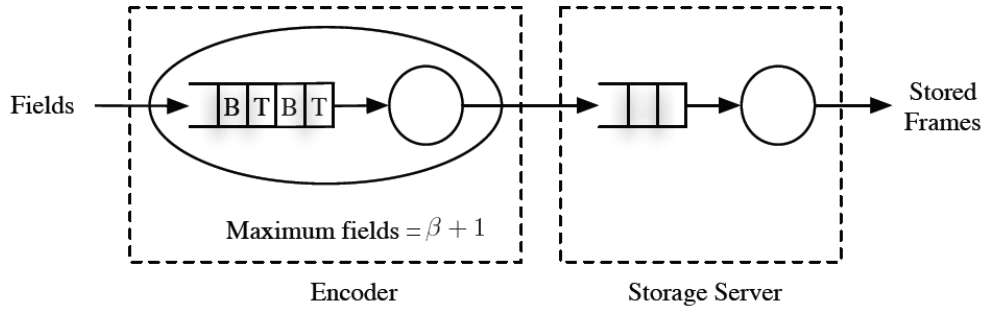
Project 1



組員：

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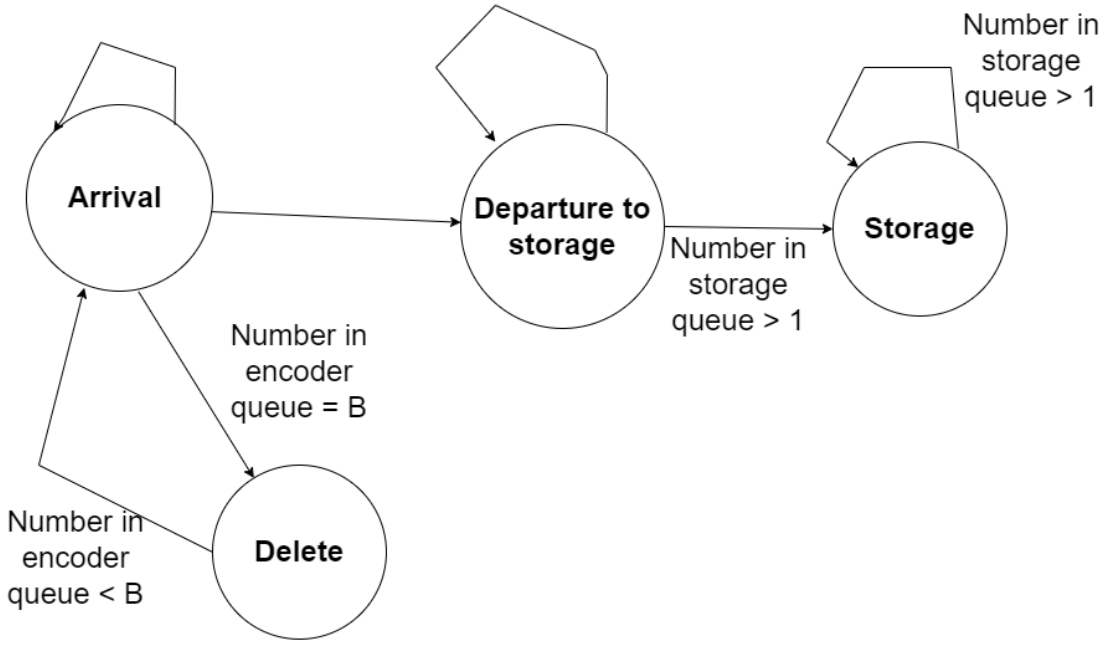
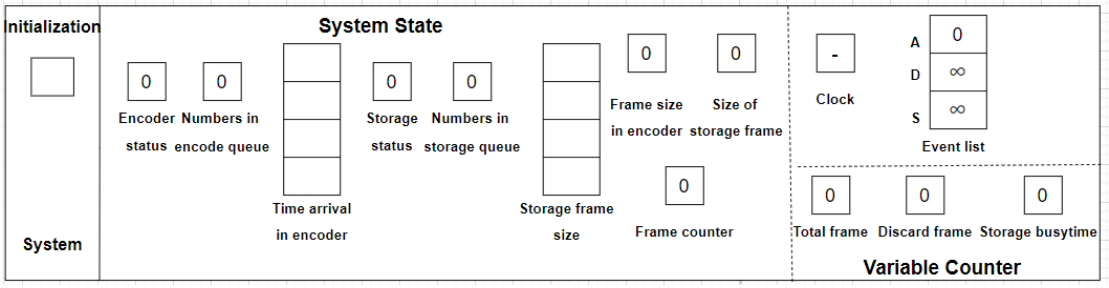
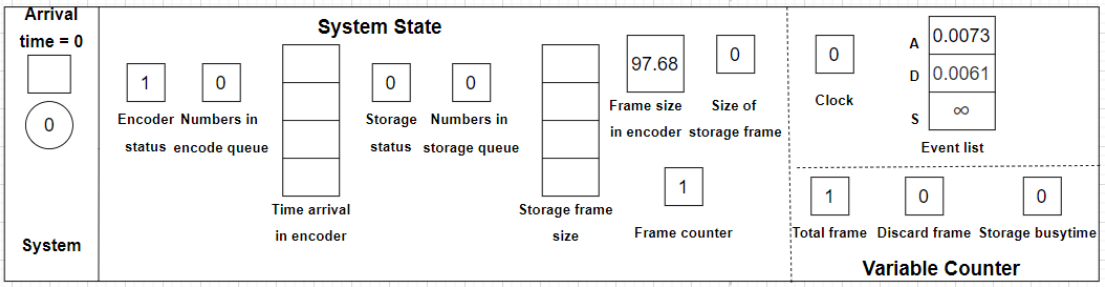
EVENT GRAPH:

