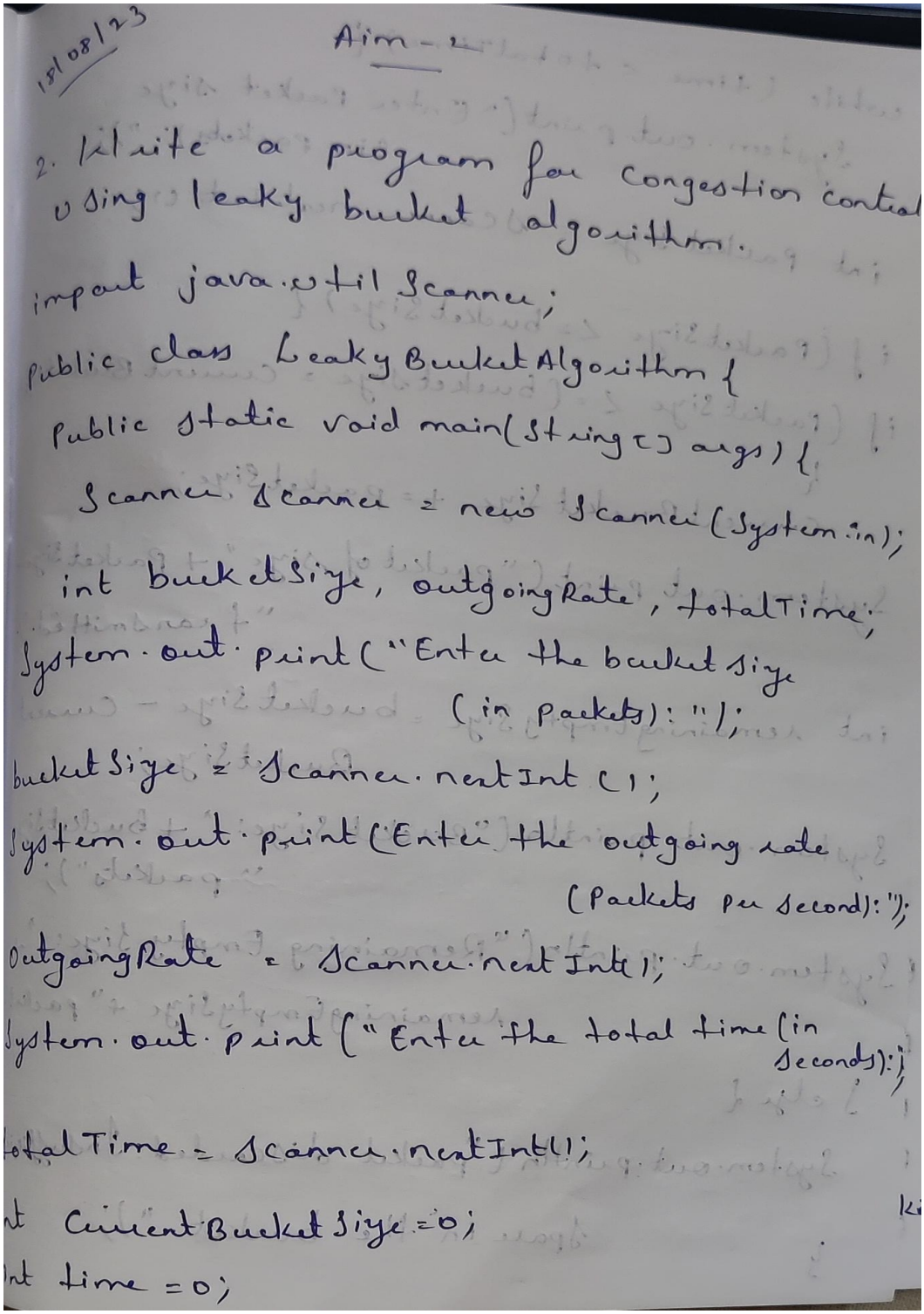
Aim-14

14. Write a program for congestion control using Leaky bucket algorithm.

Code:



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Aim - 14

2. Write a program for congestion control using leaky bucket algorithm.

```
import java.util.Scanner;
Public class LeakyBucketAlgorithm {
 Public static void main(String[] args) {
  Scanner Scanner = new Scanner(System.in);
  int bucketSize, outgoingRate, totalTime;
System.out.print("Enter the bucket size
                    (in packets): ");
bucketSize = Scanner.nextInt();
System.out.print(Enter the outgoing rate
                    (Packets per second): ");
OutgoingRate = Scanner.nextInt();
System.out.print("Enter the total time (in
                    seconds): ");
otalTime = Scanner.nextInt();
nt CurrentBucketSize=0;
nt time=0;
```

```
while (time < totalTime) {
    System.out.print("Enter Packet Size
                        (in Packets): ");
    int PacketSize = Scanner.nextInt();

    if (PacketSize <= bucketSize) {
    if (PacketSize <= (bucketSize - currentBucketSize))
        {
        currentBucketSize += packetSize;

    System.out.print("packet of size" + PacketSize +
                        "transmitted.");
    int remainingEmptySize = bucketSize - Current
                        BucketSize;
    System.out.println("Bucket Size:" + BucketSize +
                        "packets");
    System.out.println("Remaining Empty Size:" +
                        remainingEmptySize + "packets");
    } else {
        System.out.println("packet discarded: Insufficient
                        Space in the bucket.");
    }
```

```
} else {
    System.out.println("Packet discarded: Exceeds
                        the bucket size.");
}
time++;
}
scanner.close();
}
}
```

