Spring, 2021

Team 5

Network Team Project

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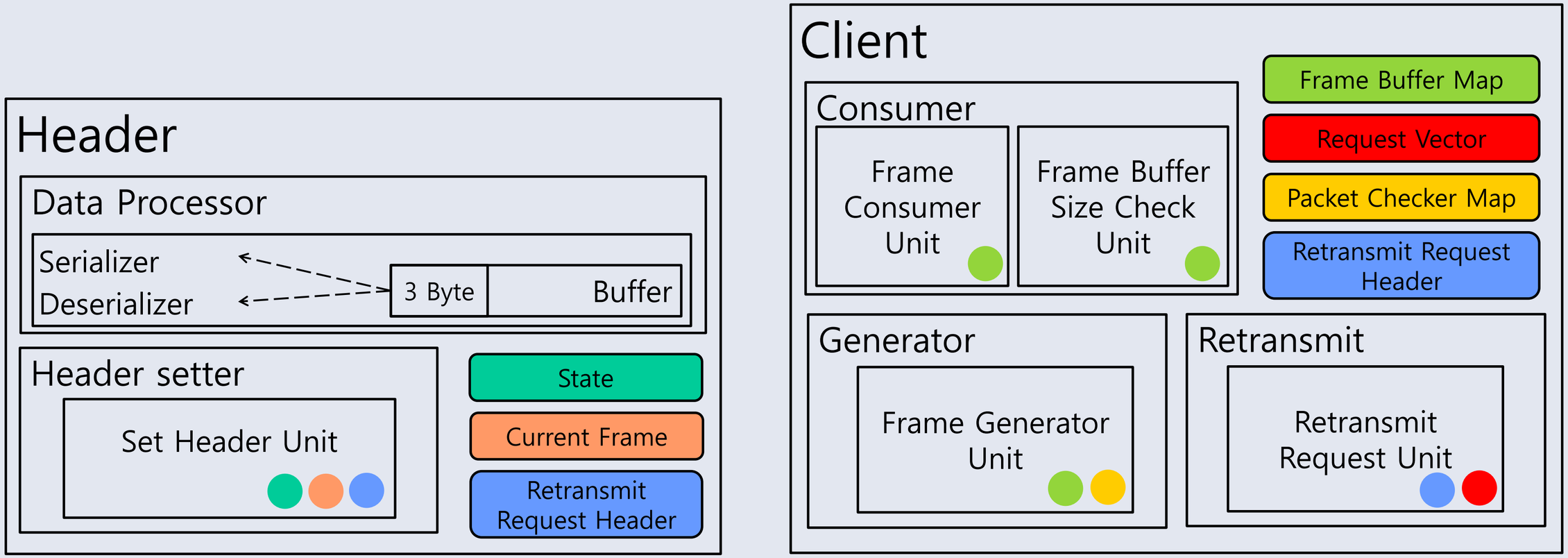
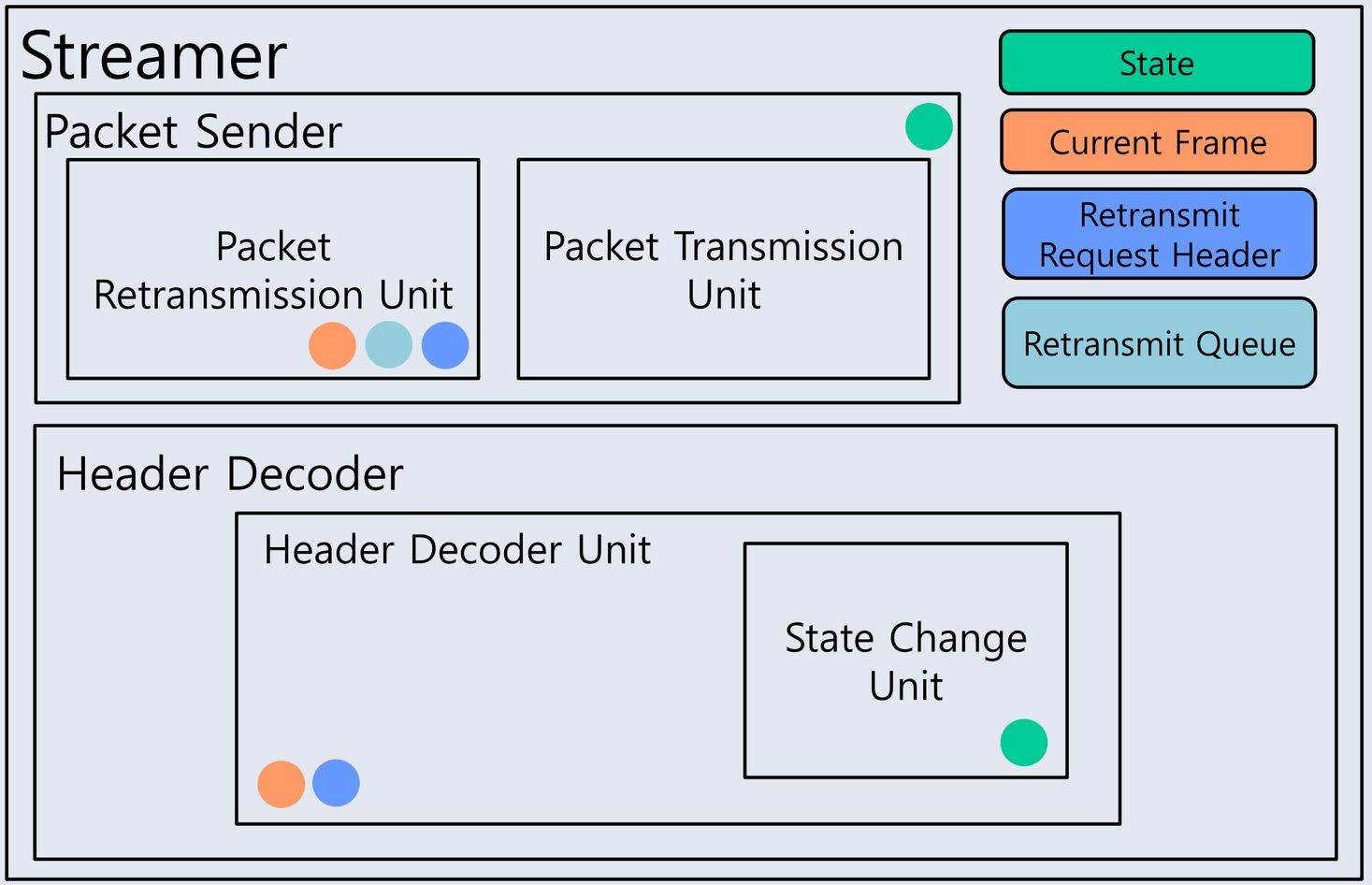

Header
Data Processor
Serializer
Deserializer
3 Byte
Buffer
Header setter
Set Header Unit
State
Current Frame
Retransmit Request Header
Client
Consumer
Frame Consumer Unit
Frame Buffer Size Check Unit
Frame Buffer Map
Request Vector
Packet Checker Map
Retransmit Request Header
Generator
Frame Generator Unit
Retransmit
Retransmit Request Unit

Overview

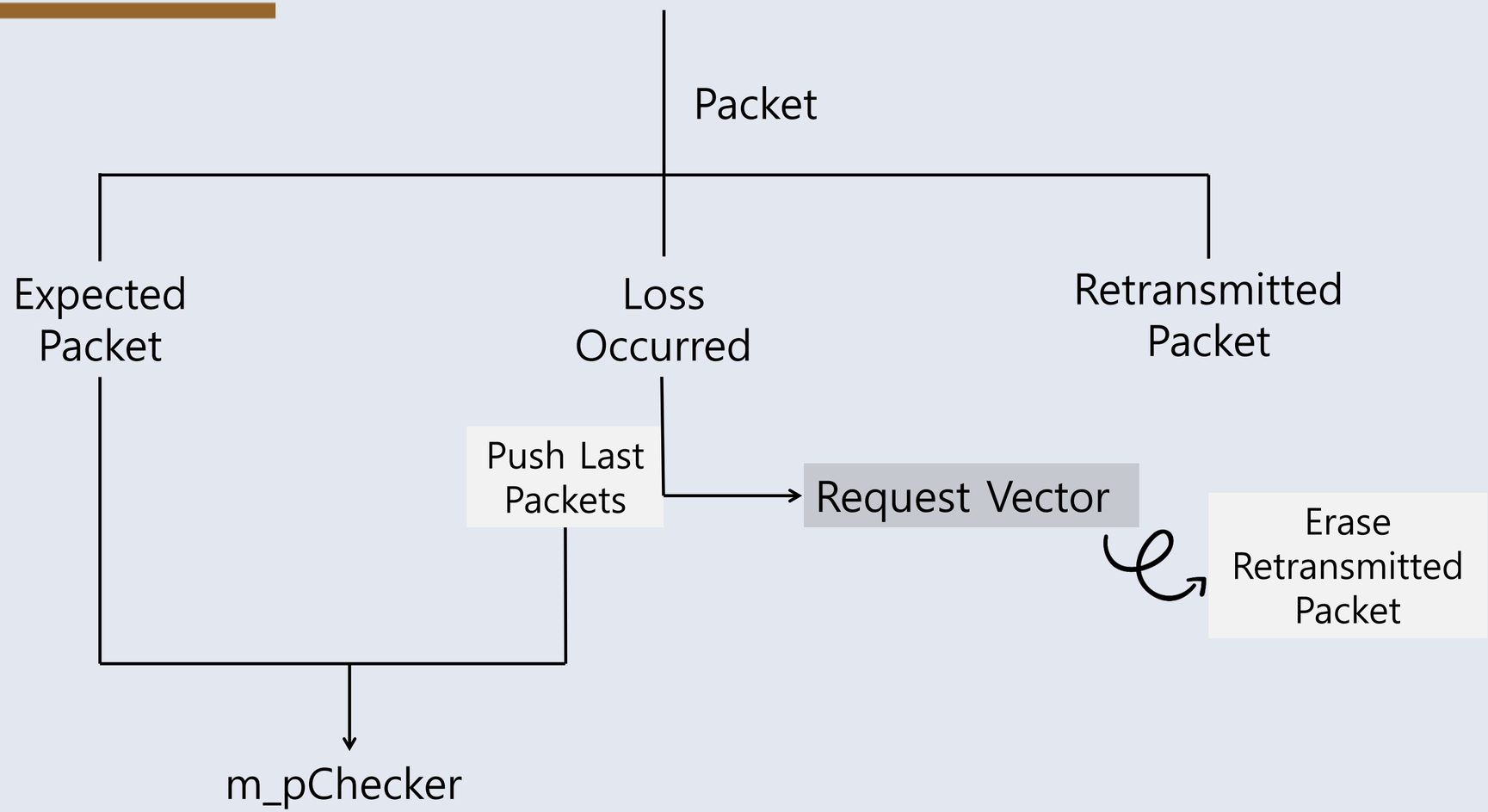

Streamer
Packet Sender
Packet Retransmission Unit
Packet Transmission Unit
Header Decoder
Header Decoder Unit
State Change Unit
State
Current Frame
Retransmit Request Header
Retransmit Queue

Header

Variables	Uint8_t	state	0: retransmit request 1: pause 2: resume
	Uint16_t	currentFrame	Frame number consumed by the current client
	Uint32_t	retransmitRequest[100]	Packet numbers requesting retransmit to steamer

