EXPERIMENT: 35

IMPLEMENTION OF SLIDING WINDOW PROTOCOL IN JAVA/C

Aim: To implement sliding window protocol in java.

Steps:

1. Set up the client-server connection:

- Create a server socket using the `socket()` function.

- Bind the server socket to a specific IP address and port using the `bind()` function.

- Listen for incoming client connections using the `listen()` function.

- Create a client socket using the `socket()` function.

- Connect the client socket to the server using the `connect()` function.

2. Implement the sliding window protocol:

- Define the window size (number of packets) and other necessary parameters.

- Split the data to be sent into packets, and assign a sequence number to each packet.

- Implement a sender and receiver window to keep track of sent and acknowledged packets.

- Send packets from the sender window and maintain a timer for each packet.

- Receive packets at the receiver, send acknowledgments (ACK) for correctly received packets, and

discard duplicates.

- Update the sender and receiver window based on acknowledgments.

- Repeat the process until all packets have been sent and acknowledged.

Example Inputs:

```
Enter number of frames: 5
Enter window size: 3
```

Example Output:

```
Sender : Frames to be sent -> [1 2 3 4 5]

Sending Frame 1
Acknowledgement received for Frame 1

Sending Frame 2
Acknowledgement received for Frame 2

Sending Frame 3
Acknowledgement received for Frame 3

[Window slides]

Sending Frame 4
Acknowledgement received for Frame 4

Sending Frame 5
Acknowledgement received for Frame 5

All frames transmitted successfully!
```

Result: Hence implementation of sliding window protocol was done successfully in C.