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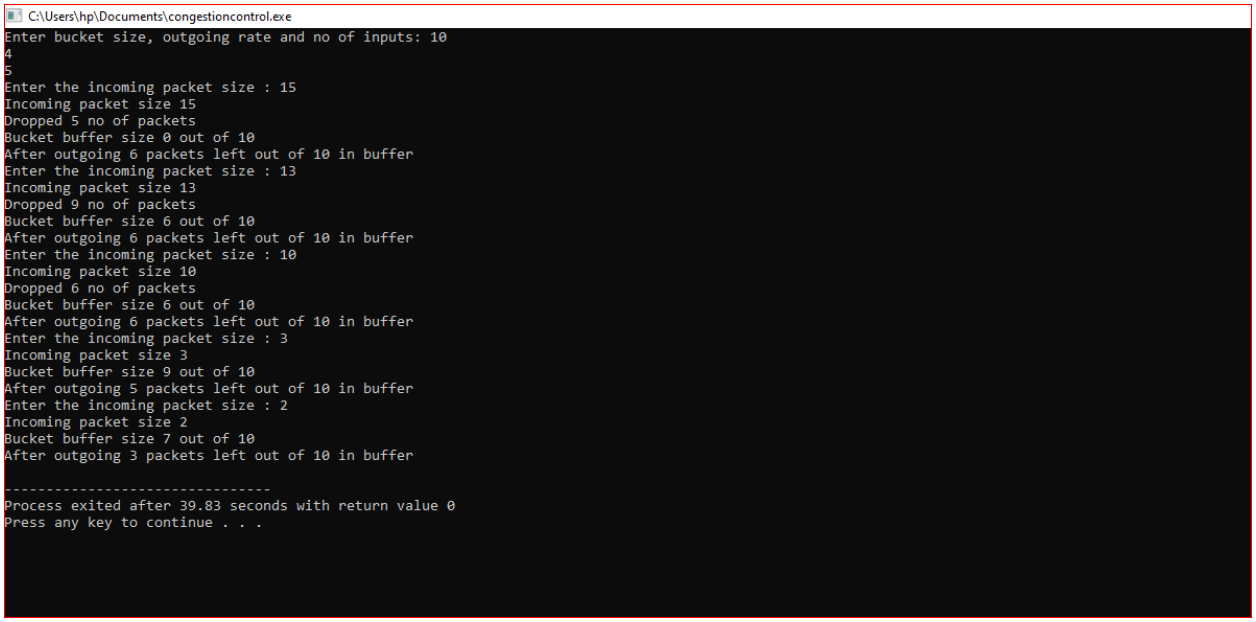
1)Design a C program for congestion control using leaky bucket algorithm.

```
#include<stdio.h>

int main(){
    int incoming, outgoing, buck_size, n, store = 0;
    printf("Enter bucket size, outgoing rate and no of inputs: ");
    scanf("%d %d %d", &buck_size, &outgoing, &n);

    while (n != 0) {
        printf("Enter the incoming packet size : ");
        scanf("%d", &incoming);
        printf("Incoming packet size %d\n", incoming);
        if (incoming <= (buck_size - store)){
            store += incoming;
            printf("Bucket buffer size %d out of %d\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:


C:\Users\hp\Documents\congestioncontrol.exe
Enter bucket size, outgoing rate and no of inputs: 10
4
5
Enter the incoming packet size : 15
Incoming packet size 15
Dropped 5 no of packets
Bucket buffer size 0 out of 10
After outgoing 6 packets left out of 10 in buffer
Enter the incoming packet size : 13
Incoming packet size 13
Dropped 9 no of packets
Bucket buffer size 6 out of 10
After outgoing 6 packets left out of 10 in buffer
Enter the incoming packet size : 10
Incoming packet size 10
Dropped 6 no of packets
Bucket buffer size 6 out of 10
After outgoing 6 packets left out of 10 in buffer
Enter the incoming packet size : 3
Incoming packet size 3
Bucket buffer size 9 out of 10
After outgoing 5 packets left out of 10 in buffer
Enter the incoming packet size : 2
Incoming packet size 2
Bucket buffer size 7 out of 10
After outgoing 3 packets left out of 10 in buffer

Process exited after 39.83 seconds with return value 0
Press any key to continue . . .