

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

```

```

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> 

```

Observation:

17/08/23

Lab - 14.

Aim: Write a program for congestion control using leaky bucket algorithm.

Code:

```
#include <stdio.h>
```

```
void main() {
```

```
    int buckets, outlets, K=1, num, remaining;
```

```
    printf("Enter Bucket Size & outstream size\n");
```

```
    scanf("%d %d", &buckets, &outlets);
```

```
    remaining = buckets;
```

```
    while (K) {
```

```
        num = rand() % 1000;
```

```
        if (num < remaining) {
```

```
            remaining = remaining - num;
```

```
            printf("Packet of %d bytes accepted\n", num);
```

```
        }
```

```
        else
```

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

```
            if (buckets - remaining > outlets)
```

```
                remaining += outlets;
```

```
        else
```

```
            remaining = buckets;
```

```
        printf("Remaining bytes: %d\n", remaining);
```

```
        printf("If you want to stop input. press 0, otherwise, any\n");
```

```
        scanf("%d", &K);
```

```
    }
```

```
    while (remaining < buckets) {
```

```
        if (buckets - remaining > outlets.
```

```
            remaining += outlets;
```

```
        else
```


buckets

```
remaining = buckets;  
printf("Remaining bytes: %d\n", remaining);  
}  
}
```

Output:

Enter Bucket Size & outstream size 2000 100.

Packet of 41 bytes accepted.

Remaining bytes: 2000.

If you want to stop input, press 0, otherwise, press 1.

Packet of 467 bytes accepted. 1

Packet of 334 bytes accepted

Remaining bytes: 1399. 0.

Remaining bytes: 1499

Remaining bytes: 1599

Remaining bytes: 1699

Remaining bytes: 1799

Remaining bytes: 1899

Remaining bytes: 1999

Remaining bytes: 2000.

~~ALP~~
19/8/2023