Client

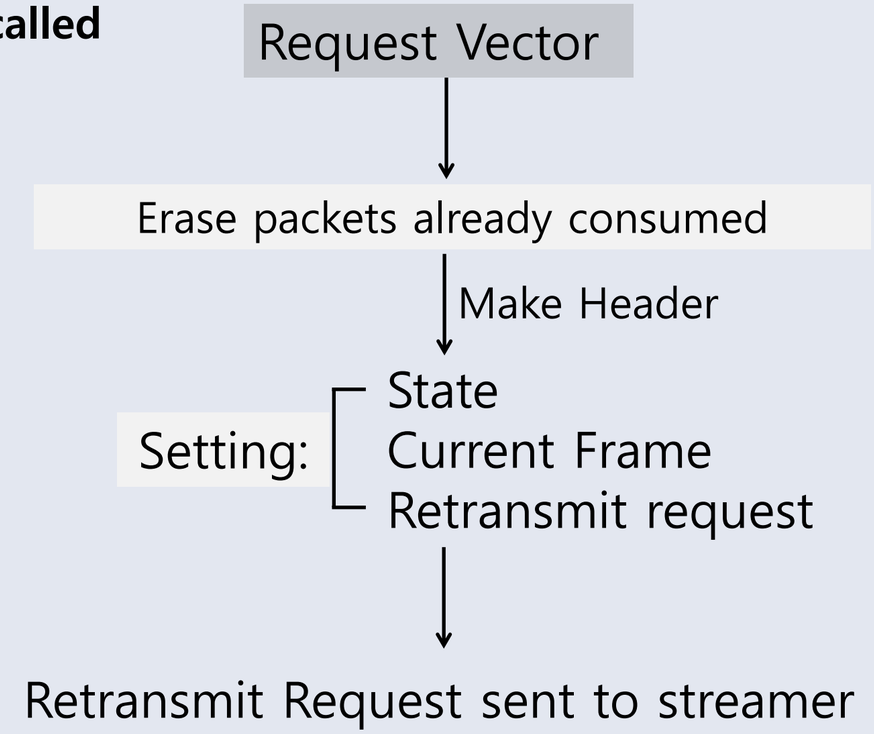
Receiver



Client

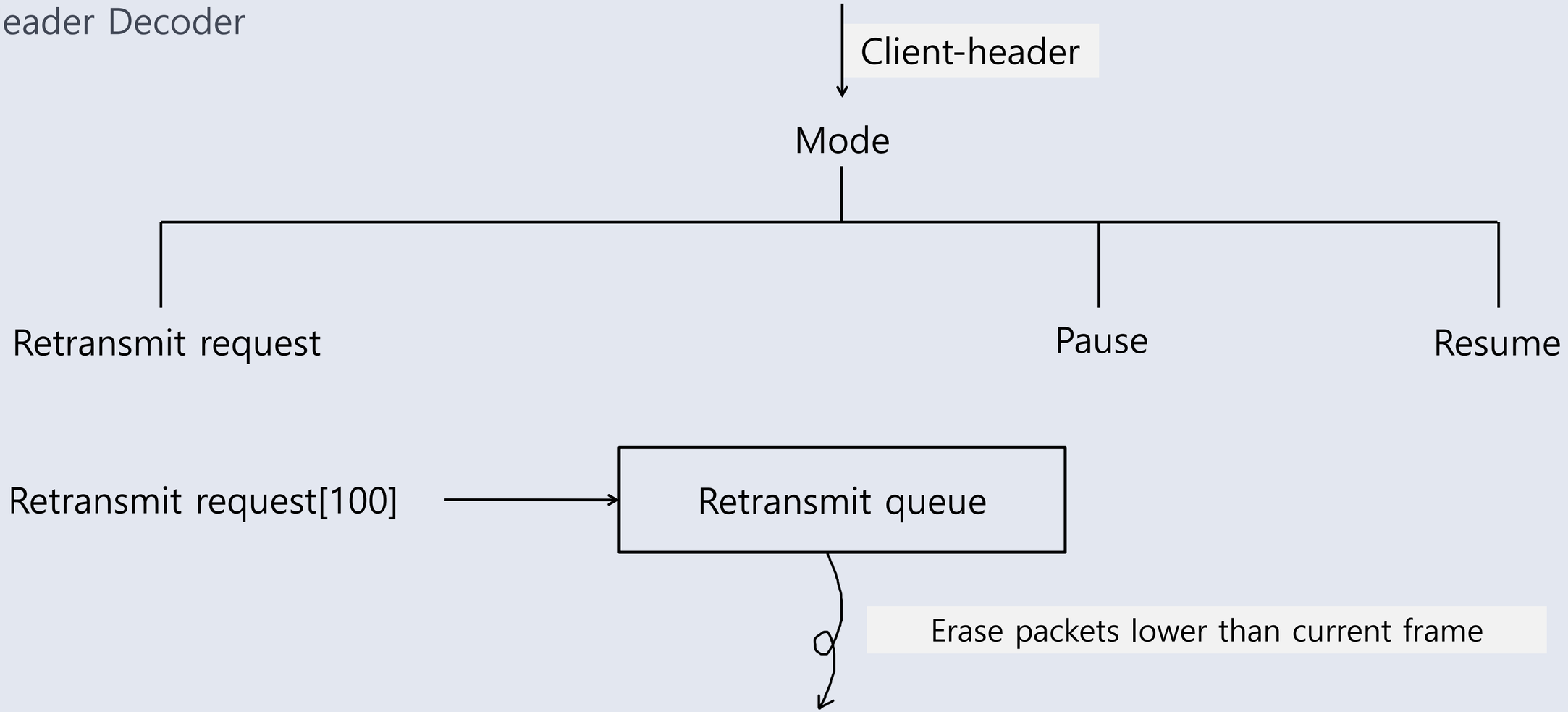
Request Retransmit

Executed when Frame Generator is called



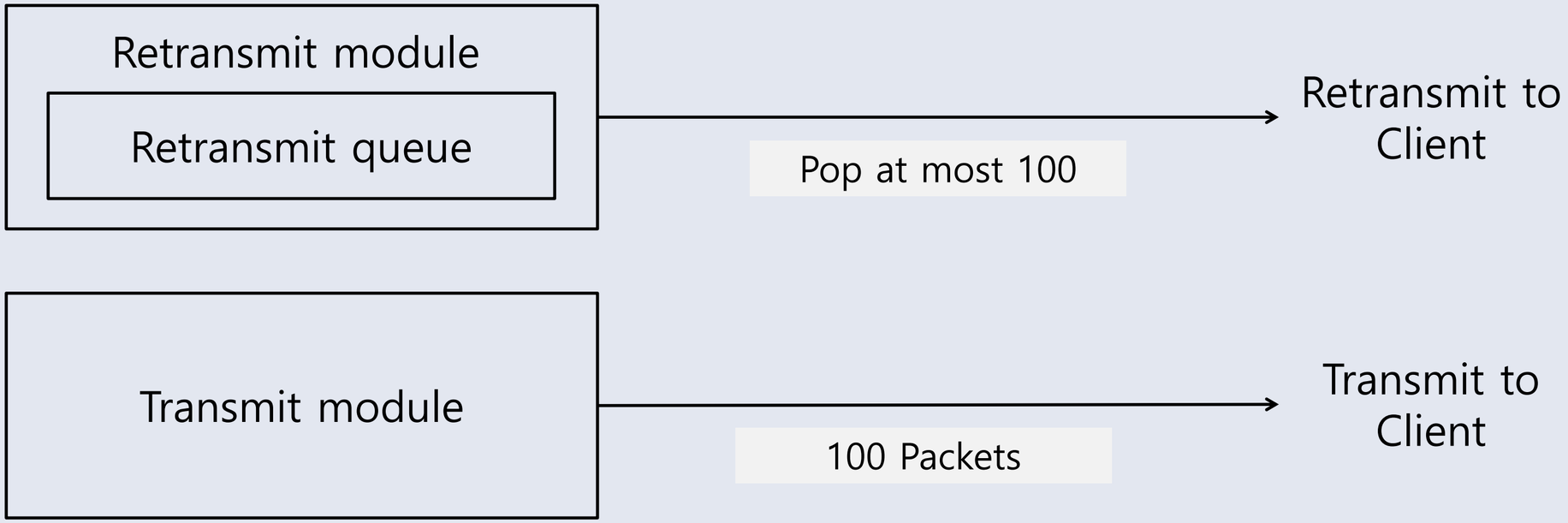
Streamer

Header Decoder



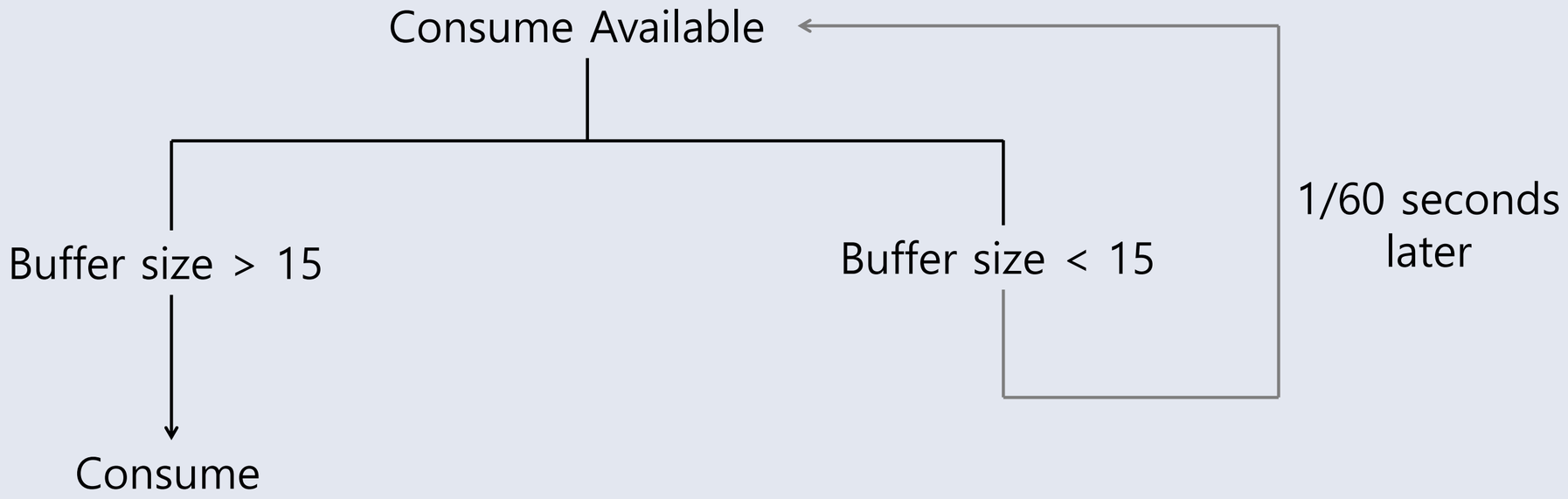
Streamer

Packet Sender



Additional Features

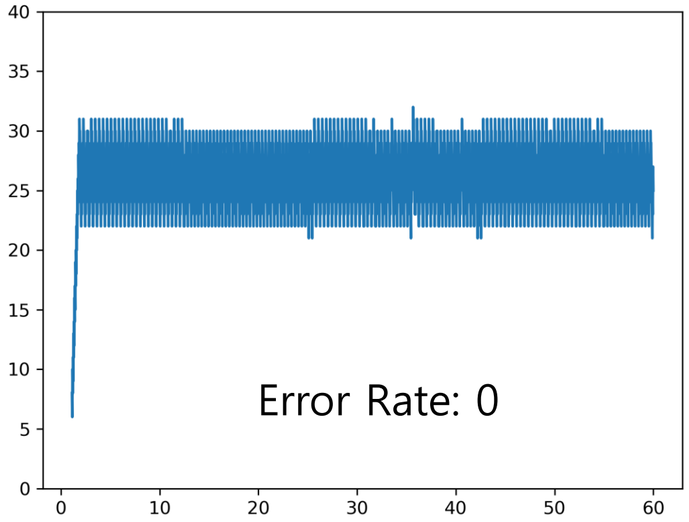
Client Buffering

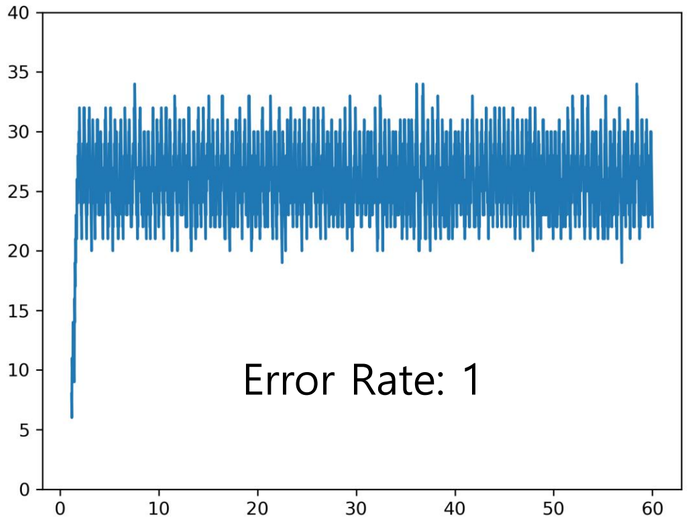


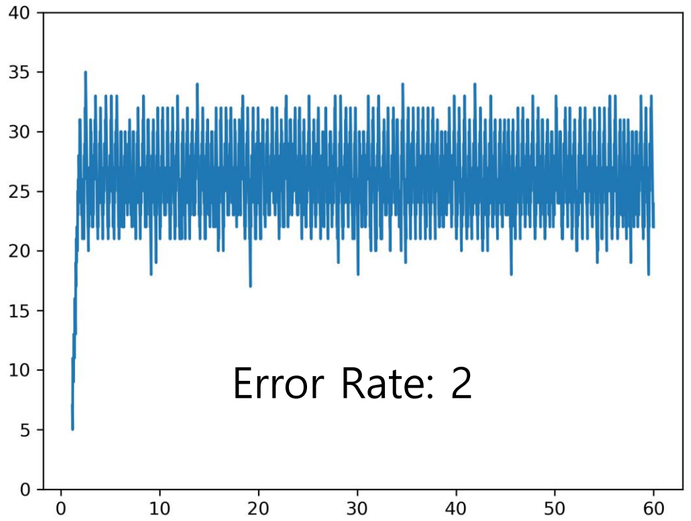
