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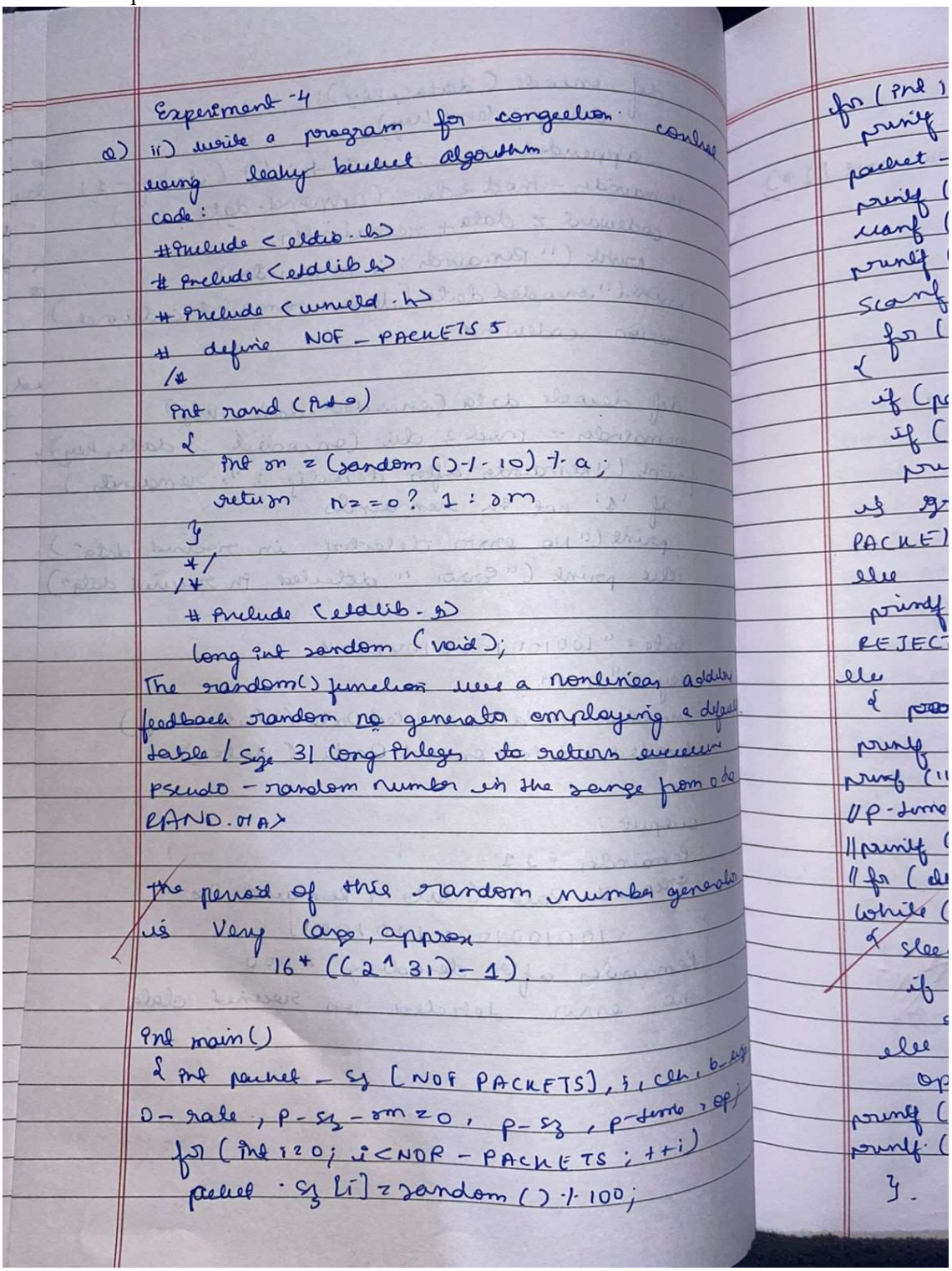
EXPERIMENT-14

Write a program for congestion control using Leaky bucket algorithm.

Code and Output:



for (int i=0; i<NOF_PACKETS; ++i)
printf ("\n packets [%d]: %d bytes \t", i,
packet_sz[i]);
printf ("\n enter the output rate :");
scanf ("%d", &o_rate);
printf ("enter the bucket_size :");
scanf ("%d", &b_size);
for (i=0; i<NOF_PACKETS; ++i)
{
if (packet_sz[i] + p_sz_sm) > b_size)
if (packet_sz[i] > b_size)
print ("\n\n Incoming packet size (%d bytes)
is greater than bucket capacity (%d bytes)
PACKET REJECTED", packet_sz[i], b_size);
else
printf ("\n\n\n bucket capacity exceeded. PACKET
REJECTED!!\n");
else
{ p_sz_sm += packet_sz[i];
printf ("\n\n Incoming packet size : %d", packet_sz[i]
printf ("\n\n Bytes remaining to transmit: %d", p_sz_sm);
// p_time = random() % 10;
// printf ("\n Time left for transmission: %d units", p_time);
// for (clk=10; clk<=p_time; clk++)
while (p_sz_sm > 0)
{ sleep(1);
if (p_sz_sm <= o_rate)
op = p_sz_sm, p_sz_sm = 0;
else
op = o_rate; p_sz_sm -= o_rate;
printf ("\n Packet of size %d transmitted", op);
printf ("\n\t\t bytes remaining to transmit: %d",
p_sz_sm);
}

```
else
{
  printf("\n no packets to transmit !!\n");
}
}
}
}
}
```

output:

packet [0] : 83 bytes
packet [1] : 86 bytes
packet [2] : 77 bytes
packet [3] : 15 bytes
packet [4] : 93 bytes
enter the output rate = 30
enter the bucket size = 35

incoming packet size : 83
bytes remaining for transmit: 83
packets of size 30 transmitted ....
bytes remaining to transmit : 53
packets of size 30 transmitted ...
Bytes remains to transmit : 23
packets of size 23 transmitted ...
Bytes remains to transmit = 0

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code:

```
capacity = 10
input_size = 4
out_size = 1
storage = 0
iterations = 4

for i in range(0,iterations):
    size_left = capacity - storage
    if input_size <= size_left:
        storage += input_size
    else:
        print("Packet lost: ",input_size)
    print(f"Buffer size = {storage} out of capacity {capacity}")
    storage -= 1
```

Output: