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Summary:
In this lab4, for the original input file below, from time 0 to time1, total packet is 3, from time 1 to time 2, the total packet is 4. In this way, the sum in the 9 seconds is 18. The average transmission rate is by averaging the number of packets inside each time slot. So the average is 2packets/ seconds.At a transmission rate of 2 packets/second, each time slot would be 0.5 seconds.

for the extra input file below, the sum packets in the 11 seconds is 22. The average transmission rate is by averaging the number of packets inside each time slot. So the average is 2 packets per second.At a transmission rate of 2 packets/second, each time slot would be 0.5 seconds.

Compilation Steps on terminal:

```
1. g++ -o STDM STDM.cpp
```

Executing Steps:

```
1. ./STDM input.txt
2. (extra credit)./STDM input2.txt(The number of input sources
is not deterministic in the input file)
```

Executing Results:

```
➜  Biao_Ye_lab4 git:(master) ✗ ./STDM input.txt
SF
4, 0.0 1.0 E1
1, 1.0 1.5 B1
0, 1.5 2.0 A1
1, 2.0 2.5 B2
0, 2.5 3.0 A2
2, 3.0 3.5 C1
0, 3.5 4.0 A3
2, 4.0 4.5 C2
2, 4.5 5.0 C3
4, 5.0 6.0 E2
3, 6.0 6.5 D1
0, 6.5 7.0 A4
3, 7.0 7.5 D2
2, 7.5 8.0 C4
2, 8.0 8.5 C5
3, 8.5 9.0 D3
EF
```

Executing Results(extra credit):

input2.txt

```
1   SourceA:0 1 A1,1 2 A2,2 3 A3,5 6 A4
2   SourceB:0 1 B1,1 2 B2
3   SourceC:1 2 C1,2 3 C2,3 4 C3,5 6 C4,6 7 C5
4   SourceD:4 5 D1,5 6 D2,8 9 D3
5   SourceE: 0 2 E1,4 6 E2
6   SourceF:1 2 F1,6 7 F2
7   SourceG:9 10 G1
8   SourceH:10 11 H1
9   E F G H B A D C
```

```
→  Biao_Ye_lab4 git:(master) ✗ ./STDM input2.txt
SF
4, 0.0 1.0 E1
1, 1.0 1.5 B1
0, 1.5 2.0 A1
5, 2.0 2.5 F1
1, 2.5 3.0 B2
0, 3.0 3.5 A2
2, 3.5 4.0 C1
0, 4.0 4.5 A3
2, 4.5 5.0 C2
2, 5.0 5.5 C3
4, 5.5 6.5 E2
3, 6.5 7.0 D1
0, 7.0 7.5 A4
3, 7.5 8.0 D2
2, 8.0 8.5 C4
5, 8.5 9.0 F2
2, 9.0 9.5 C5
3, 9.5 10.0 D3
6, 10.0 10.5 G1
7, 10.5 11.0 H1
EF
```