To increase buffer holding rate, client don’t consume frames until the frame buffer is full to some degree.

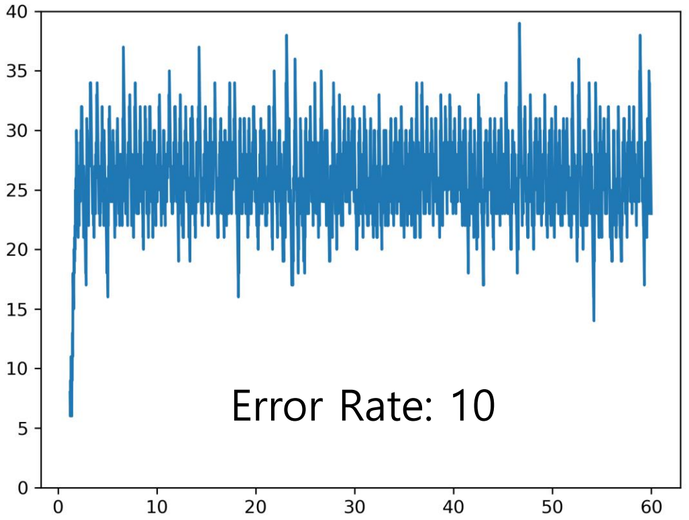
Result

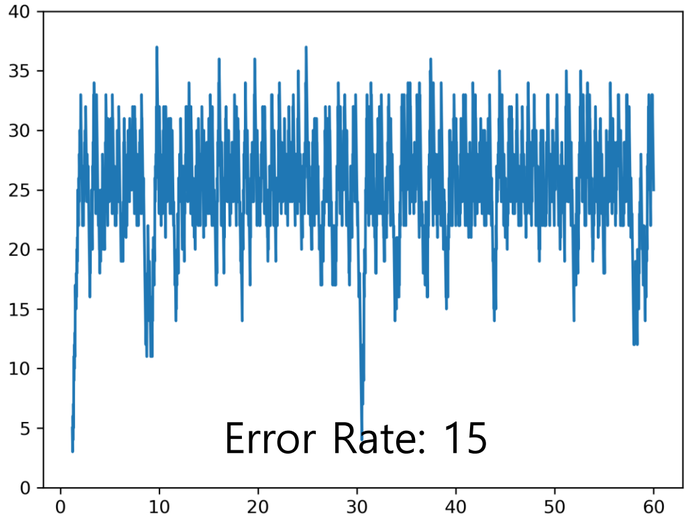
Frame (Buffering: 5)

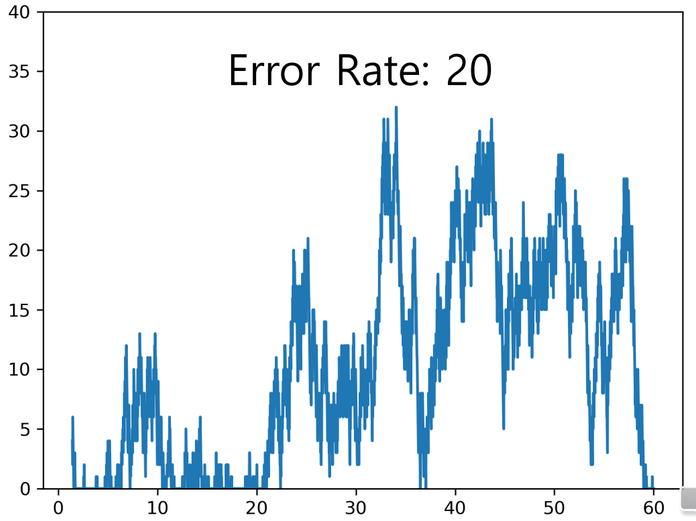






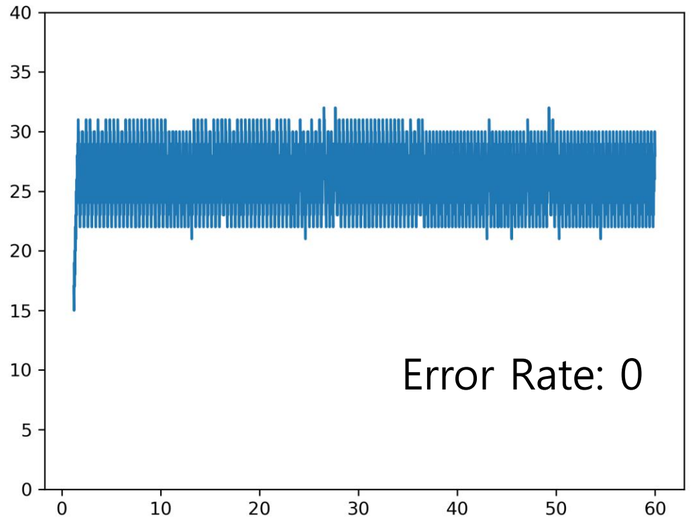


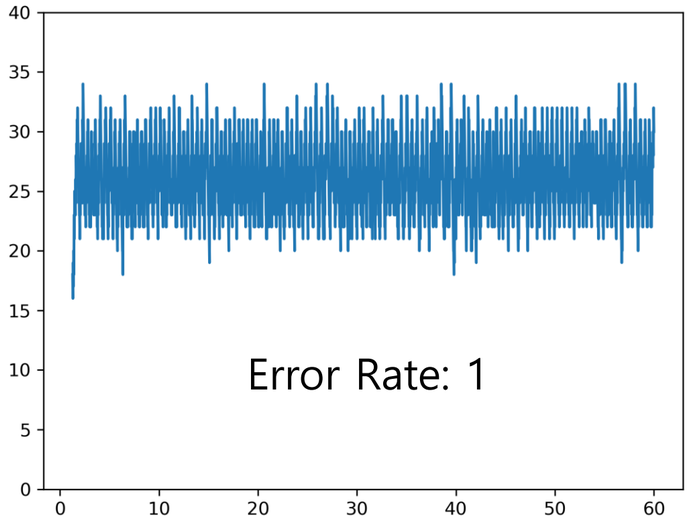


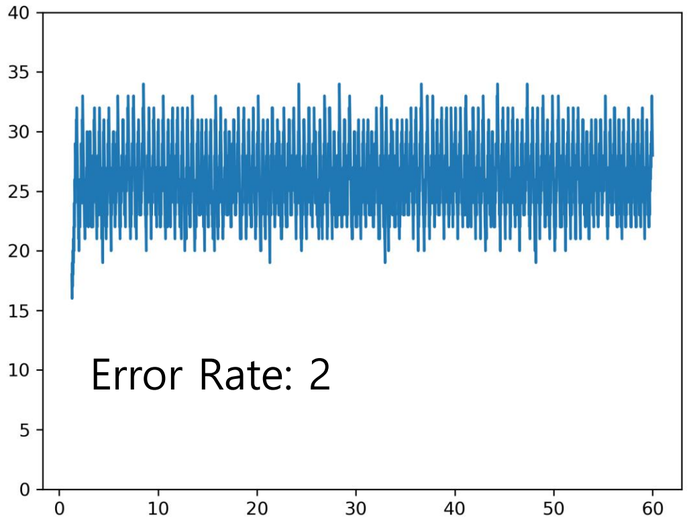


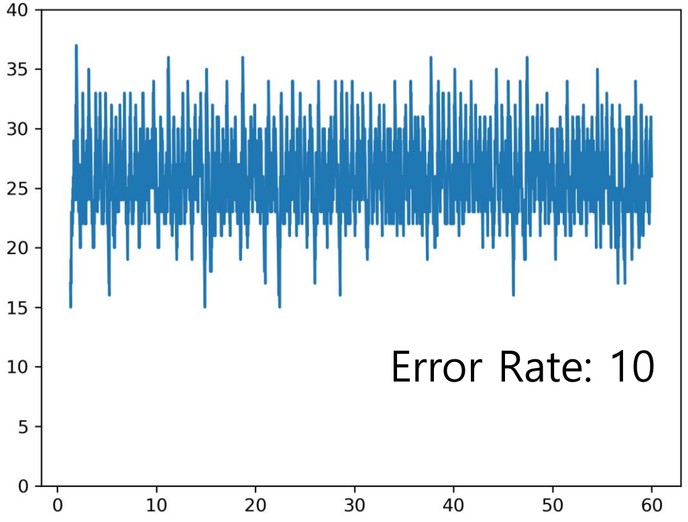
Result

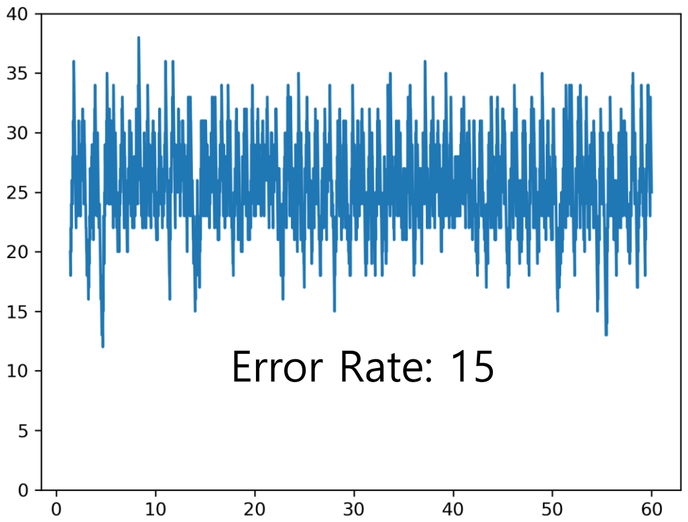
Frame (Buffering: 15)