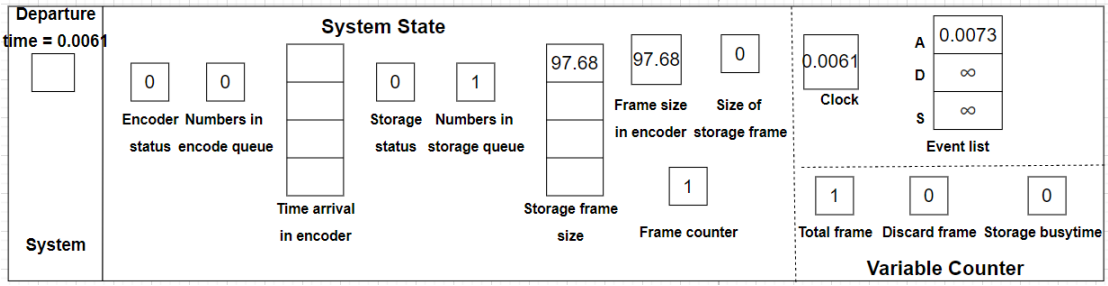


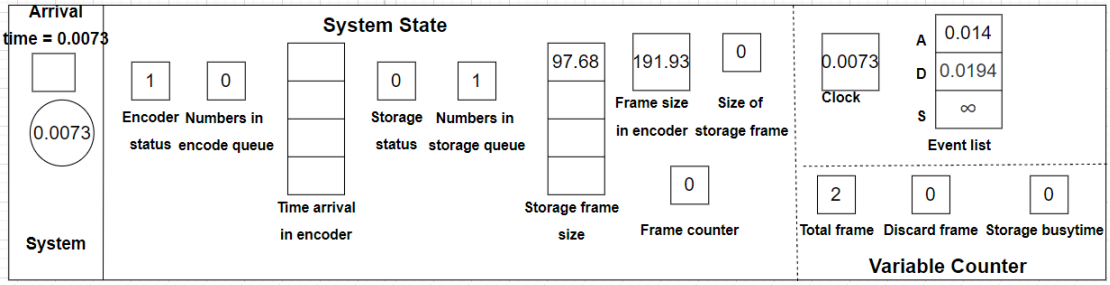
Simulation:

