

WEEK 14

Write a program for congestion control using Leaky bucket algorithm.

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
}

```

OUTPUT:

```

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

```

```

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>

```

OBSERVATION:

```

write a program for congestion control using leaky bucket
#include <stdio.h>
#define Capacity 50

void main()
{
    int TL=10, bc=0, OL=5;
    while (TL < 20)
    {
        int NP;
        printf("Enter Packet Size: ");
        scanf("%d", &NP);
        if (NP < Capacity)
        {
            bc += NP;
            printf("In bucket Capacity Currently: %d, bc:", bc);
            bucket bc -= OL;
            printf("In Bucket Capacity after output: %d", bc);
            TL++;
        }
        else if (NP > Capacity || (NP + bc) > Capacity)
        {
            printf("In new packet can't be added to bucket");
            bc -= OL;
            printf("In bucket Capacity after output: %d", bc);
        }
        else if (bc < 0)
        {
            bc = 0;
            printf("In bucket Capacity after OL: %d", bc);
            TL++;
        }
        exit(0);
    }
}

```

Output:

Enter Packet size & buffer size
1000 250

Enter Packet size: 5000

Packet dropped

Continue Transmission?

1

Enter Packet size: 1000

Packet size 1000 sent

Continue Transmission? : 1

Enter Packet size

3000

Packet size 3000 sent

Enter Packet size

750

Packet 750 dropped:

Continue transmission 0

NA
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