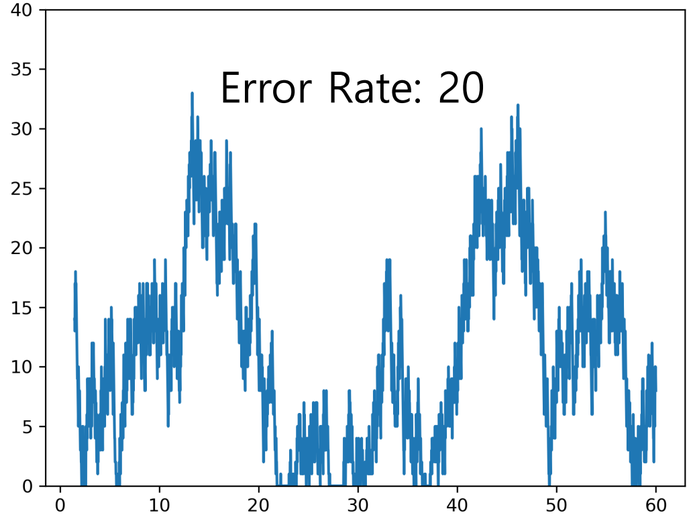






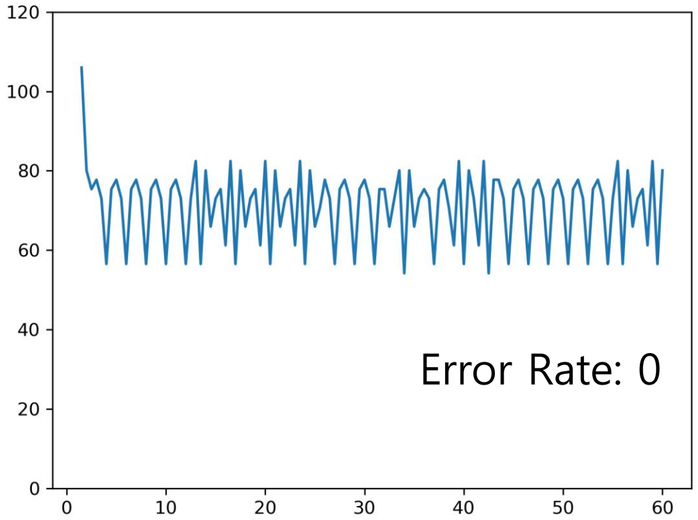


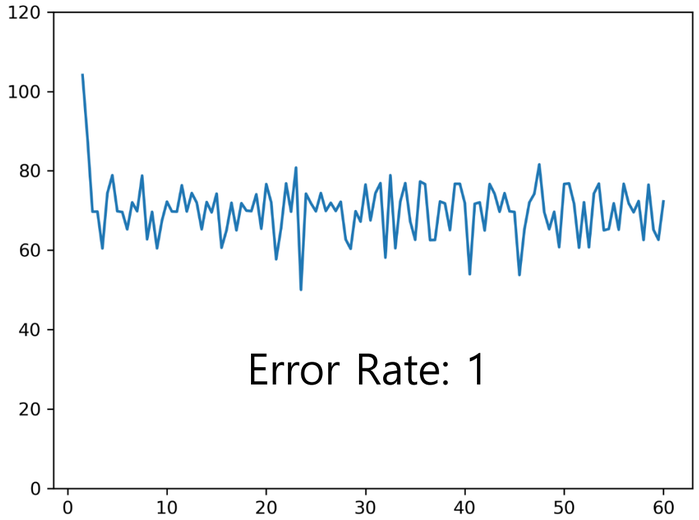


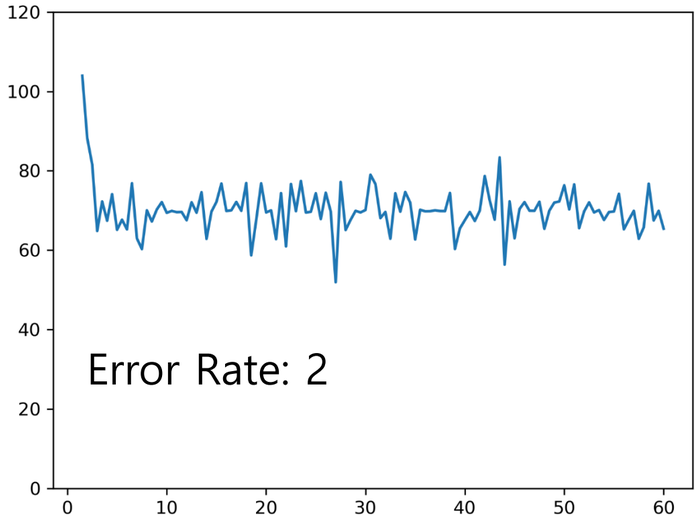


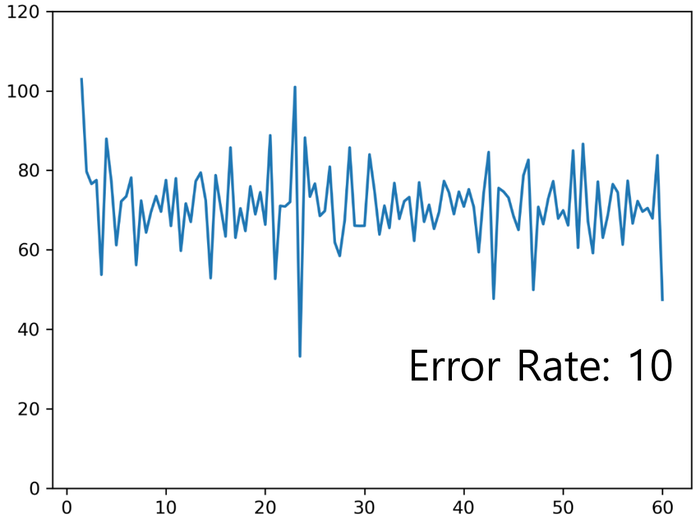
Result

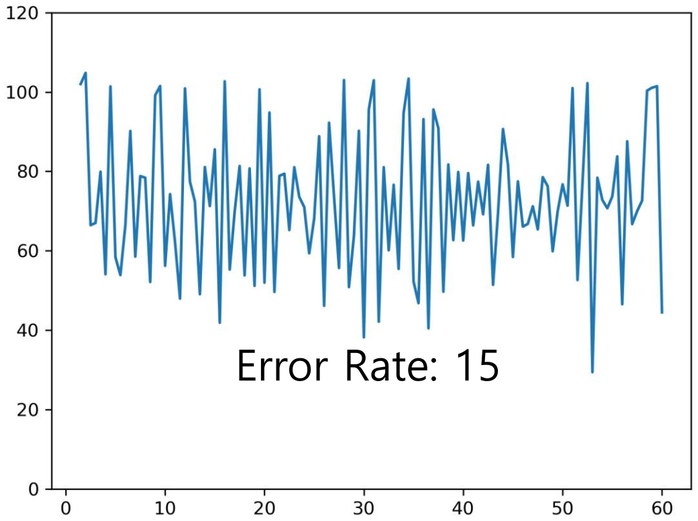
Throughput (Buffering: 5)

