

## Cycle - 2

### (Experiment - 2)

#### Question:

Write a program for congestion control using Leaky bucket algorithm.

#### Program:

```
#include <stdio.h>
#include <stdlib.h>
struct packet
{
    int time;
    int size;
} p[50];

int main()
{
    int i, n, m, k = 0;
    int bsize, bfilled, outrate;
    printf("Enter the number of packets:");
    scanf("%d", &n);
    printf("Enter packets in the order of their arrival time\n");
    for (i = 0; i < n; i++)
    {
        printf("Enter the time and size:");
        scanf("%d%d", &p[i].time, &p[i].size);
    }
    printf("Enter the bucket size:");
    scanf("%d", &bsize);
    printf("Enter the output rate:");
    scanf("%d", &outrate);

    m = p[n - 1].time;
    i = 1;
    k = 0;
    bfilled = 0;
    while (i <= m || bfilled != 0)
    {
        printf("\n\nAt time %d", i);

        if (p[k].time == i)
        {
            if (bsize >= bfilled + p[k].size)
            {
                bfilled = bfilled + p[k].size;
                printf("\n%dbyte packet is inserted", p[k].size);
                k = k + 1;
            }
            else
            {
                printf("\n%dbyte packet is discarded", p[k].size);
                k = k + 1;
            }
        }

        i++;
    }

    if (bfilled == 0)
    {
        printf("\nNo packets to transmit");
    }
    else if (bfilled >= outrate)
    {
        bfilled = bfilled - outrate;
        printf("\n%dbytes transfered", outrate);
    }
}
```

```

else
{
    printf("\n%dbytes transfered", bfilled);
    bfilled = 0;
}
printf("\nPackets in the bucket %d byte", bfilled);
i++;
}
return 0;
}

```

## Output:

```

C:\Users\Acer\Desktop\Notes (4th Semester)\Labs\Computer Networks (CN)\Cycle 2\Experiment - 2>
gcc Leaky_Bucket.c

C:\Users\Acer\Desktop\Notes (4th Semester)\Labs\Computer Networks (CN)\Cycle 2\Experiment - 2>
a
Enter the number of packets:2
Enter packets in the order of their arrival time
Enter the time and size:1 5
Enter the time and size:3 8
Enter the bucket size:10
Enter the output rate:6

At time 1
5byte packet is inserted
5bytes transfered
Packets in the bucket 0 byte

At time 2
No packets to transmitt
Packets in the bucket 0 byte

At time 3
8byte packet is inserted
6bytes transfered
Packets in the bucket 2 byte

At time 4
2bytes transfered
Packets in the bucket 0 byte

```