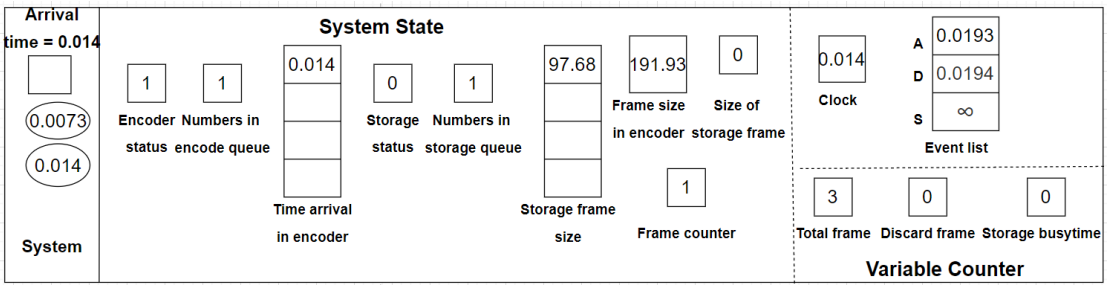
(假設 B = 4)

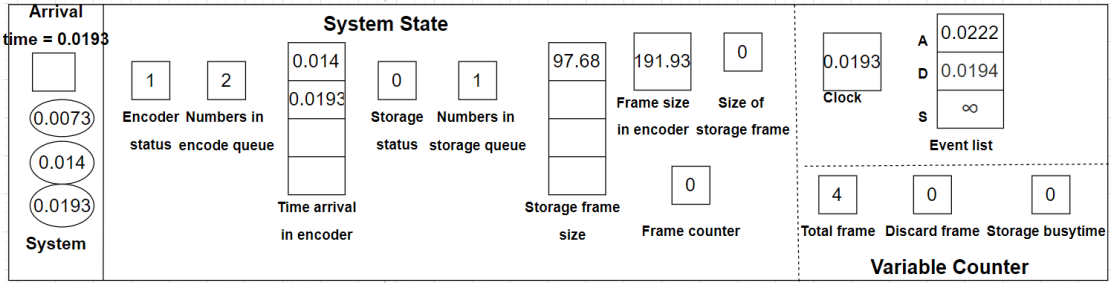


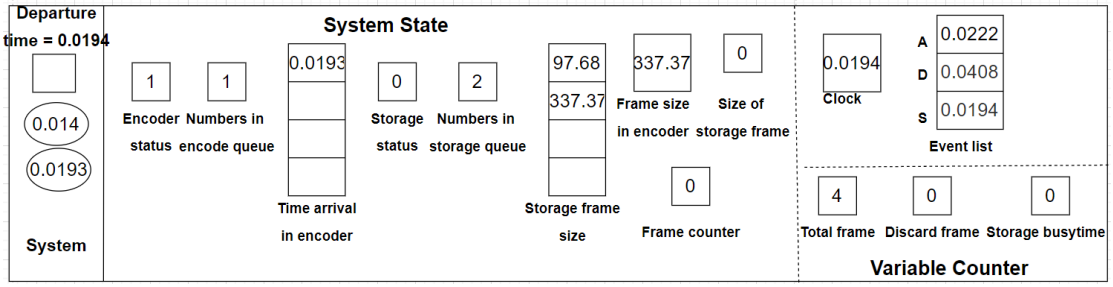

Arrival
time = 0
0
System
System State
1
Encoder status
0
Numbers in encode queue
Time arrival in encoder
0
Storage status
0
Numbers in storage queue
Storage frame size
97.68
Frame size in encoder
0
Size of storage frame
1
Frame counter
0
Clock
A 0.0073
D 0.0061
S ∞
Event list
1
Total frame
0
Discard frame
0
Storage busytime
Variable Counter


Departure
time = 0.0061
System
System State
0
Encoder status
0
Numbers in encode queue
Time arrival in encoder
0
Storage status
1
Numbers in storage queue
97.68
Storage frame size
97.68
Frame size in encoder
0
Size of storage frame
1
Frame counter
0.0061
Clock
A 0.0073
D ∞
S ∞
Event list
1
Total frame
0
Discard frame
0
Storage busytime
Variable Counter