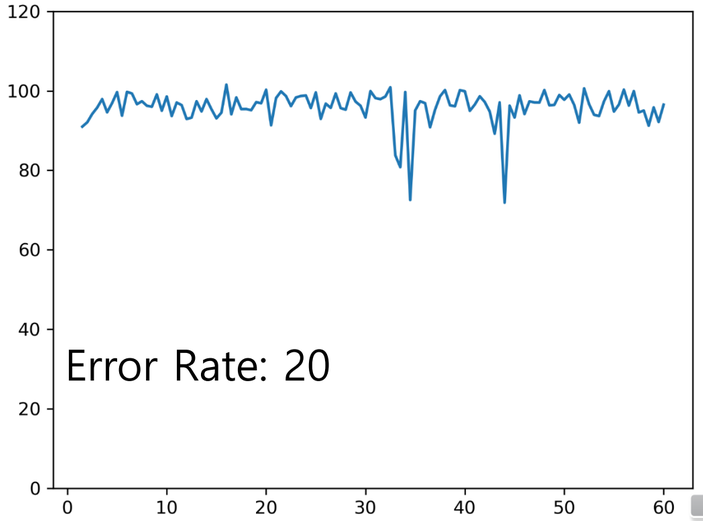






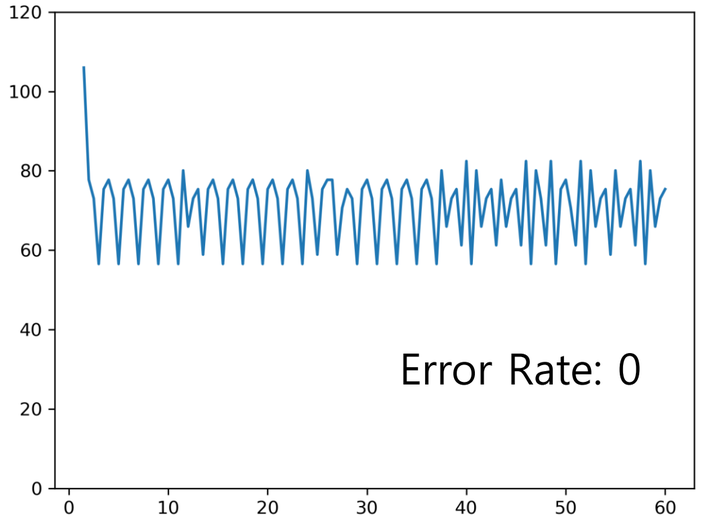


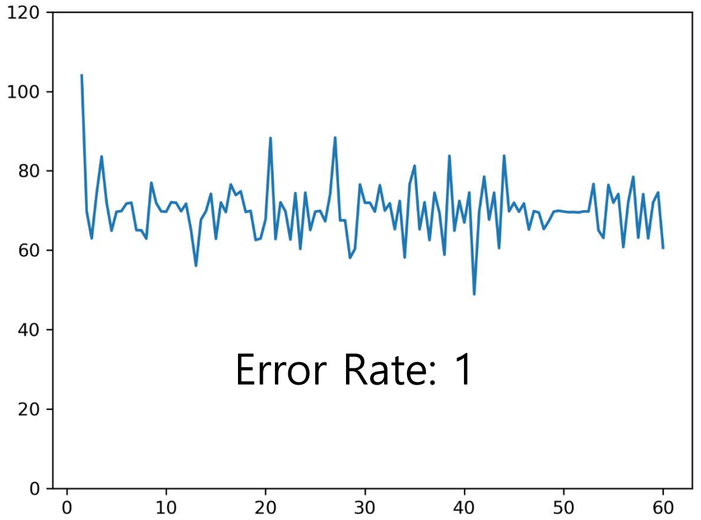


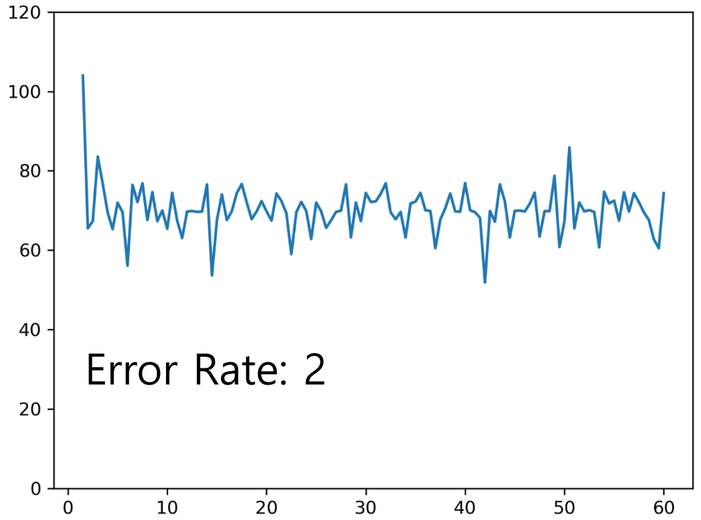


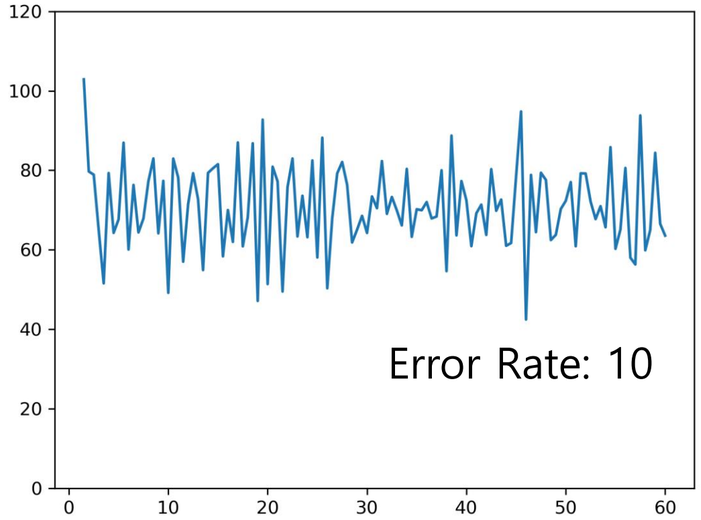
Result

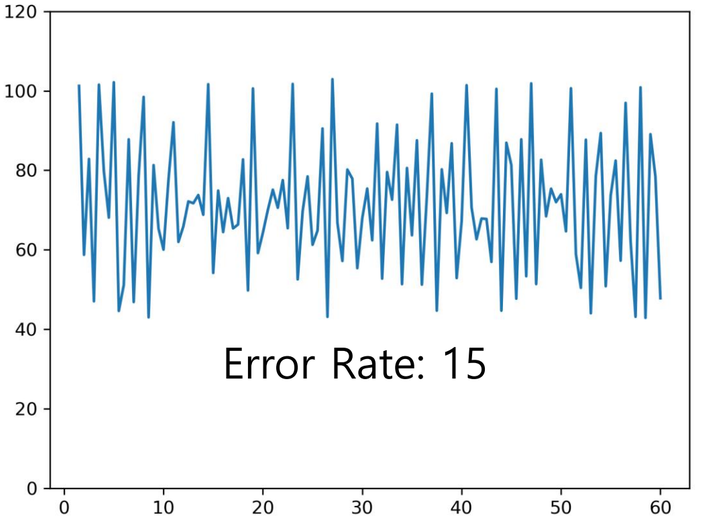
Throughput (Buffering: 15)

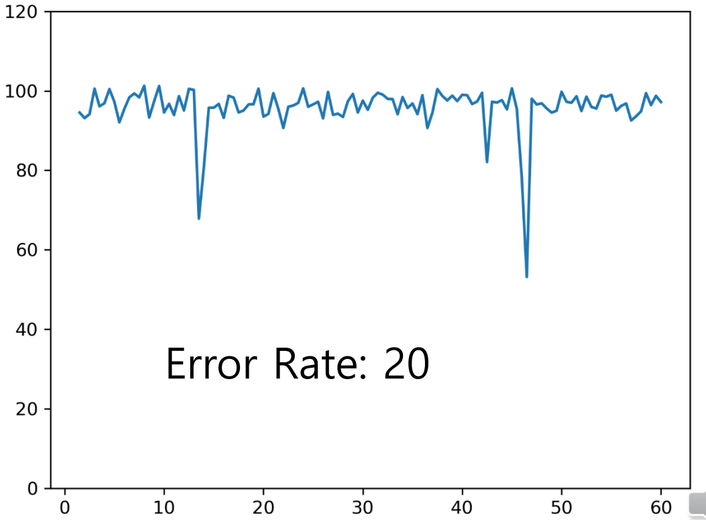








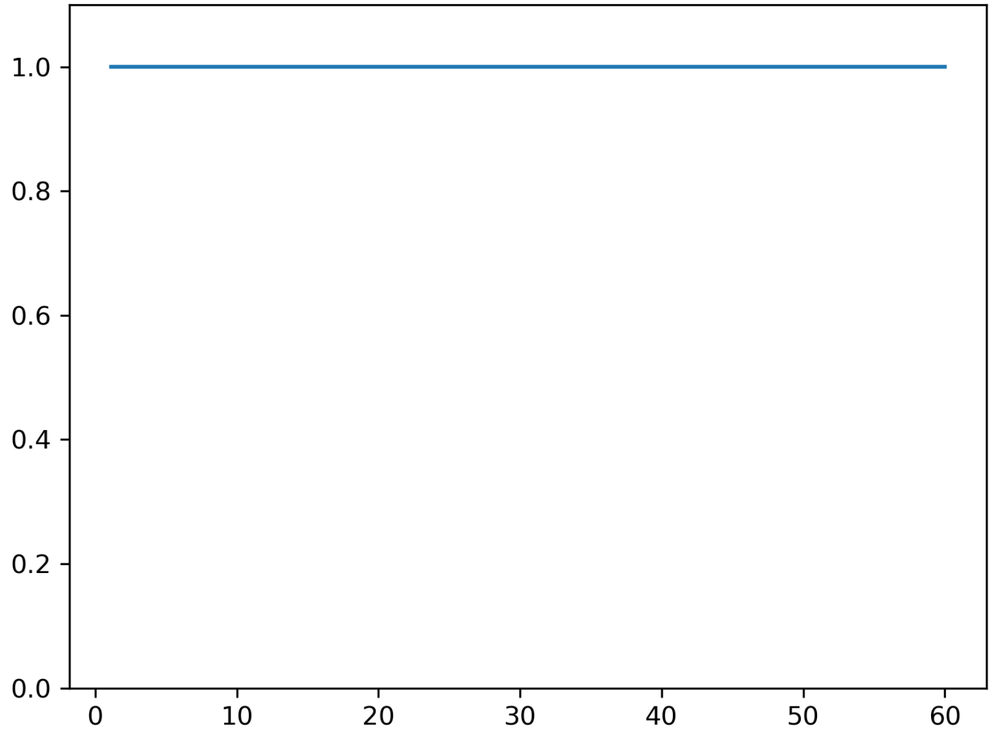




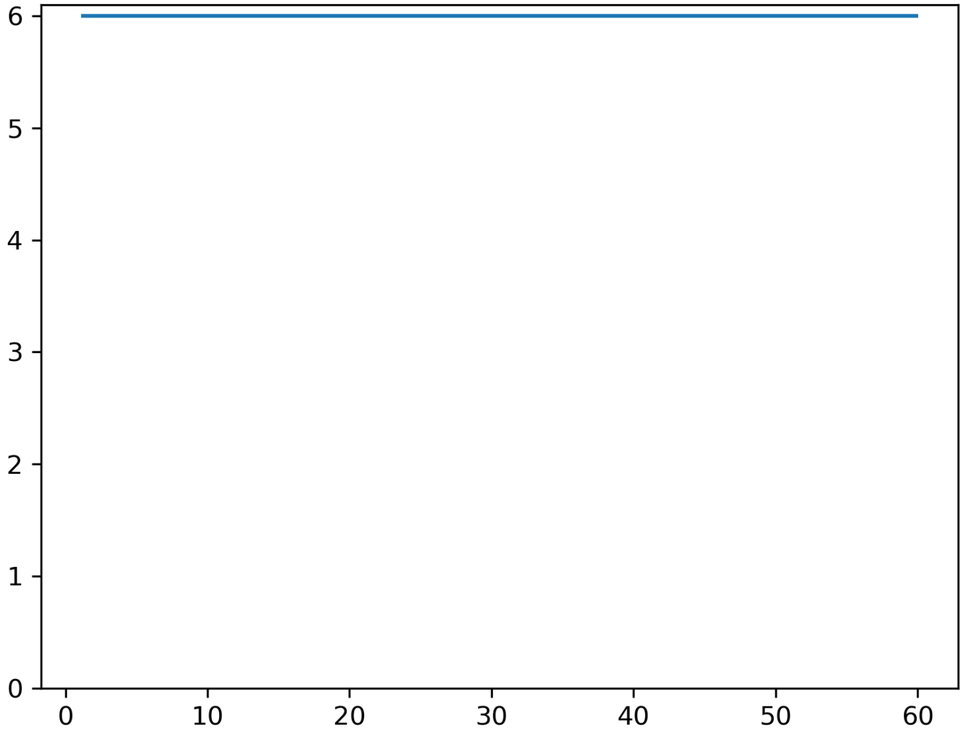
Result

Error Rate: 0, 1, 2, 10, 15

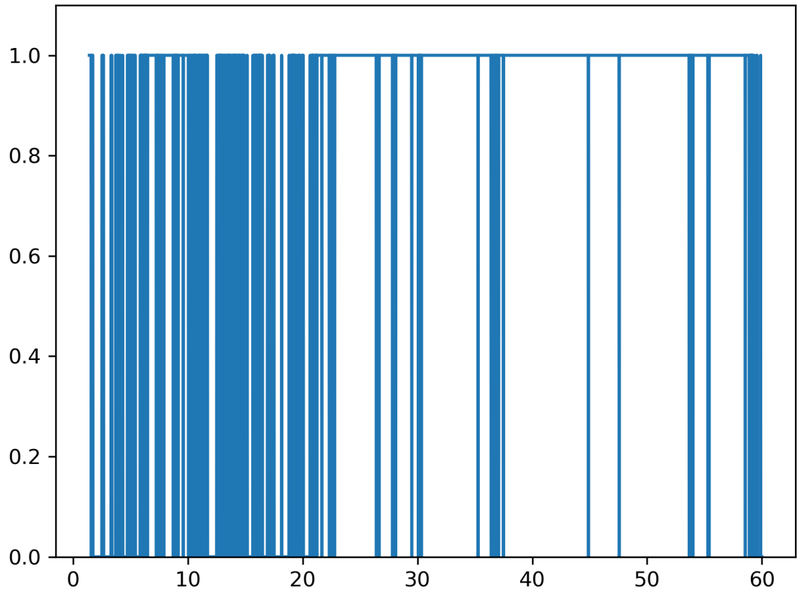
Consume Frame(0, 1)



