

Generated by: Java Viewer

```
import java.util.Random;
import java.util.Scanner;

class Sender {
    int windowSize;
    int totalFrames;
    int nextFrameToSend = 0;
    int ackReceived = -1;

    public Sender(int windowSize, int totalFrames) {
        this.windowSize = windowSize;
        this.totalFrames = totalFrames;
    }

    public void sendFrames(Receiver receiver) {
        Random random = new Random();

        while (ackReceived < totalFrames - 1) {
            // Sending frames within the window size
            for (int i = nextFrameToSend; i < nextFrameToSend + windowSize && i < totalFrames; i++) {
                System.out.println("Sender: Sending frame " + i);
                receiver.receiveFrame(i);
            }

            // Simulate acknowledgment reception at sender
            int ackChance = random.nextInt(10); // Randomly deciding if the ack is successful or not

            if (ackChance < 8) {
                // Assuming acknowledgment is received successfully
                ackReceived = receiver.getAck(); // Receive acknowledgment from the receiver
                System.out.println("Sender: Acknowledgment received for frame: " + ackReceived);
                nextFrameToSend = ackReceived + 1; // Move the window forward
            }
        }
    }
}
```

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    } else {
        // Simulate loss or corruption of a frame
        System.out.println("Sender: Error detected, retransmitting from frame: " + nextFrameToSend);
    }
}
System.out.println("Sender: All frames sent and acknowledged successfully!");
}
}

```

```

class Receiver {
    int expectedFrame = 0;
    int ack = -1;

```

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    public void receiveFrame(int frame) {
        if (frame == expectedFrame) {
            System.out.println("Receiver: Frame " + frame + " received correctly");
            ack = expectedFrame;
            expectedFrame++;
        } else {
            System.out.println("Receiver: Frame " + frame + " received out of order, expecting frame " +
                expectedFrame);
        }
    }
}

```

```

    public int getAck() {
        return ack;
    }
}

```

```

public class GoBackNARQ {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

```

```

        // Taking input for window size and number of frames
        System.out.print("Enter the window size: ");
        int windowSize = scanner.nextInt();

```

```
System.out.print("Enter the number of frames to be sent: ");  
int totalFrames = scanner.nextInt();
```

```
// Create Sender and Receiver objects  
Sender sender = new Sender(windowSize, totalFrames);  
Receiver receiver = new Receiver();
```

```
// Start sending frames  
sender.sendFrames(receiver);  
scanner.close();  
}  
}
```