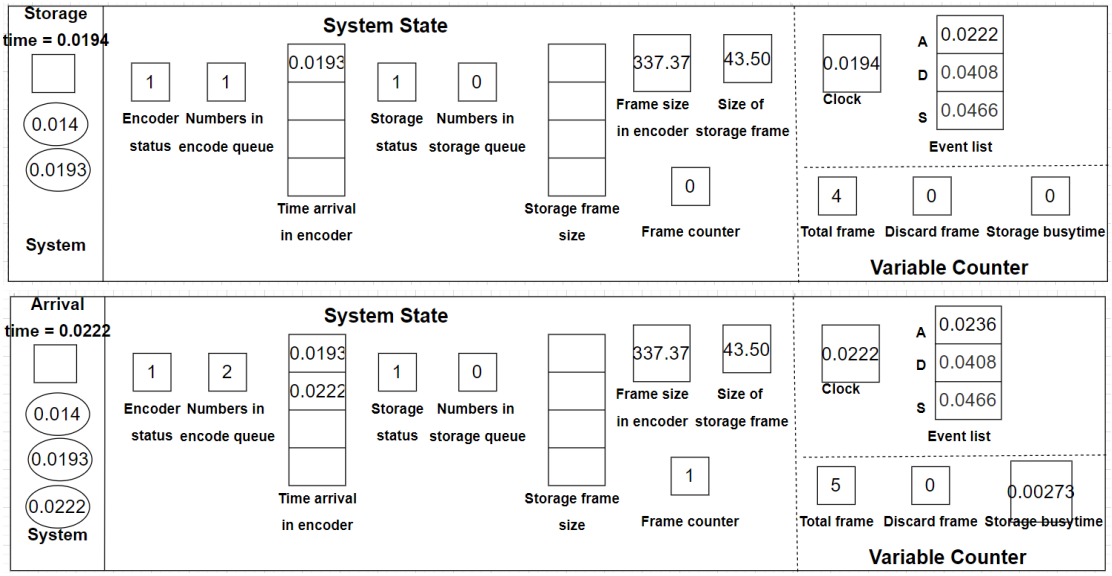

Arrival
time = 0.0073
0.0073
System
System State
1
Encoder status
0
Numbers in encode queue
Time arrival in encoder
0
Storage status
1
Numbers in storage queue
97.68
Storage frame size
191.93
Frame size in encoder
0
Size of storage frame
0
Frame counter
0.0073
Clock
A 0.014
D 0.0194
S ∞
Event list
2
Total frame
0
Discard frame
0
Storage busytime
Variable Counter


Arrival
time = 0.014
0.0073
0.014
System
System State
1
Encoder status
1
Numbers in encode queue
0.014
Time arrival in encoder
0
Storage status
1
Numbers in storage queue
97.68
Storage frame size
191.93
Frame size in encoder
0
Size of storage frame
1
Frame counter
0.014
Clock
A 0.0193
D 0.0194
S ∞
Event list
3
Total frame
0
Discard frame
0
Storage busytime
Variable Counter


Arrival
time = 0.0193
0.0073
0.014
0.0193
System
System State
1
Encoder status
2
Numbers in encode queue
0.014
0.0193
Time arrival in encoder
0
Storage status
1
Numbers in storage queue
97.68
Storage frame size
191.93
Frame size in encoder
0
Size of storage frame
0
Frame counter
0.0193
Clock
A 0.0222
D 0.0194
S ∞
Event list
4
Total frame
0
Discard frame
0
Storage busytime
Variable Counter