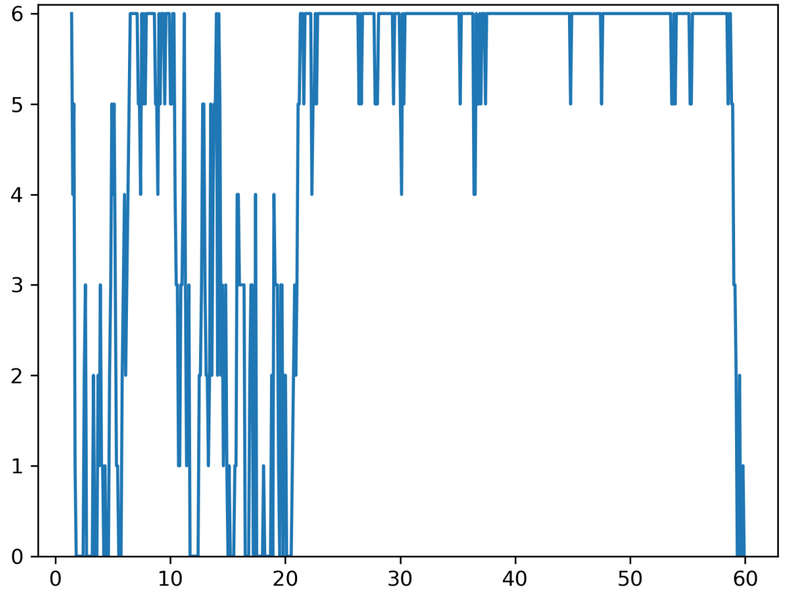
Consume Frame / Sec (Buffering: 5, 15)



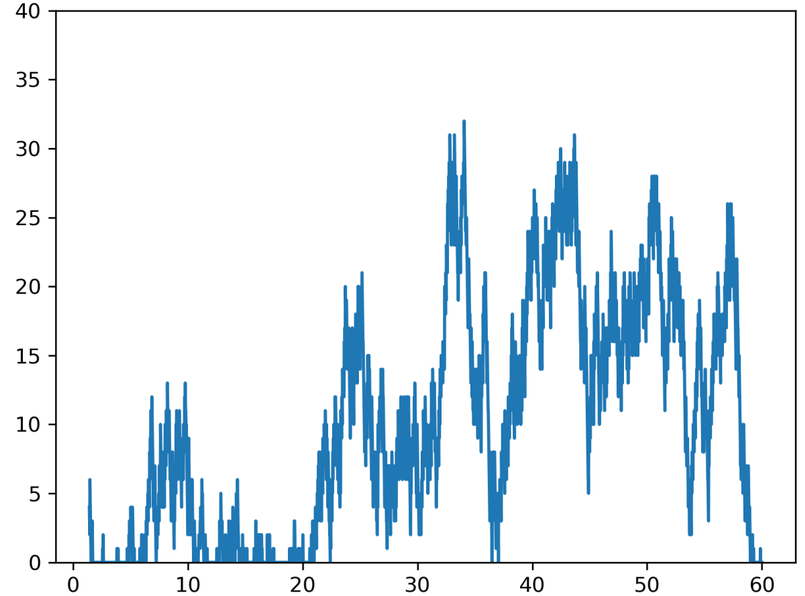
Consume (0, 1)



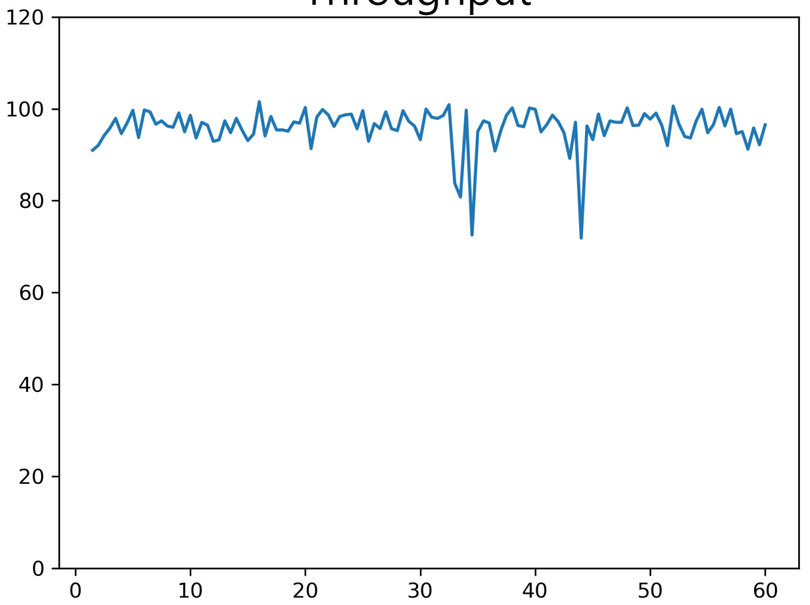
Consume Frame / sec



Remain Buffer

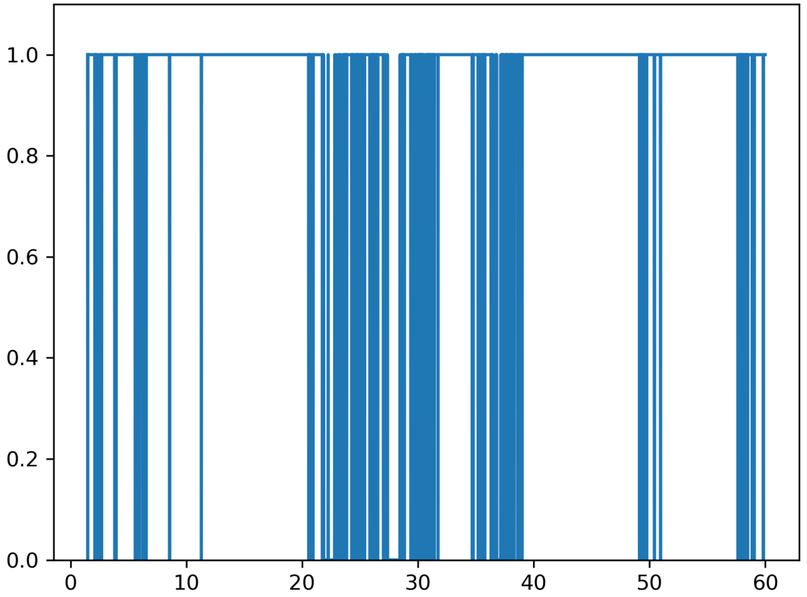


Throughput

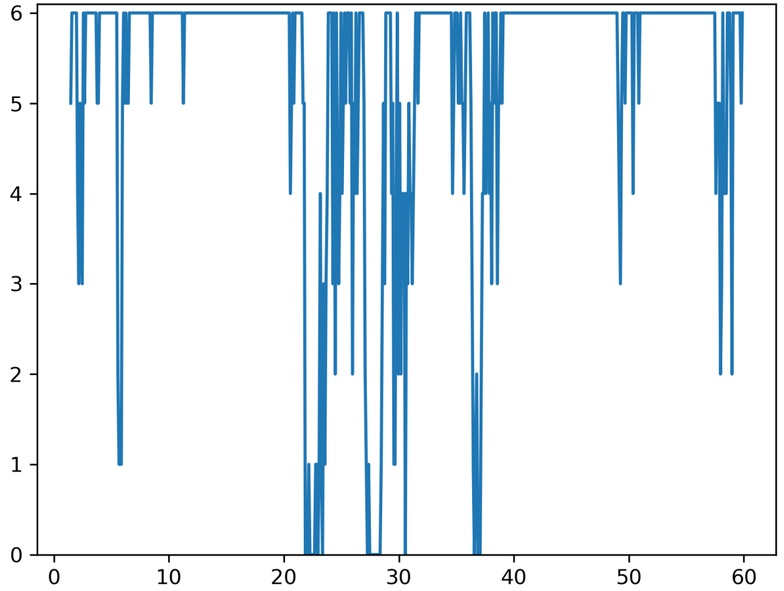


Error Rate: 20
Buffering: 5

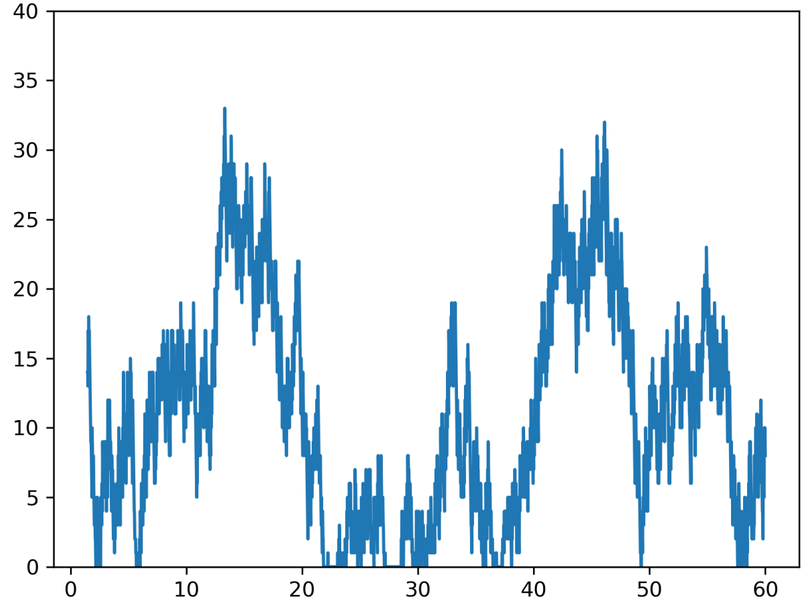
Consume (0, 1)



