

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #define MAX 5
4 int main() {
5     int windowSize, totalFrames, sent = 0, ack, i;
6     printf("Enter total number of frames: ");
7     scanf("%d", &totalFrames);
8     printf("Enter window size: ");
9     scanf("%d", &windowSize);
10    printf("\n--- SLIDING WINDOW PROTOCOL (Go-Back-N) ---\n");
11    while (sent < totalFrames) {
12        printf("\nSender: Sending frames %d to %d\n",
13               sent + 1,
14               (sent + windowSize <= totalFrames) ? sent + windowSize : totalFrames);
15        for (i = 0; i < windowSize && sent + i < totalFrames; i++) {
16            printf("  Frame %d sent.\n", sent + i + 1);
17        }
18        printf("\nEnter the last ACK received (0 if no ACK): ");
19        scanf("%d", &ack);
20        if (ack == 0) {
21            printf("Receiver: ACK lost! Sender retransmits the window.\n");
22        }
23        else if (ack > sent && ack <= sent + windowSize) {
24            printf("Receiver: ACK %d received successfully.\n", ack);
25            sent = ack;
26        }
27        else {
28            printf("Invalid ACK. No progress.\n");
29        }
30    }
31    printf("\nAll frames transmitted successfully!\n");
32    return 0;
33 }
```

Output

Enter total number of frames: 7

Enter window size: 3

--- SLIDING WINDOW PROTOCOL (Go-Back-N) ---

Sender: Sending frames 1 to 3

Frame 1 sent.

Frame 2 sent.

Frame 3 sent.

Enter the last ACK received (0 if no ACK): 3

Receiver: ACK 3 received successfully.

Sender: Sending frames 4 to 6

Frame 4 sent.

Frame 5 sent.

Frame 6 sent.

Enter the last ACK received (0 if no ACK): 6

Receiver: ACK 6 received successfully.

Sender: Sending frames 7 to 7

Frame 7 sent.

Enter the last ACK received (0 if no ACK):