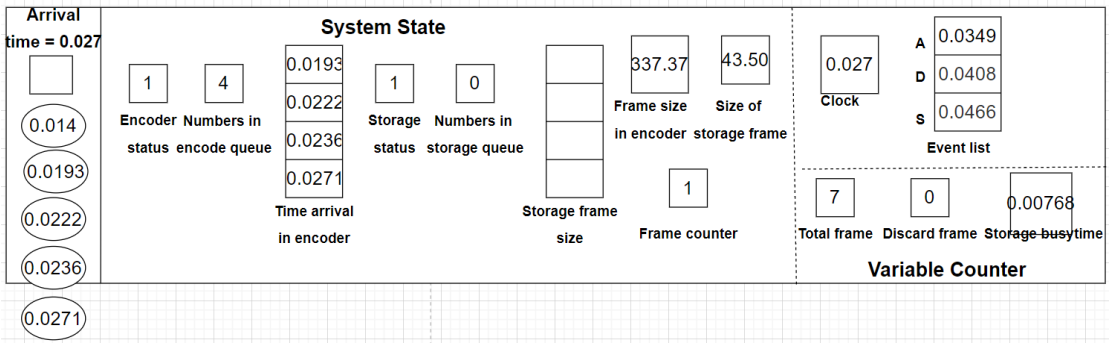

Departure
time = 0.0194
0.014
0.0193
System
System State
1
Encoder status
1
Numbers in encode queue
0.0193
Time arrival in encoder
0
Storage status
2
Numbers in storage queue
97.68
337.37
Storage frame size
337.37
Frame size in encoder
0
Size of storage frame
0
Frame counter
0.0194
Clock
A 0.0222
D 0.0408
S 0.0194
Event list
4
Total frame
0
Discard frame
0
Storage busytime
Variable Counter

Top frame 跟 bottom frame 都進到 storage 的 queue 所以可以開始 storage

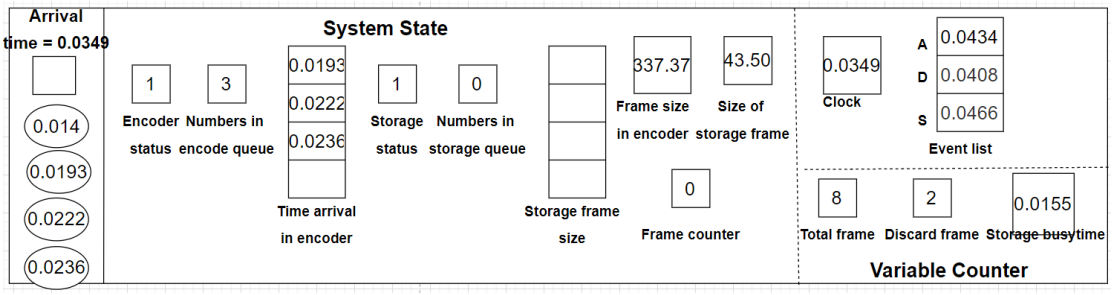


……..

一直到 encoder 的 queue 填滿



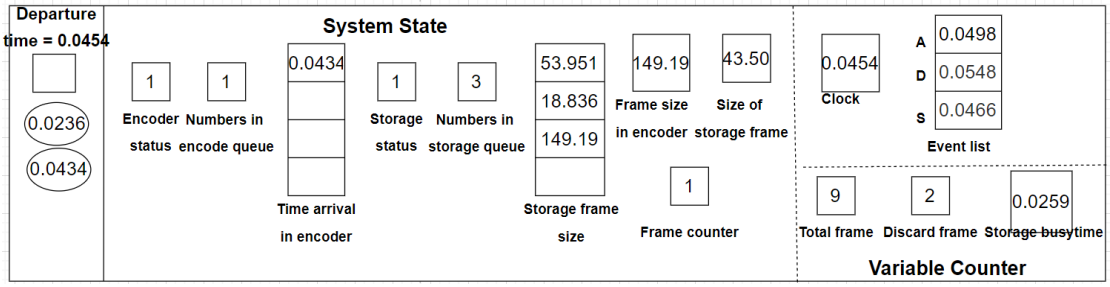
第一種 queue 滿了的 case：Bottom frame 來但是 queue 滿了所以 queue 裡面的 top frame 也要刪



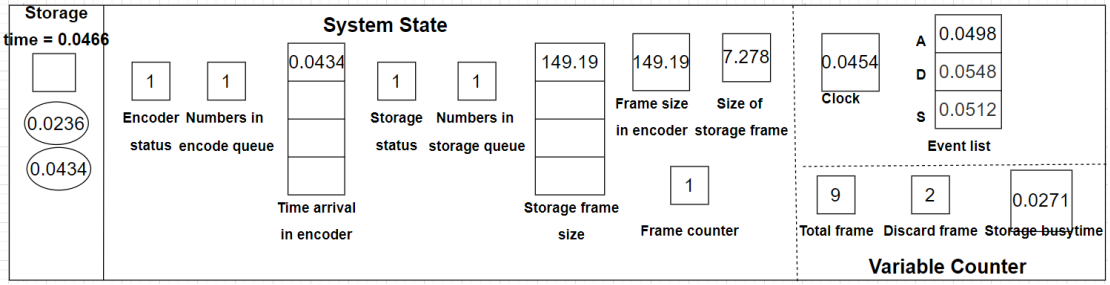
……..

