**Experiment 6.**

**AIM:** Write a C Program to implement Sliding window protocol for Goback N.

**PROGRAM:**

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>

#define WINDOW_SIZE 4 // Example window size

void sender(int total_frames) {
    int frames_sent = 0;
    int next_frame_to_send = 0;
    int ack_expected = 0;

    printf("Sender: Starting transmission...\n");

    while (ack_expected < total_frames) {
        // Send frames within the window
        for (int i = 0; i < WINDOW_SIZE && (next_frame_to_send < total_frames); i++) {
            printf("Sender: Sending Frame %d\n", next_frame_to_send);
            frames_sent++;
            next_frame_to_send++;
        }

        // Simulate acknowledgment or timeout
        // For simplicity, we'll assume a random success/failure for the first frame in the window
        // In a real scenario, this involves timers and actual network communication
        if (rand() % 5 != 0) { // Simulate successful ACK for the first frame in the window
            printf("Receiver: Acknowledgment received for Frame %d\n", ack_expected);
```

```
            ack_expected++;
        } else { // Simulate timeout or lost ACK
            printf("Sender: Timeout! Retransmitting from Frame %d\n", ack_expected);
            next_frame_to_send = ack_expected; // Go back N
        }
        printf("\n");
    }
    printf("Sender: All frames transmitted successfully.\n");
}

int main() {
    srand(time(NULL)); // Seed for random number generation
    int total_frames;

    printf("Enter the total number of frames to send: ");
    scanf("%d", &total_frames);

    sender(total_frames);

    return 0;
}
```

**OUTPUT**