

1/1/2025

## Program 2:

Write a program for congestion control using Leaky bucket algorithm.

Observation:

3/1/25  
EXPERIMENT - 14

Write a program for congestion control using leaky bucket problem.

```
import time
import random

NOF_PACKETS = 5

def send_packets(packet_size, output_rate):
    while packet_size > 0:
        sent = min(packet_size, output_rate)
        print(f"Packet of size {sent} transmitted --", end=" ")
        packet_size = sent
        print(f"Bytes remaining to transmit: {packet_size}")
        time.sleep(1)

def main():
    packet_size = [random.randint(0, 99) for _ in range(NOF_PACKETS)]
    for i in range(NO_OF_PACKETS):
        print(f"packet[{i}] = {packet_size[i]} bytes")
    output_rate = int(input("Enter output rate:"))
    for i in range(NO_OF_PACKETS):
        print(f"Transmitting packet size: {packet_size[i]}")
        if packet_size[i] > bucket_size:
```

```

print (f" Incoming packet size ({packet-size}
bytes) is greater than bucket capacity
({bucket-size} bytes) - PACKET REJECTED")
continue

print (f" Bytes remaining to transmit:
{packet-size [i] }")
send_packet (packet-size [i], output-rate)

if __name__ == "__main__":
    main()

```

transmit:

OUTPUT:

```

Enter no of queries: 10
Enter bucket size: 5
Enter input packet size: 4
Enter output packet size: 6
Bucket size = 4 out of bucket size = 5
Bucket size = 2 out of bucket size = 5
Bucket size = 0 out of bucket size = 5
Bucket size = -2 out of bucket size = 5
Bucket size = -4 out of bucket size = 5
Bucket size = -6 out of bucket size = 5
Bucket size = -8 out of bucket size = 5
Bucket size = -10 out of bucket size = 5
Bucket size = -12 out of bucket size = 5
Bucket size = -14 out of bucket size = 5

```

Code:

```

storage=0
noofqueries=int(input("Enter no of queries:"))
bucketsize=int(input("Enter bucket size:"))
inputpktsize=int(input("Enter input packet size:"))
outputpktsize=int(input("Enter output packet size:"))
for i in range(0,noofqueries):
    sizeleft=bucketsize-storage
    if inputpktsize<=sizeleft:
        storage+=inputpktsize
    else:

```

```
    print("Packet loss=", inputpktsize)
    print(f"Bucket size={storage}out of bucket size={bucketsize}")
    storage-=outputpktsize
```

## Output:

```
PS C:\Users\Dell\OneDrive\Desktop\code> python leakybucketalgorithm.py
Enter no of queries:10
Enter bucket size:5
Enter input packet size:4
Enter output packet size:6
Bucket size=4out of bucket size=5
Bucket size=2out of bucket size=5
Bucket size=0out of bucket size=5
Bucket size=-2out of bucket size=5
Bucket size=-4out of bucket size=5
Bucket size=-6out of bucket size=5
Bucket size=-14out of bucket size=5
```