第一個 top, bottom frame Storage 完成

完成前

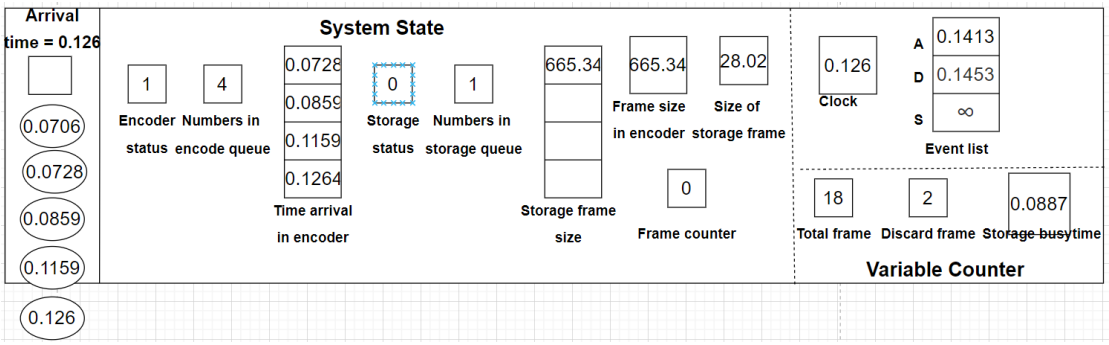


完成後

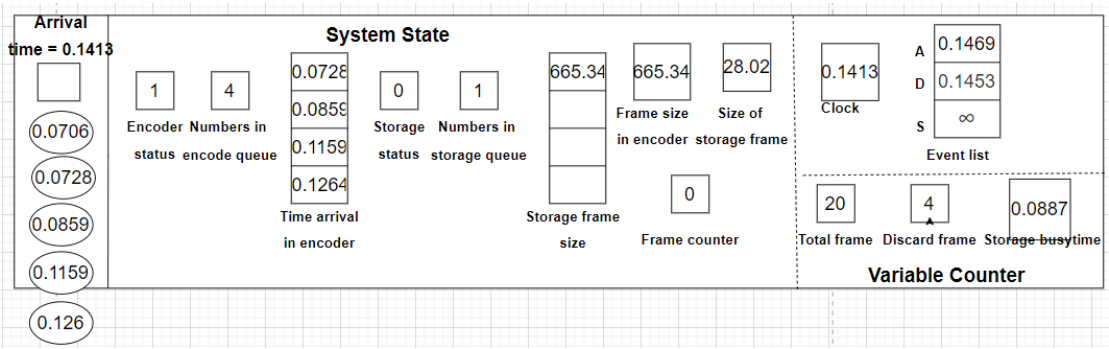


.....

一直到 encoder 的 queue 再一次填滿



第二種 queue 滿了的 case ：top frame 來但是 queue 滿了所以 top frame 要刪，他之後的 bottom frame 也要刪，所以 frame counter 設 0 代表下一個進來的 frame 是新的 top frame