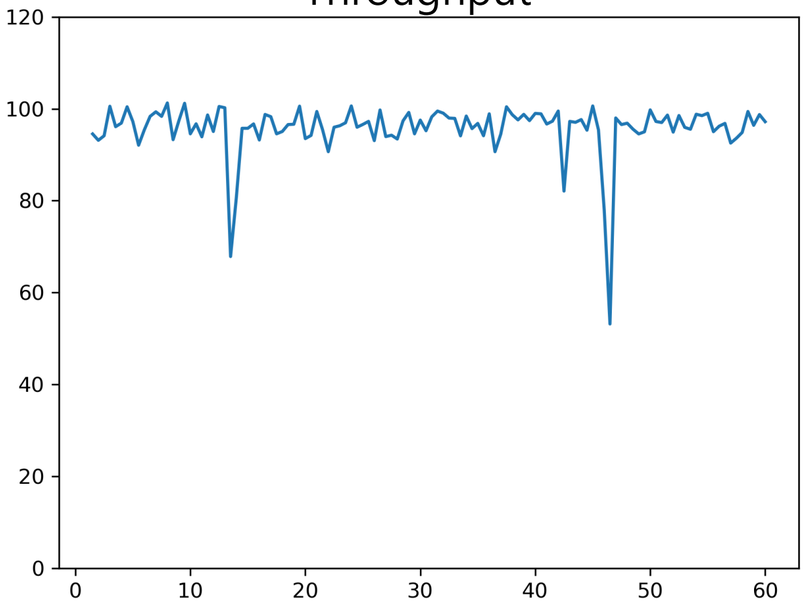
Consume Frame / sec



Remain Buffer



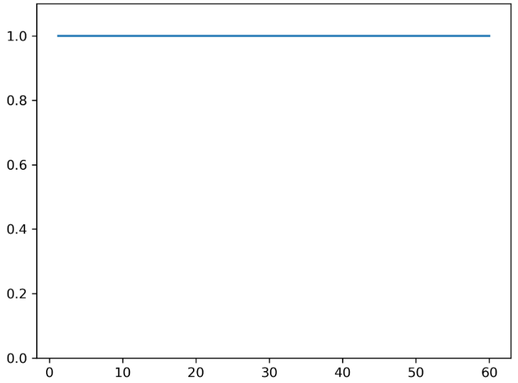
Throughput

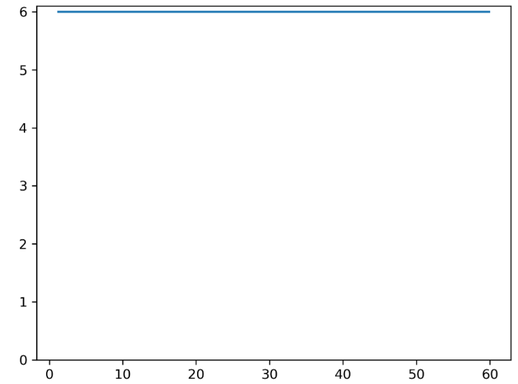


Error Rate: 20
Buffering: 15

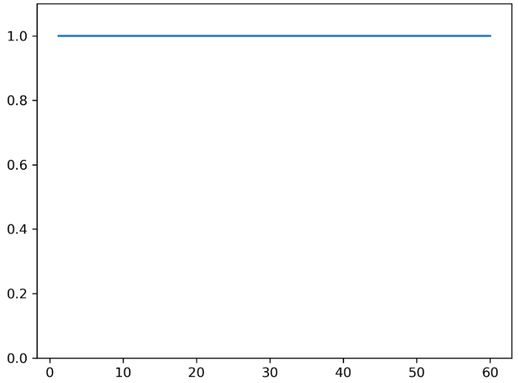
Result

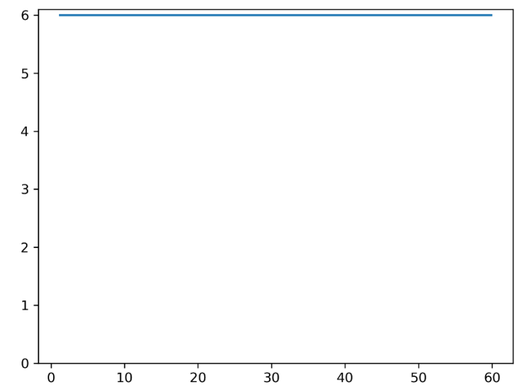
Noise: 45.2



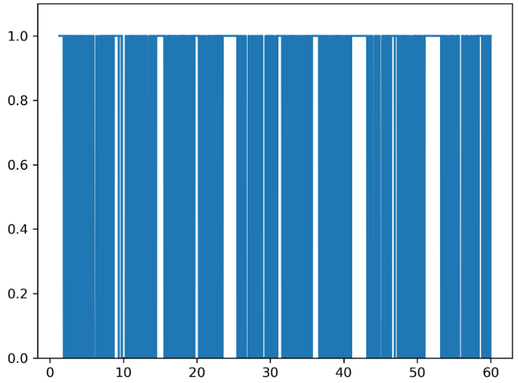


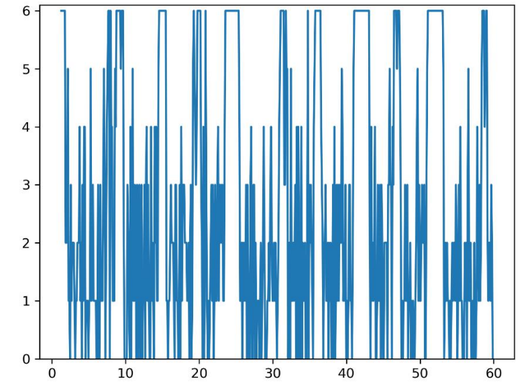
Noise: 45.3



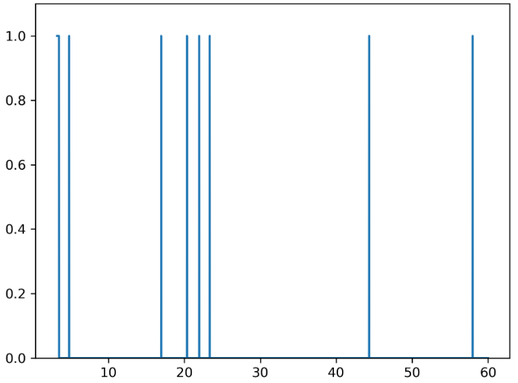


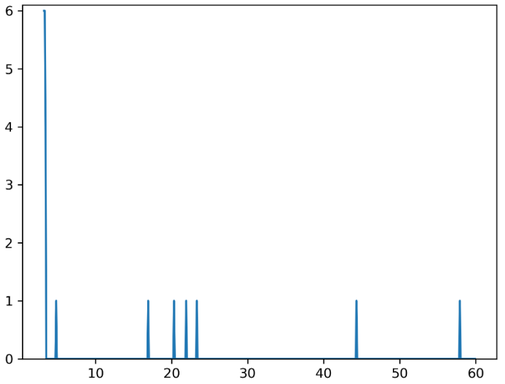
Noise: 45.4





Noise: 45.5





Change Noise 45.2, 45.3, 45.4, 45,5

Error Rate: 0

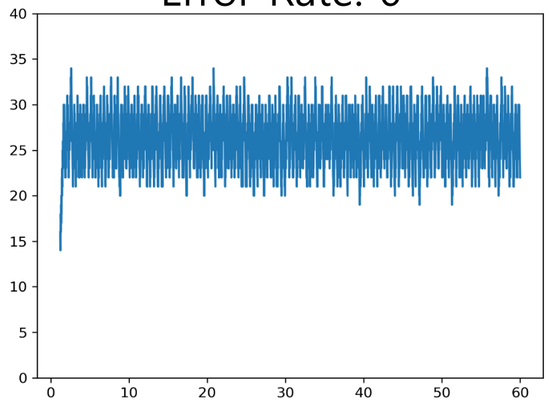
위: Consume Frame(0, 1)

