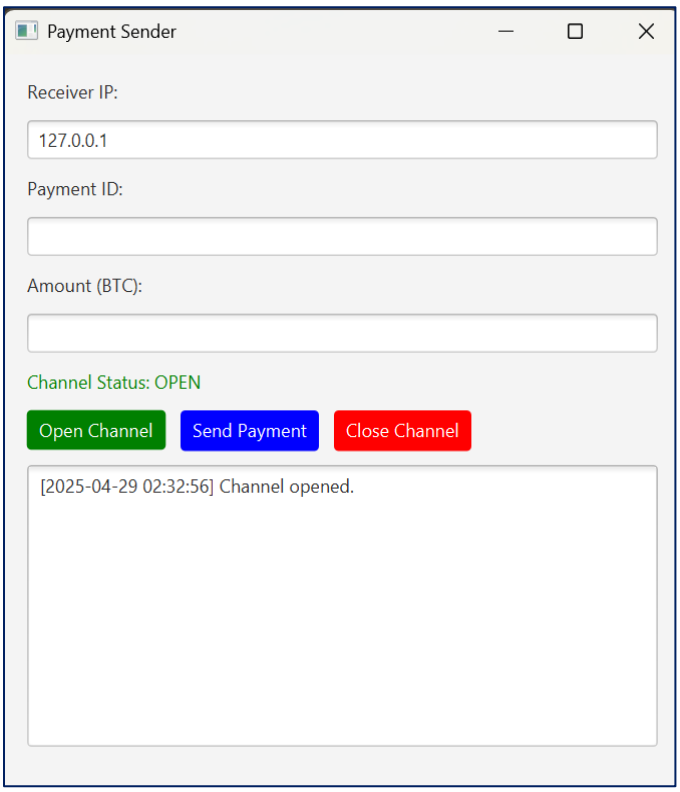
FINAL PROJECT SUBMISSION (GROUP -05)

DONE BY :- NEHA SAHA (2251181) PRIYANSHU MONDAL (2251222)
ANKIT OJHA(2251220) ARKASNATO BHATTACHARYYA(2251064)

8. Outputs and Their Real-World Meanings

A. Channel Opened:

Simulates: Opening a payment channel (similar to Lightning Network channel creation).



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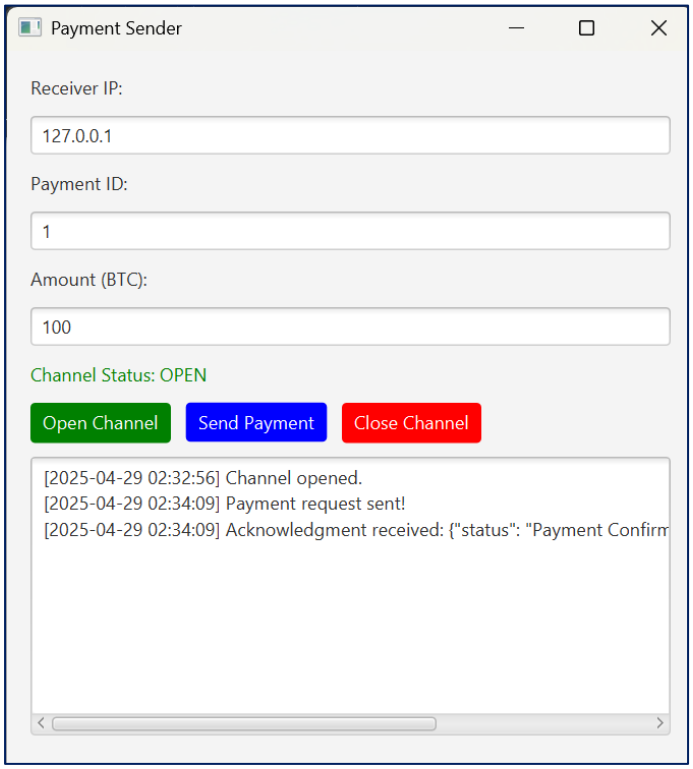
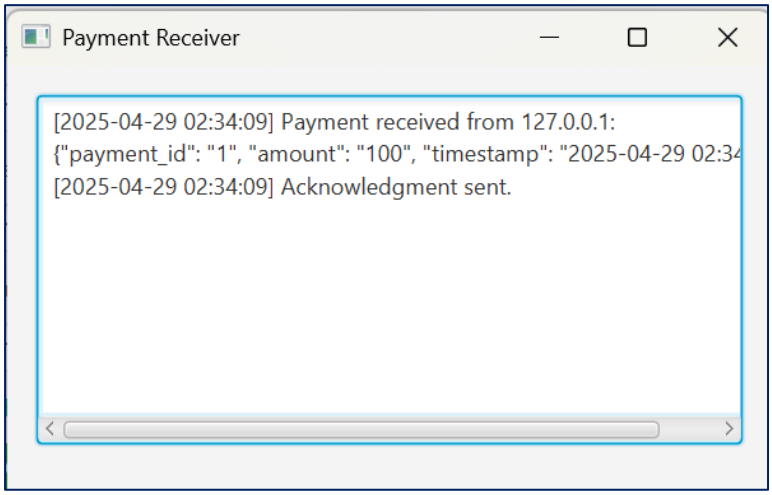
B. Payment Request Sent:

Simulates: Sending a micro-payment inside the open channel (off-chain transaction).



C. Acknowledgment Received:

Simulates: Receiver node confirming receipt of payment within the channel.



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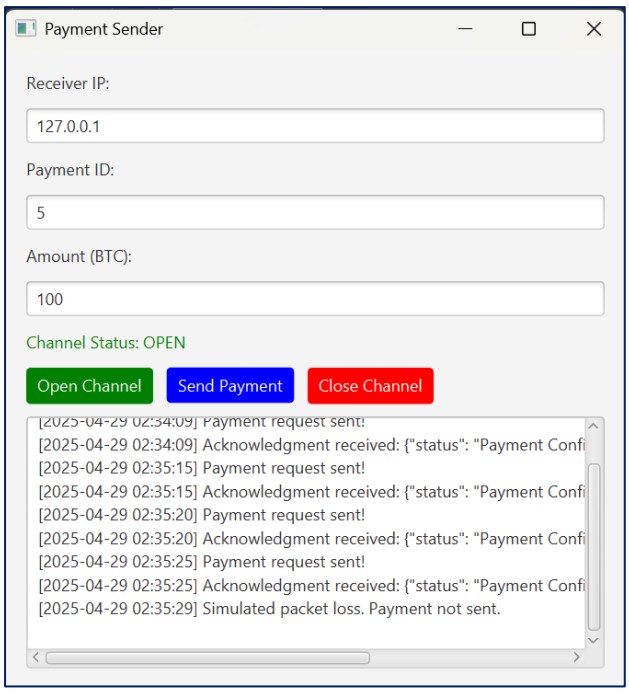
D. Packet Loss Simulated:

Simulates: Network instability where a payment could fail due to congestion.



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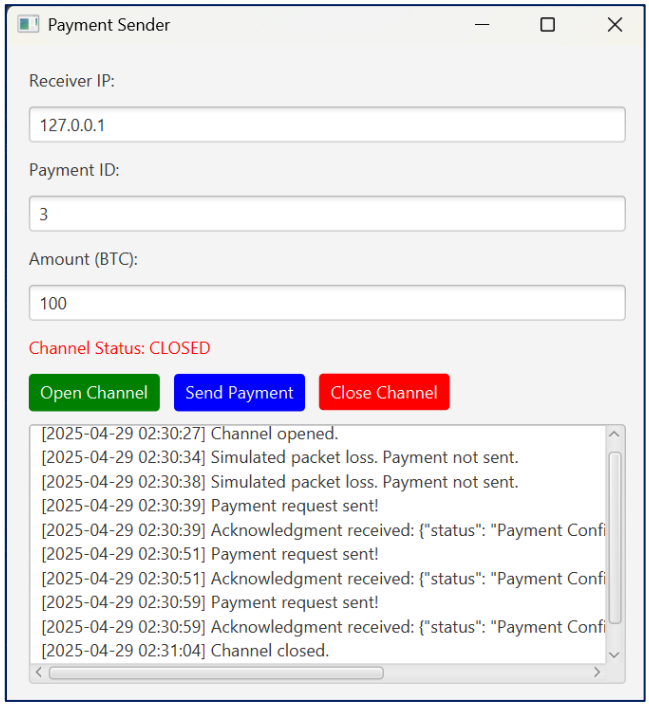
E. Channel Closed:

Simulates: Closing the channel and settling the final state (as in Lightning Network channel closing).



