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Experiment: 2

write a program for congestion control using leaky Bucket algorithm.

```
#include <stdio.h>
int main()
{ int incoming, outgoing, buck_size, n,
 store =0;
 printf ("Enter bucket size :");
 scanf("%d",&buck_size);
printf ("Enter outgoing size :");
scanf ("%d", &outgoing);
 printf ("Enter number of inputs :");
  scanf("%d",&n);
while( n!=0)
 { printf ("Enter the incoming bucket size:");
scanf ("%d",& incoming);
 if (incoming<=( buck_size - store))
 { store +=incoming;
 printf("Bucket buffer size %d out of
 \n", store, buck_size);
 }
else
 { printf(" Dropped %d no of packets \n",
   incoming-(buck_size - store));
 printf("Bucket buffer size %d out of
    %d \n", store buck_size);
    store =buck_size; }
 store =store - outgoing;
printf("After outgoing %d packets left out of
  %d in buffer \n", store, buck_size);
  n--; } }
```

Output:

Enter bucket size: 5000
Enter outgoing rate: 2000
Enter number of inputs: 2
Enter the incoming packet size: 3000
Bucket buffer size 3000 out of 5000
After outgoing 1000 packets left out of 5000 in buffer
Enter the incoming packet size: 1000
Bucket buffer size 2000 out of 5000
After outgoing 0 packets left out of 5000 in buffer.

case 2 :

Enter the bucket size: 1000
Enter the outgoing size: 500
Enter the number of inputs: 1
2000 Enter impossible the incoming bucket size: 2000
3000 not ~~Bucket buffer size 0 out of 2000~~
~~. dropped 1000 no~~ of packets.
Encoming packet size 2000
Dropped 1000 no of packets.
Bucket buffer size 0 out of 1000
After outgoing 500 packets left out of 1000 in buffer.

