Week 14

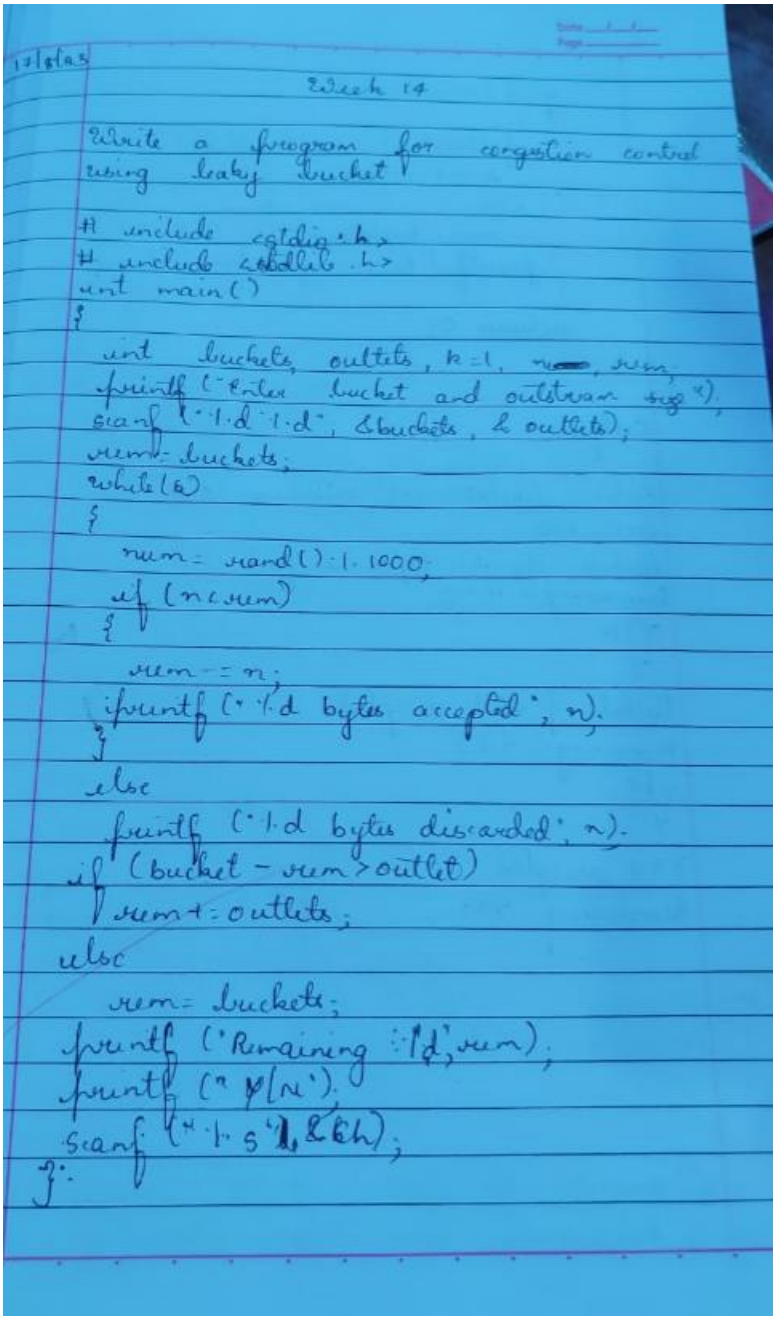
Write a program for congestion control using Leaky bucket algorithm.

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
}
```

Observation :



```
while (sum<buckets)
{
    if (buckets - sum > outlets)
        sum=outlets;
    else
        sum= buckets;
}printf("Remaining bytes : %d", sum);
return 0;
}
```

24/9/23

Output

Enter bucket and outstream size
1000 200
Packets of 41 bytes accepted
Remaining: 1000
Y/N
Y
Packet of 467 accepted
Remaining 733
Y/N
Y
334 accepted
Remaining : 599

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
```