Output 1:

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```
Enter the bucket size (in packets): 5
Enter the outgoing rate (Packets per second): 2
Enter the total time (in seconds): 5
Enter the packet size (in packets): 3
Packet of size 3 transmitted. Bucket size: 5
                                packets
Remaining Empty size: 2 packets
Enter packet size (in packets): 10
Packet discarded: Exceeds the bucket size.
Enter packet size (in packets): 3
Packet discarded: Insufficient space in the bucket
```

Enter packet size (in packets): 2

packets of size 2 transmitted.

Bucket size: 5 packets

Remaining Empty size = 0 packets.

Output 2:

Enter the bucket size (in packets): 10

Enter the outgoing rate (packets per second): 2

Enter the total time (in seconds): 5

Enter packet size (in packets): 3

Packet of size 3 transmitted

Bucket size: 10 packets

Remaining Empty size: 7 packets

Enter packet size (in packets): 5

Packet of size 5 transmitted

Bucket size: 10 packets

Remaining Empty size: 2 packets

Enter packet size (in packets): 4

packet discarded: Insufficient space in the bucket

Enter packet size (in packets): 12

packet discarded: Exceeds the bucket size

Enter packet size (in packets): 2

Packet of size 2 transmitted.

Bucket size = 10 packets

Remaining Empty Size: 0 packets.

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Output:

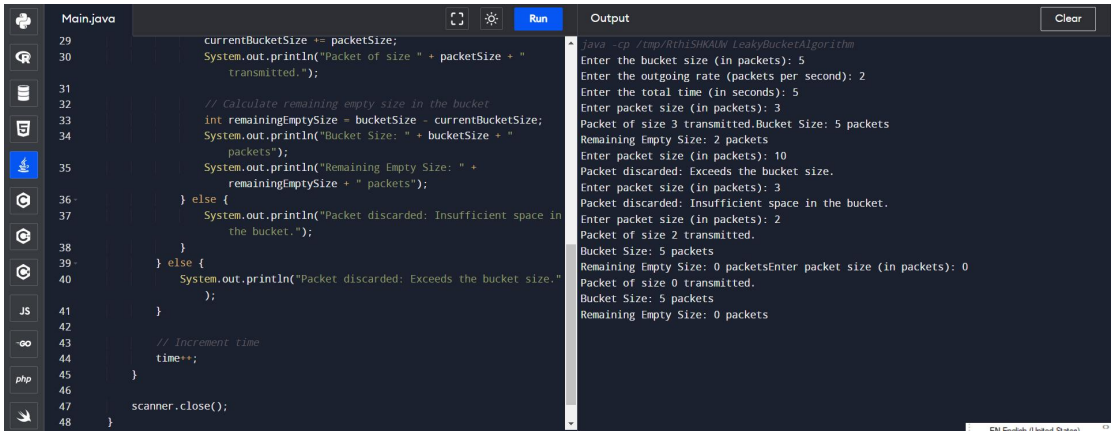

Fig1: Output 1

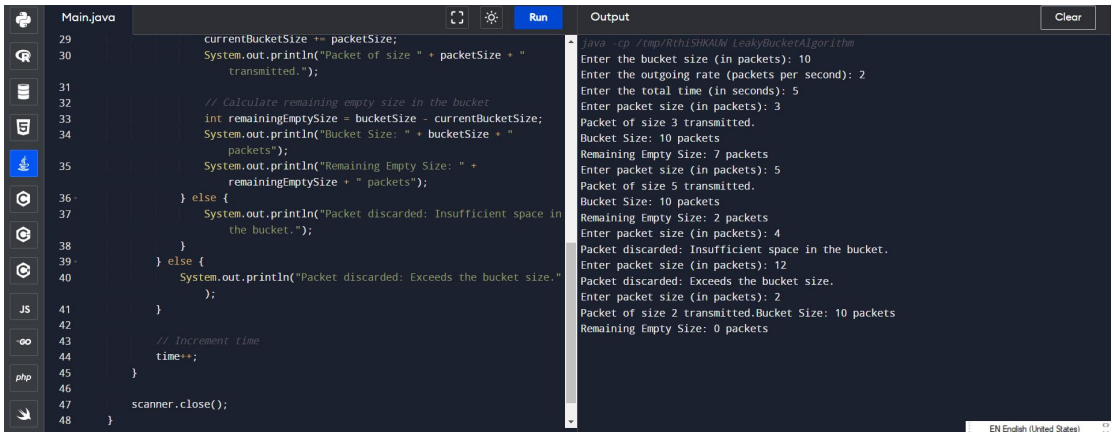

Fig 2: Output 2