……..一直到結束

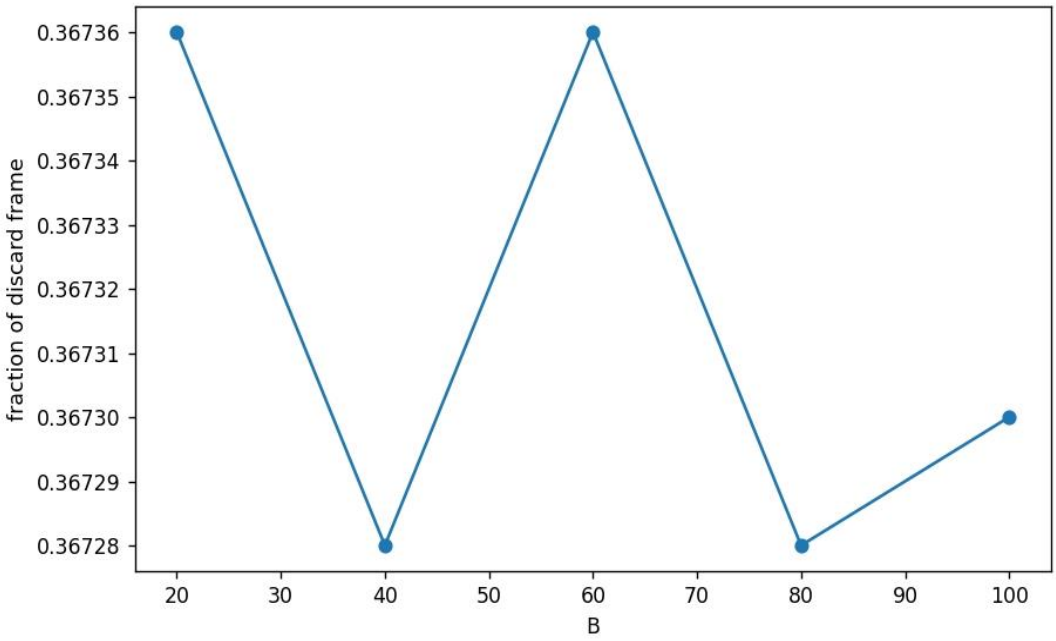
Input parameter:
ENCODE_RATE 15800 fobs / sec
STORAGE_RATE 1600 fobs / sec
STORAGE_QUEUE_FRAME_SIZE[100000000]
END TIME = 28800 sec
ALPHA = 0.1

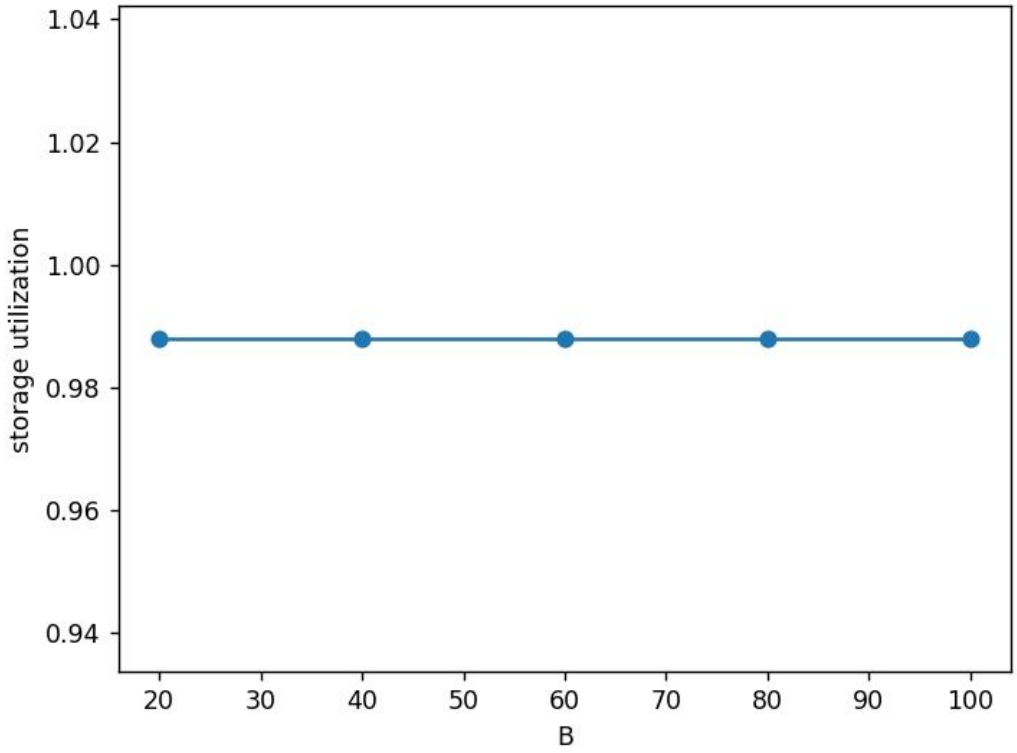
(1)

MEAN_INTERARRIVAL = 0.008 sec

MEAN_SIZEOF_FRAME = 200 fobs

Result:





(2)

MEAN_INTERARRIVAL = 0.004 sec

MEAN_SIZEOF_FRAME = 450 fobs

Result: