
C:\Users\HP\Desktop\socket programming>

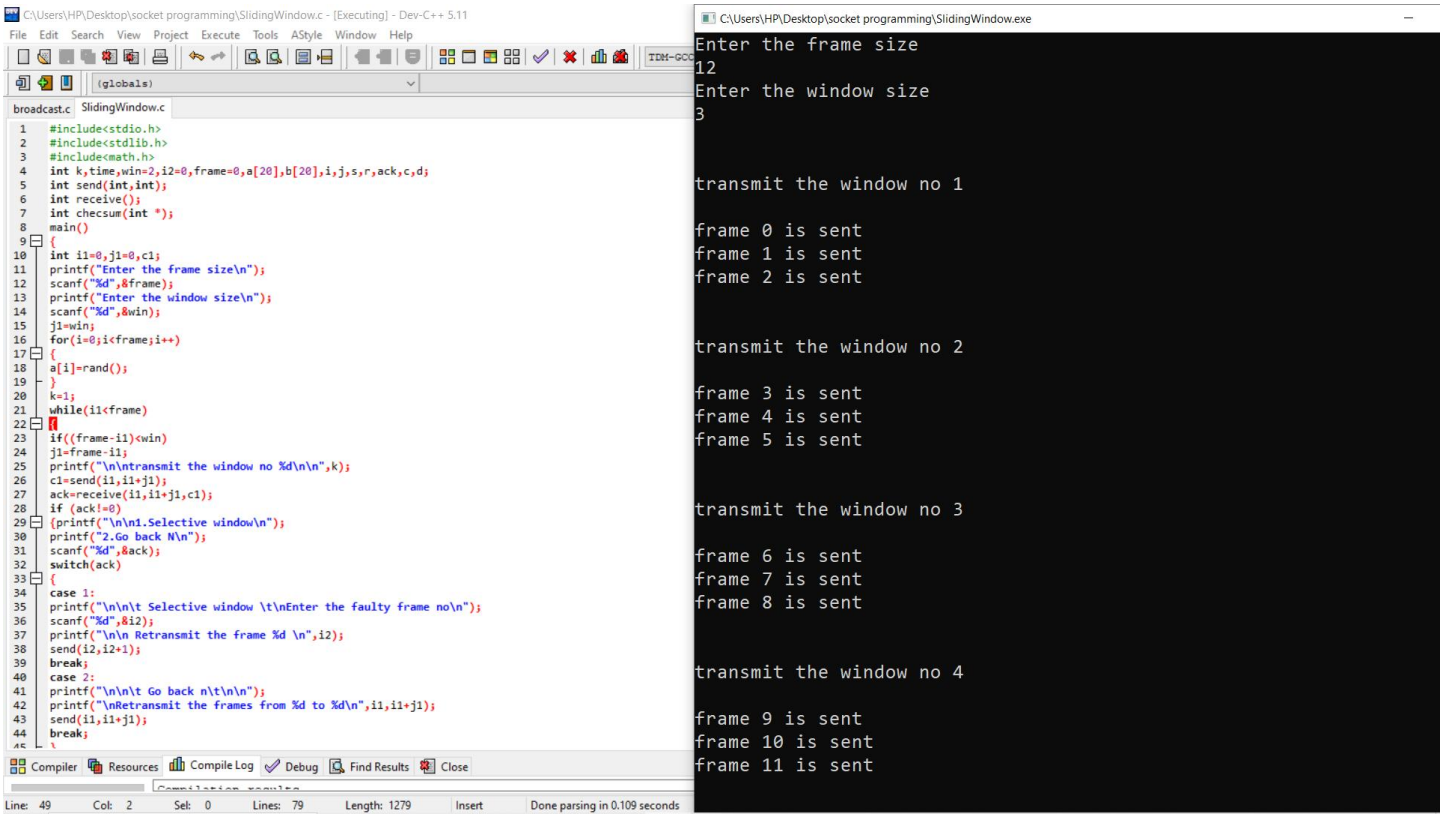
02


C:\Users\HP\Desktop\socket programming\broadcast.c - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
broadcast.c
#include <stdio.h>
#include <winsock2.h>
#pragma comment(lib, "ws2_32.lib") // Link with ws2_32.lib
#define PORT 12345 // Port number for the server to bind to
int main() {
WSADATA wsa;
SOCKET sock;
struct sockaddr_in server;
char message[] = "Hello, this is a broadcast message! -> Subroto Rakshit";
// Initialize Winsock
if (WSAStartup(MAKEWORD(2,2), &wsa) != 0) {
printf("Failed to initialize Winsock\n");
return 1;
}
// Create socket
if ((sock = socket(AF_INET, SOCK_STREAM, 0)) == INVALID_SOCKET) {
printf("Failed to create socket\n");
WSACleanup();
return 1;
}
// Prepare the sockaddr_in structure
server.sin_family = AF_INET;
server.sin_addr.s_addr = INADDR_ANY;
server.sin_port = htons(PORT);
// Bind the socket
if (bind(sock, (struct sockaddr *)&server, sizeof(server)) == SOCKET_ERROR) {
printf("Failed to bind socket\n");
closesocket(sock);
WSACleanup();
return 1;
}
// Listen for incoming connections
listen(sock, 3);
// Accept an incoming connection
printf("Waiting for incoming connection...\n");
SOCKET client_socket = accept(sock, NULL, NULL);
Compiler Resources Compile Log Debug Find Results
Line: 12 Col: 77 Sel: 0 Lines: 58 Length: 1550 Insert
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2846]
(c) Microsoft Corporation. All rights reserved.
C:\Users\HP\Desktop\socket programming>gcc -o broadcast.exe broadcast.c -lws2_32
C:\Users\HP\Desktop\socket programming>broadcast.exe
Waiting for incoming connection...
Client connected!
C:\Users\HP\Desktop\socket programming>
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2846]
(c) Microsoft Corporation. All rights reserved.
C:\Users\HP\Desktop\socket programming>gcc -o client.exe client.c -lws2_32
C:\Users\HP\Desktop\socket programming>client.exe
Received 54 bytes: Hello, this is a broadcast message! -> Subroto Rakshit
C:\Users\HP\Desktop\socket programming>

03


C:\Users\HP\Desktop\socket programming\UDPBroadcast.c - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
UDPBroadcast.c client.c UDPClient.c
int s, i, slen=sizeof(si_other);
char buf[BUFLEN];
if ((s=socket(AF_INET, SOCK_DGRAM, IPPROTO_UDP)) == SOCKET_ERROR)
{
die("Subroto Rakshit -> socket");
}
1/ 2 void die (char *s)
int broadcastEnable = 1;
int ret = setsockopt(s, SOL_SOCKET, SO_BROADCAST, (char *) &broadcastEnable, sizeo
if (ret < 0)
{
die("setsockopt");
}
memset((char *) &si_me, 0, sizeof(si_me));
si_me.sin_family = AF_INET;
si_me.sin_port = htons(PORT);
si_me.sin_addr.s_addr = htonl(INADDR_ANY);
if (bind(s, (struct sockaddr*)&si_me, sizeof(si_me)) == SOCKET_ERROR)
{
die("bind");
}
while(1)
{
printf("Waiting for data...\n");
fflush(stdout);
if (recvfrom(s, buf, BUFLEN, 0, (struct sockaddr *) &si_other, &slen) == SOCKE
{
die("recvfrom");
}
printf("Received packet from %s:%d\nData: %s\n\n",
inet_ntoa(si_other.sin_addr), ntohs(si_other.sin_port), buf);
}
closesocket(s);
WSACleanup();
return 0;
}
Compiler Resources Compile Log Debug Find Results
Line: 22 Col: 33 Sel: 0 Lines: 61 Length: 1361 Insert Done parsing in
C:\Windows\System32\cmd.exe
C:\Users\HP\Desktop\socket programming>gcc UDPBroadcast.c -o UDPBroadcast.exe -lws2_32
C:\Users\HP\Desktop\socket programming>UDPBroadcast.exe
Subroto Rakshit -> socket: No error
C:\Users\HP\Desktop\socket programming>
C:\Windows\System32\cmd.exe
C:\Users\HP\Desktop\socket programming>gcc UDPClient.c -o UDPClient.exe -lws2_32
C:\Users\HP\Desktop\socket programming>UDPClient.exe
socket: No error
C:\Users\HP\Desktop\socket programming>

05 b.



C:\Users\HP\Desktop\socket programming\SlidingWindow.c - [Executing] - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

broadcast.c SlidingWindow.c

```
#include<stdio.h>
#include<stdlib.h>
#include<math.h>
int k,time,win=2,i2=0,frame=0,a[20],b[20],i,j,s,r,ack,c,d;
int send(int,int);
int receive();
int checsum(int *);
main()
{
int i1=0,j1=0,c1;
printf("Enter the frame size\n");
scanf("%d",&frame);
printf("Enter the window size\n");
scanf("%d",&win);
j1=win;
for(i=0;i<frame;i++)
{
a[i]=rand();
}
k=1;
while(i1<frame)
{
if((frame-i1)<win)
j1=frame-i1;
printf("\n\ntransmit the window no %d\n\n",k);
c1=send(i1,i1+j1);
ack=receive(i1,i1+j1,c1);
if (ack!=0)
{printf("\n\n1.Selective window\n");
printf("2.Go back N\n");
scanf("%d",&ack);
switch(ack)
{
case 1:
printf("\n\n\t Selective window \t\nEnter the faulty frame no\n");
scanf("%d",&i2);
printf("\n\n Retransmit the frame %d \n",i2);
send(i2,i2+1);
break;
case 2:
printf("\n\n\t Go back n\t\n\n");
printf("\nRetransmit the frames from %d to %d\n",i1,i1+j1);
send(i1,i1+j1);
break;
```

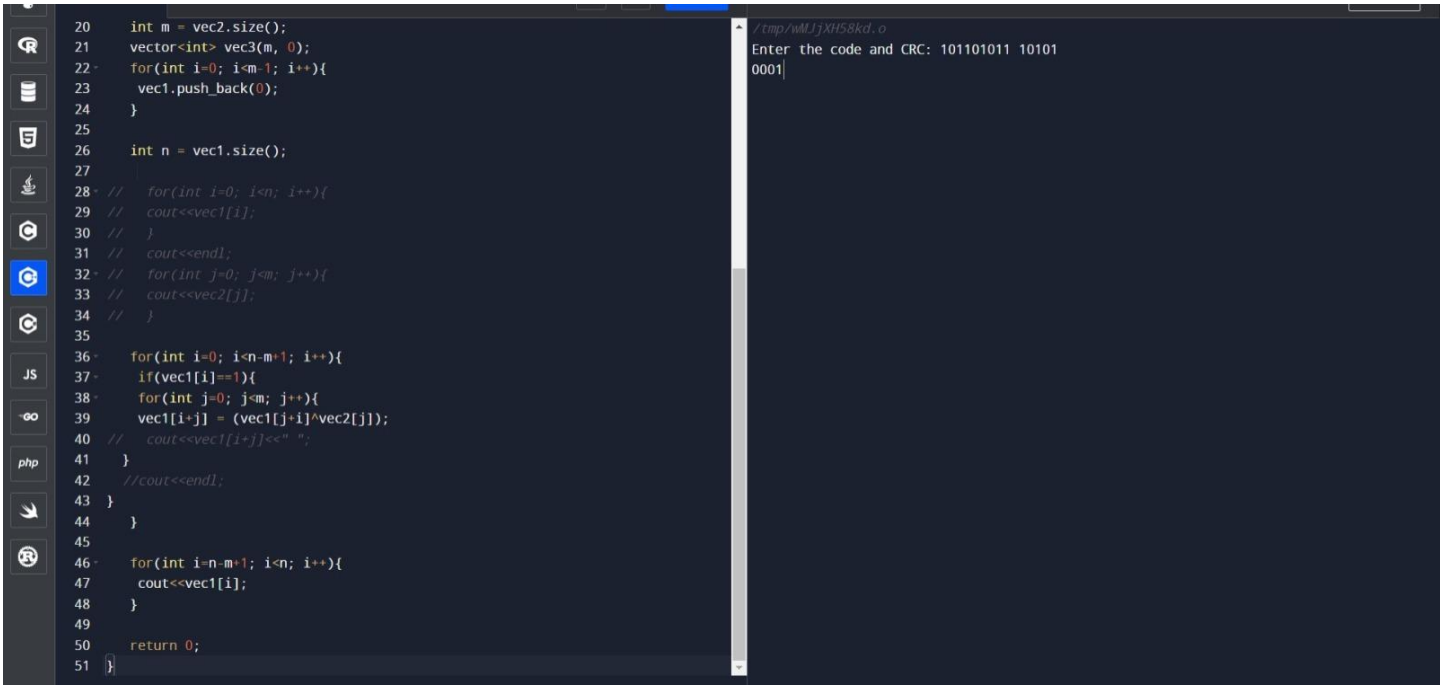
Compiler Resources Compile Log Debug Find Results Close

Line: 49 Col: 2 Sel: 0 Lines: 79 Length: 1279 Insert Done parsing in 0.109 seconds

C:\Users\HP\Desktop\socket programming\SlidingWindow.exe

```
Enter the frame size
12
Enter the window size
3


transmit the window no 1

frame 0 is sent
frame 1 is sent
frame 2 is sent


transmit the window no 2

frame 3 is sent
frame 4 is sent
frame 5 is sent


transmit the window no 3

frame 6 is sent
frame 7 is sent
frame 8 is sent


transmit the window no 4

frame 9 is sent
frame 10 is sent
frame 11 is sent
```

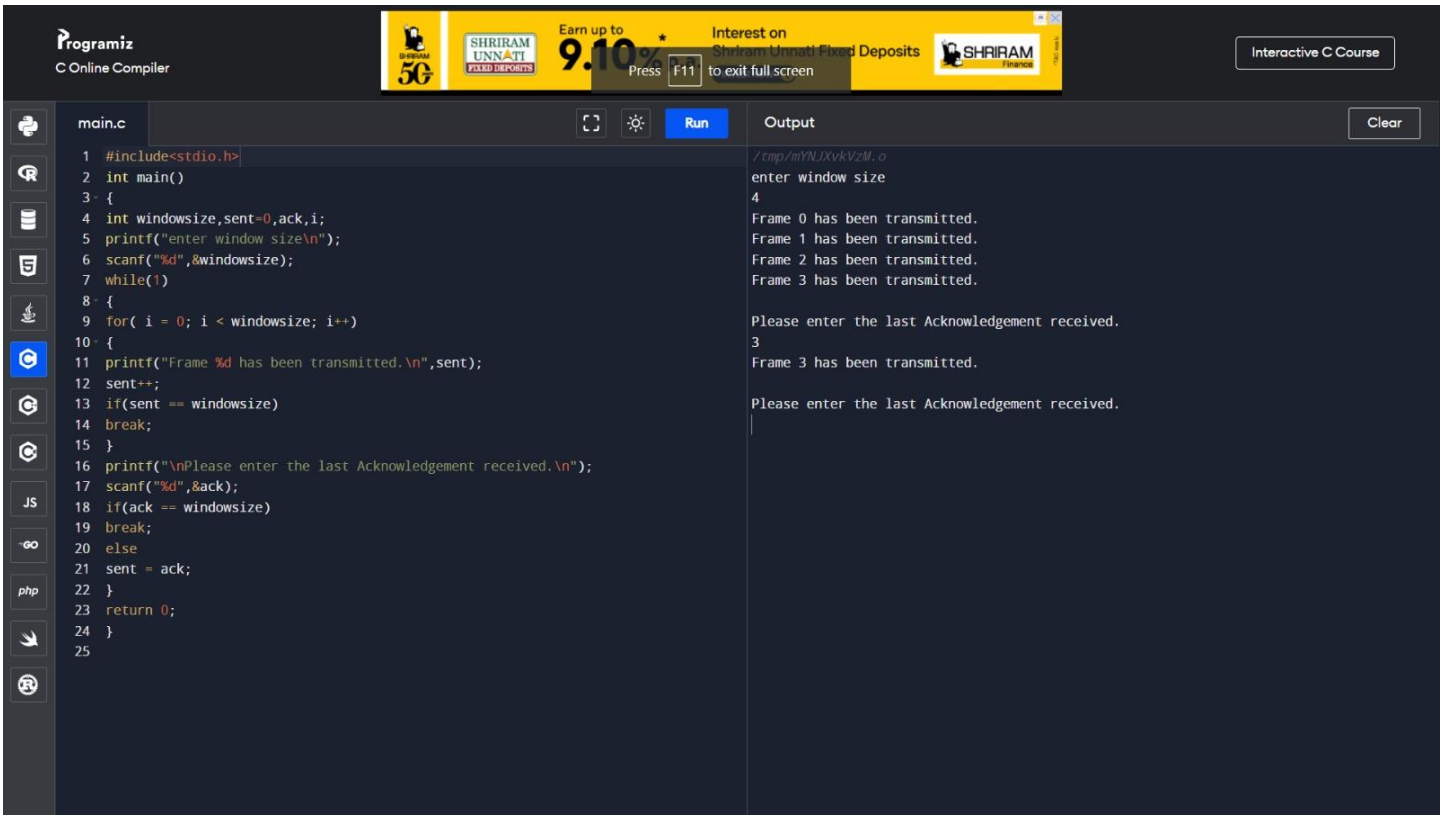
06



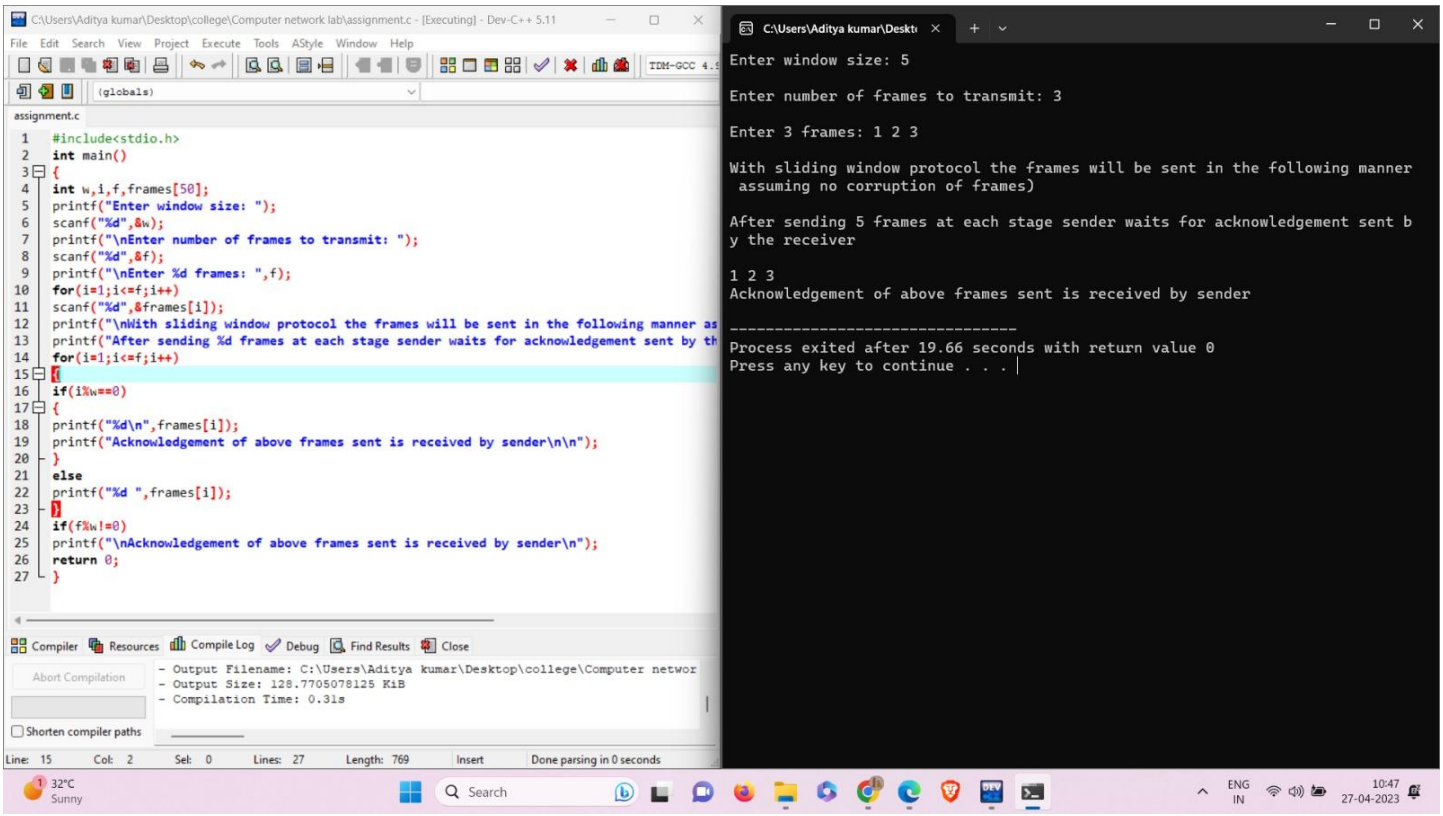
```
    int m = vec2.size();
    vector<int> vec3(m, 0);
    for(int i=0; i<m-1; i++){
     vec1.push_back(0);
    }

    int n = vec1.size();

//    for(int i=0; i<n; i++){
//    cout<<vec1[i];
//    }
//    cout<<endl;
//    for(int j=0; j<m; j++){
//    cout<<vec2[j];
//    }

    for(int i=0; i<n-m+1; i++){
     if(vec1[i]==1){
     for(int j=0; j<m; j++){
     vec1[i+j] = (vec1[j+i]^vec2[j]);
//    cout<<vec1[i+j]<<" ";
   }
   //cout<<endl;
}
    }

    for(int i=n-m+1; i<n; i++){
     cout<<vec1[i];
    }

    return 0;
}
```

```
/tmp/wMJjXH58kd.o
Enter the code and CRC: 101101011 10101
0001
```

05 a.


Programiz
C Online Compiler
Earn up to
9.10%
Interest on
Shriram Unnati Fixed Deposits
SHRIRAM
Press F11 to exit full screen
Interactive C Course
main.c
Run
Output
Clear
#include<stdio.h>
int main()
{
int windowsize,sent=0,ack,i;
printf("enter window size\n");
scanf("%d",&windowsize);
while(1)
{
for(i = 0; i < windowsize; i++)
{
printf("Frame %d has been transmitted.\n",sent);
sent++;
if(sent == windowsize)
break;
}
printf("\nPlease enter the last Acknowledgement received.\n");
scanf("%d",&ack);
if(ack == windowsize)
break;
else
sent = ack;
}
return 0;
}
/tmp/mYNJXvkVzM.o
enter window size
4
Frame 0 has been transmitted.
Frame 1 has been transmitted.
Frame 2 has been transmitted.
Frame 3 has been transmitted.
Please enter the last Acknowledgement received.
3
Frame 3 has been transmitted.
Please enter the last Acknowledgement received.

04 b.


C:\Users\Aditya kumar\Desktop\college\Computer network lab\assignment.c - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
assignment.c
#include<stdio.h>
int main()
{
int w,i,f,frames[50];
printf("Enter window size: ");
scanf("%d",&w);
printf("\nEnter number of frames to transmit: ");
scanf("%d",&f);
printf("\nEnter %d frames: ",f);
for(i=1;i<=f;i++)
scanf("%d",&frames[i]);
printf("\nWith sliding window protocol the frames will be sent in the following manner as
printf("After sending %d frames at each stage sender waits for acknowledgement sent by th
for(i=1;i<=f;i++)
{
if(i%w==0)
{
printf("%d\n",frames[i]);
printf("Acknowledgement of above frames sent is received by sender\n\n");
}
else
printf("%d ",frames[i]);
}
if(f%w!=0)
printf("\nAcknowledgement of above frames sent is received by sender\n");
return 0;
}
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
- Output Filename: C:\Users\Aditya kumar\Desktop\college\Computer networ
- Output Size: 128.7705078125 KiB
- Compilation Time: 0.31s
Shorten compiler paths
Line: 15 Col: 2 Sel: 0 Lines: 27 Length: 769 Insert Done parsing in 0 seconds
C:\Users\Aditya kumar\Deskt
Enter window size: 5
Enter number of frames to transmit: 3
Enter 3 frames: 1 2 3
With sliding window protocol the frames will be sent in the following manner
assuming no corruption of frames)
After sending 5 frames at each stage sender waits for acknowledgement sent b
y the receiver
1 2 3
Acknowledgement of above frames sent is received by sender
Process exited after 19.66 seconds with return value 0
Press any key to continue . . .
32°C
Sunny
Search
ENG
IN
10:47
27-04-2023