아래: Consume Frame / Sec

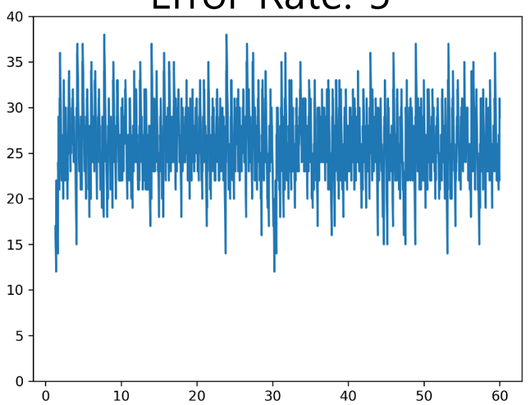
Result

Change Noise 45.3
Remain frame

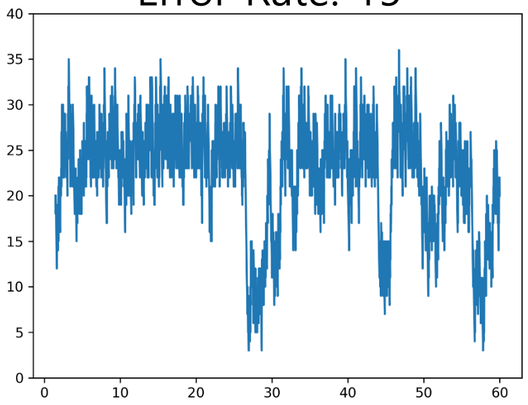
Error Rate: 0



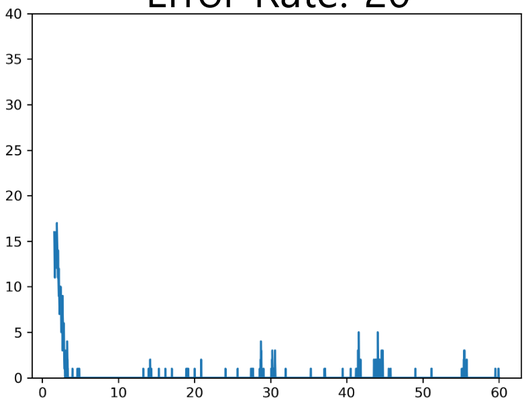
Error Rate: 5



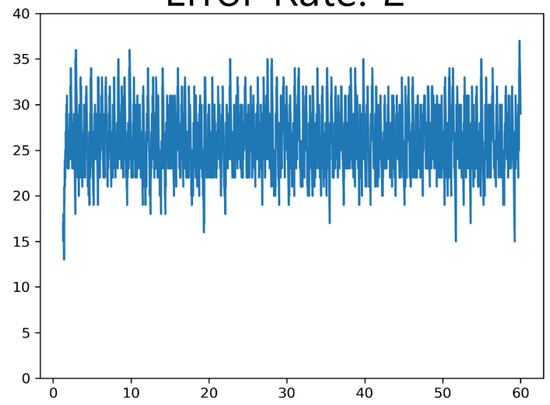
Error Rate: 15



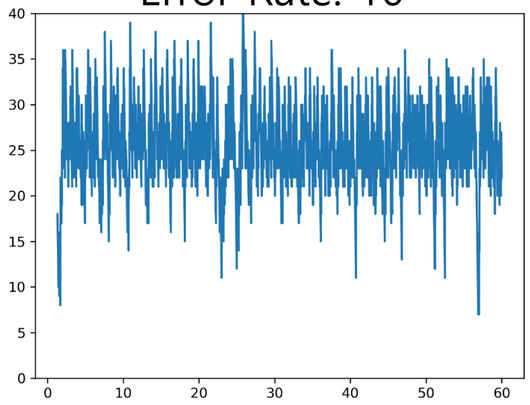
Error Rate: 20



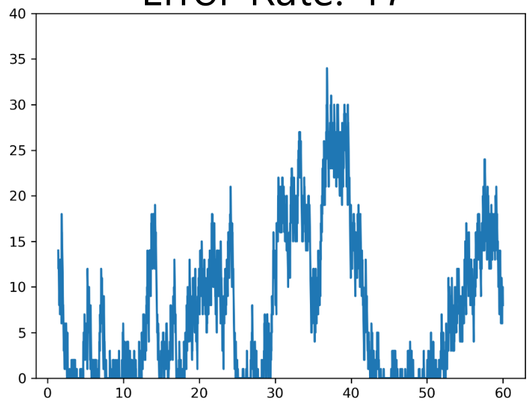
Error Rate: 2



Error Rate: 10



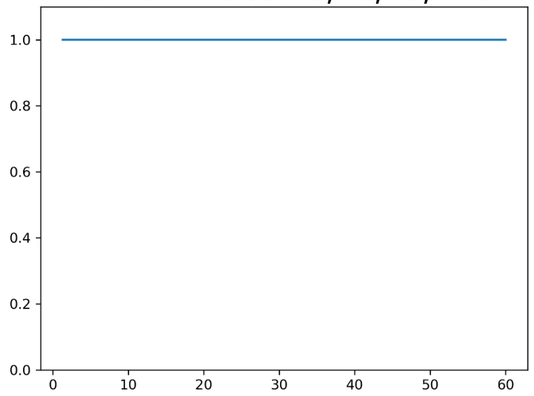
Error Rate: 17



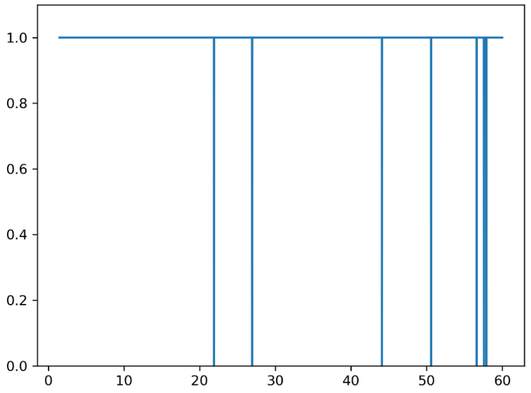
Result

Change Noise 45.3
위: Consume Frame(0, 1)
아래: Consume Frame / Sec

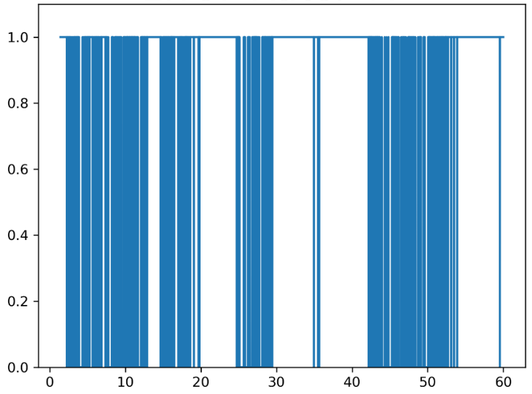
Error Rate: 0, 2, 5, 10



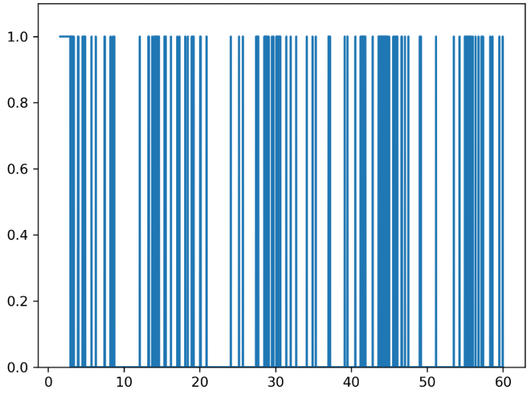
Error Rate: 15

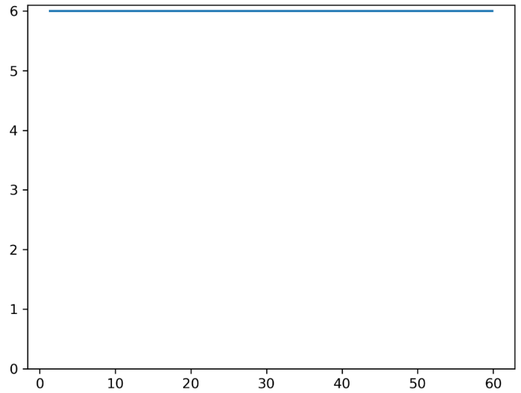


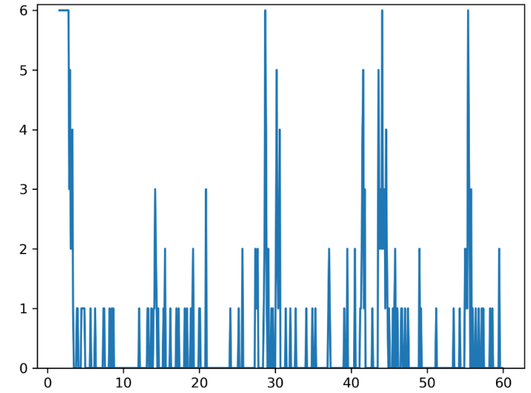
Error Rate: 17

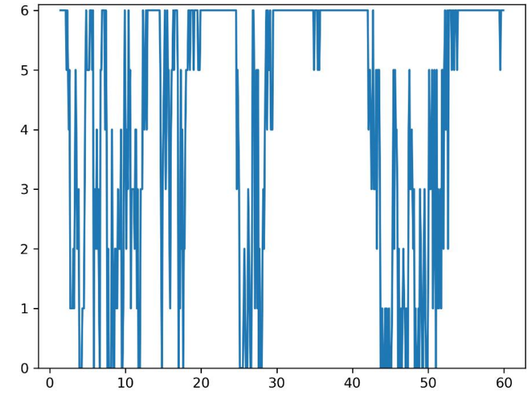


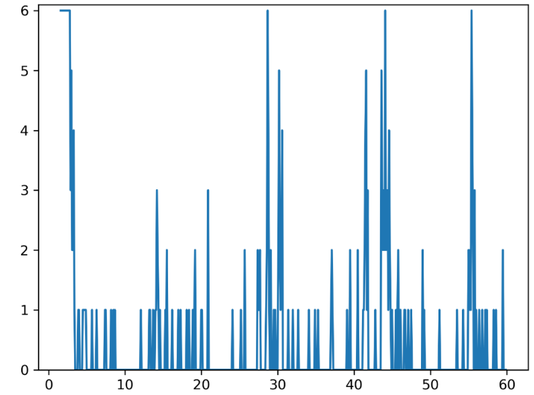
Error Rate: 20







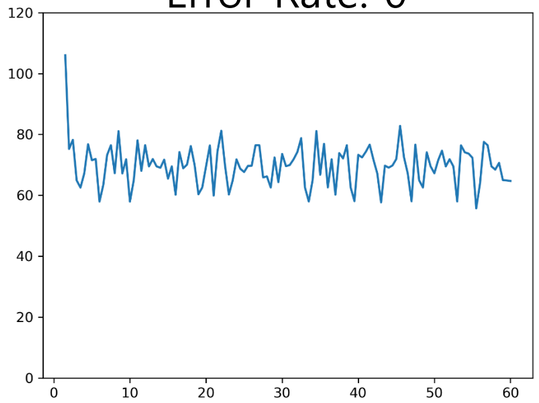




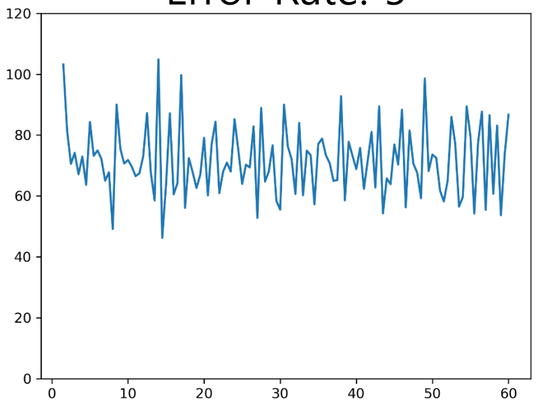
Result

Change Noise 45.3
Throughput

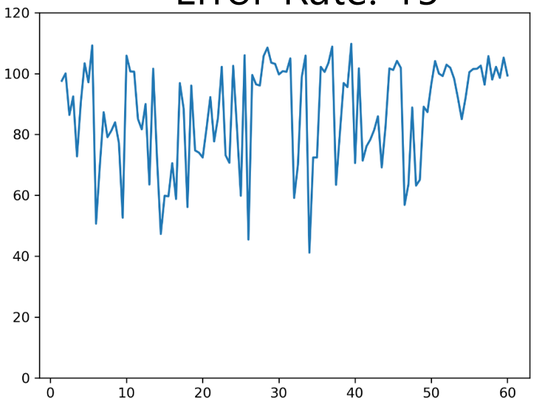
Error Rate: 0



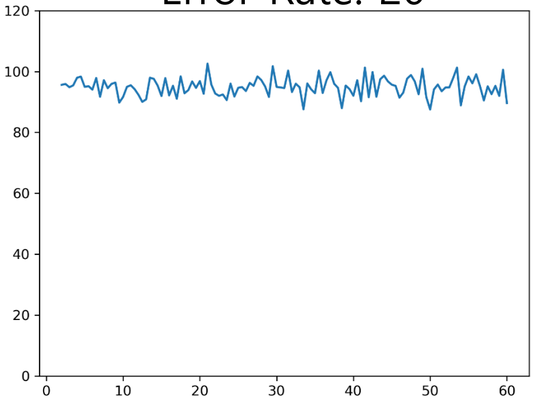
Error Rate: 5



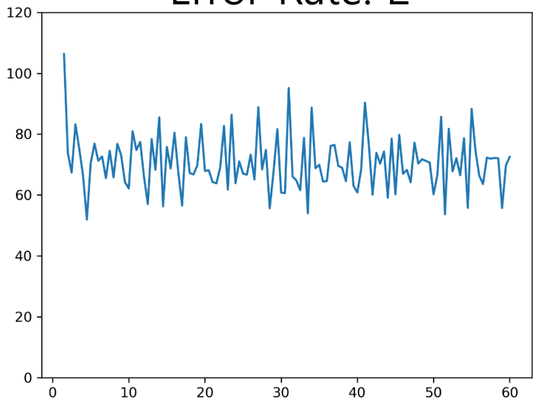
Error Rate: 15



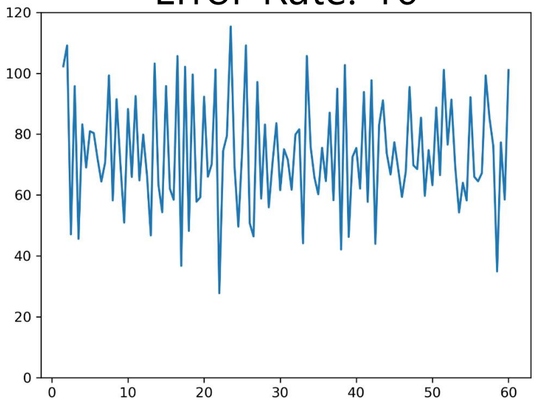
Error Rate: 20



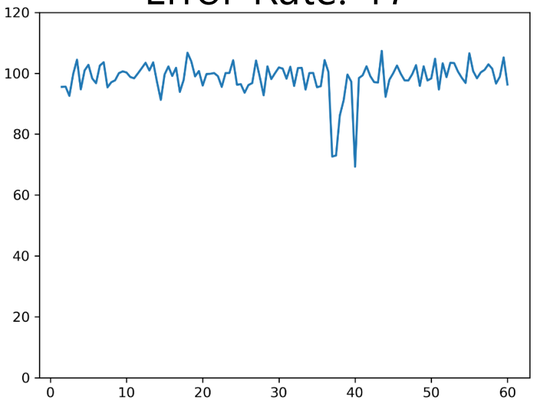
Error Rate: 2



Error Rate: 10



Error Rate: 17



감사합니다