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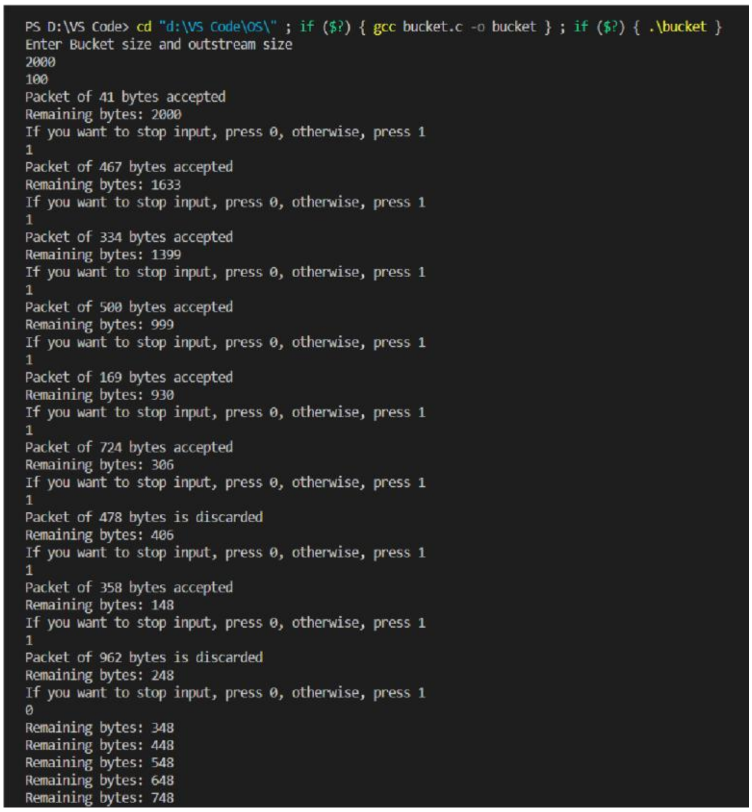
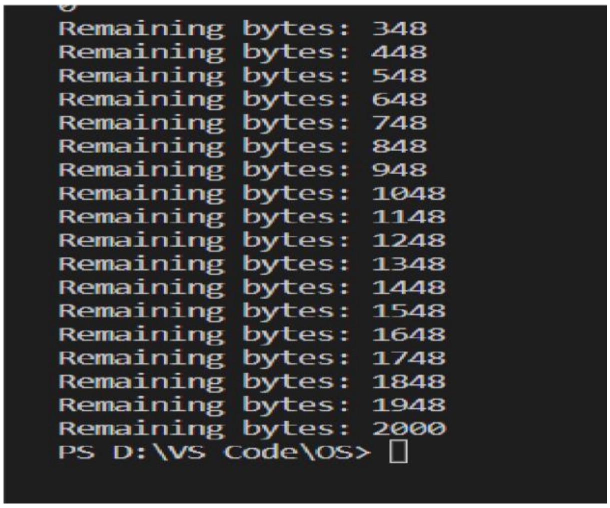
CODE:

```
#include <stdio.h>

#include <stdlib.h> // Include this for the rand() function int main()

{

    int buckets, outlets, k = 1, num, remaining; printf("Enter Bucket
    size and outstream size\n"); scanf("%d %d", &buckets, &outlets);
    remaining = buckets; while (k)

    {

        num = rand() % 1000; // Generate a random number between 0 and

999 if (num < remaining)

        {

            remaining = remaining - num; printf("Packet of %d bytes accepted\n", num); // Added
            missing

variable
        }
        else
        {

            printf("Packet of %d bytes is discarded\n", num);

        }

        if (buckets - remaining > outlets)

        {

            remaining += outlets; // Fixed the calculation

        }
        else

            remaining = buckets; printf("Remaining bytes: %d \n",
        remaining); printf("If you want to stop input, press 0,
        otherwise, press 1\n"); scanf("%d", &k);

    }

    while (remaining < buckets) // Fixed the condition

    {

        if (buckets - remaining > outlets)

        {

            remaining += outlets; // Fixed the calculation

        }
        else
            remaining = buckets;
        printf("Remaining bytes: %d \n", remaining);
    }
    return 0; // Added a return statement to indicate successful completion
}
```



```
PS D:\VS Code> cd "d:\VS Code\OS\" ; if ($?) { gcc bucket.c -o bucket } ; if ($?) { .\bucket }
Enter Bucket size and outstream size
2000
100
Packet of 41 bytes accepted
Remaining bytes: 2000
If you want to stop input, press 0, otherwise, press 1
1
Packet of 467 bytes accepted
Remaining bytes: 1633
If you want to stop input, press 0, otherwise, press 1
1
Packet of 334 bytes accepted
Remaining bytes: 1399
If you want to stop input, press 0, otherwise, press 1
1
Packet of 500 bytes accepted
Remaining bytes: 999
If you want to stop input, press 0, otherwise, press 1
1
Packet of 169 bytes accepted
Remaining bytes: 930
If you want to stop input, press 0, otherwise, press 1
1
Packet of 724 bytes accepted
Remaining bytes: 306
If you want to stop input, press 0, otherwise, press 1
1
Packet of 478 bytes is discarded
Remaining bytes: 406
If you want to stop input, press 0, otherwise, press 1
1
Packet of 358 bytes accepted
Remaining bytes: 148
If you want to stop input, press 0, otherwise, press 1
1
Packet of 962 bytes is discarded
Remaining bytes: 248
If you want to stop input, press 0, otherwise, press 1
0
Remaining bytes: 348
Remaining bytes: 448
Remaining bytes: 548
Remaining bytes: 648
Remaining bytes: 748
```



```
0
Remaining bytes: 348
Remaining bytes: 448
Remaining bytes: 548
Remaining bytes: 648
Remaining bytes: 748
Remaining bytes: 848
Remaining bytes: 948
Remaining bytes: 1048
Remaining bytes: 1148
Remaining bytes: 1248
Remaining bytes: 1348
Remaining bytes: 1448
Remaining bytes: 1548
Remaining bytes: 1648
Remaining bytes: 1748
Remaining bytes: 1848
Remaining bytes: 1948
Remaining bytes: 2000
PS D:\VS Code\OS> 
```