EXPERIMENT-8

Write a Program to implement Stop and Wait Protocol.

Program

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
void main()
{
   int frame_count,simulate_loss, i, ack, send_seq = 0;
   char frames[10][100];
   clrscr();
   printf("Enter number of frames to send: ");
   scanf("%d", &frame_count);
   for (i = 0; i < frame_count; i++)
   {
        printf("Enter data for frame %d: ", i);
        scanf("%s", frames[i]);
   }
   i = 0;
   while (i < frame_count)
   {
        printf("\n[Sender] Sending Frame %d: \"%s\" with Seq #%d\n", i, frames[i], send_seq);
        sleep(1);  // simulate delay
        // Simulate receiver behavior
        simulate_loss = rand() % 5; // 0 to 4 chance of ACK loss
        if (simulate_loss == 0)
        {
           printf("[Sender] ACK lost or corrupted! Resending Frame %d...\n", i);
           continue;
        }
        // Receiver receives and sends correct ACK
        ack = send_seq;
        printf("[Receiver] Received Frame %d. Sending ACK #%d\n", i, ack);
        sleep(1);
        // Sender receives correct ACK
```

```
        if (ack == send_seq)
        {
            printf("[Sender] Received ACK #%d. Proceeding to next frame...\n", ack);
            send_seq = 1 - send_seq; // toggle between 0 and 1
            i++;  // move to next frame
        }
        else
        {
            printf("[Sender] Wrong ACK! Resending Frame %d...\n", i);
        }
    }
    printf("\nAll frames sent successfully.\n");
    getch();
}
```

Output