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F. Latency Measurements:

Simulates: Measuring how fast transactions happen — critical for microtransaction networks

```
Payment ID,Amount (BTC),Sent Time,Acknowledgment Time,Latency (ms),Status
CHANNEL OPEN,-,-,-,-,Open
1,100,2025-04-29 02:17:19,2025-04-29 02:17:19,30,Success
5,100,2025-04-29 02:17:27,2025-04-29 02:17:27,2,Success
3,100,2025-04-29 02:17:37,-,-,Packet Loss (Not Sent)
8,100,2025-04-29 02:17:46,-,-,Packet Loss (Not Sent)
89,100,2025-04-29 02:17:57,-,-,Packet Loss (Not Sent)
89,100,2025-04-29 02:17:59,2025-04-29 02:17:59,2,Success
CHANNEL OPEN,-,-,-,-,Open
1,100,2025-04-29 02:30:34,-,-,Packet Loss (Not Sent)
1,100,2025-04-29 02:30:38,-,-,Packet Loss (Not Sent)
1,100,2025-04-29 02:30:39,2025-04-29 02:30:39,20,Success
2,100,2025-04-29 02:30:51,2025-04-29 02:30:51,1,Success
3,100,2025-04-29 02:30:59,2025-04-29 02:30:59,2,Success
CHANNEL CLOSE,-,-,-,-,Closed
CHANNEL OPEN,-,-,-,-,Open
1,100,2025-04-29 02:34:09,2025-04-29 02:34:09,49,Success
2,100,2025-04-29 02:35:15,2025-04-29 02:35:15,3,Success
3,100,2025-04-29 02:35:20,2025-04-29 02:35:20,2,Success
4,100,2025-04-29 02:35:25,2025-04-29 02:35:25,2,Success
5,100,2025-04-29 02:35:29,-,-,Packet Loss (Not Sent)
```

G. history.csv Logging:

Simulates: Internal node bookkeeping of all payment attempts and their results


```
Payment ID,Amount (BTC),Sent Time,Acknowledgment Time,Latency (ms),Status
CHANNEL OPEN,-,-,-,-,Open
1,100,2025-04-29 02:17:19,2025-04-29 02:17:19,30,Success
5,100,2025-04-29 02:17:27,2025-04-29 02:17:27,2,Success
3,100,2025-04-29 02:17:37,-,-,Packet Loss (Not Sent)
8,100,2025-04-29 02:17:46,-,-,Packet Loss (Not Sent)
89,100,2025-04-29 02:17:57,-,-,Packet Loss (Not Sent)
89,100,2025-04-29 02:17:59,2025-04-29 02:17:59,2,Success
CHANNEL OPEN,-,-,-,-,Open
1,100,2025-04-29 02:30:34,-,-,Packet Loss (Not Sent)
1,100,2025-04-29 02:30:38,-,-,Packet Loss (Not Sent)
1,100,2025-04-29 02:30:39,2025-04-29 02:30:39,20,Success
2,100,2025-04-29 02:30:51,2025-04-29 02:30:51,1,Success
3,100,2025-04-29 02:30:59,2025-04-29 02:30:59,2,Success
CHANNEL CLOSE,-,-,-,-,Closed
CHANNEL OPEN,-,-,-,-,Open
1,100,2025-04-29 02:34:09,2025-04-29 02:34:09,49,Success
2,100,2025-04-29 02:35:15,2025-04-29 02:35:15,3,Success
3,100,2025-04-29 02:35:20,2025-04-29 02:35:20,2,Success
4,100,2025-04-29 02:35:25,2025-04-29 02:35:25,2,Success
5,100,2025-04-29 02:35:29,-,-,Packet Loss (Not Sent)
```