CS-342 Computer Networks Assignment 04

Group No. **61**
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Application No. **01**

Part 2.

Size of the packet chosen : 1.3 KB (1.3 * 1024 Bytes).
No of such packets chosen : 1000000
Comparing TCP Hybla, TCP Westwood+, and TCP YeAH-TCP Performances.
Around 1-2 mins were allotted for execution.
Plots of Congestion Window, Throughput, Goodput observed are mentioned below.

Q. How to run the q2.cc file?
- Put the q2.cc file in the scratch directory in the ns3.32 directory. Run the following command in ns3.32 directory to execute the file
  $ ./waf --run scratch/q2
- Firstly TCP-YeAH is started then after some time other 2 TCP flows are started.
- The following output is generated:

Observations:

1. **TCP HYBLA**

   TCP Hybla flow (102.115.2.1 -> 102.115.6.1)
   Total Packet Loss : 90
   Packet Lost due to Buffer Overflow : 0
   Packet Lost due to Congestion : 90
   Maximum throughput (in kbps) : 292.970529
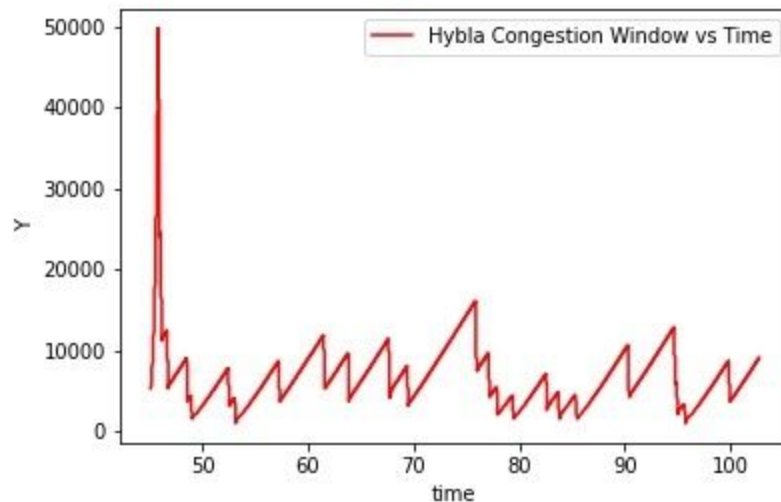   **Total Packets transmitted : 1000000**
   Packets Successfully Transferred : 999910
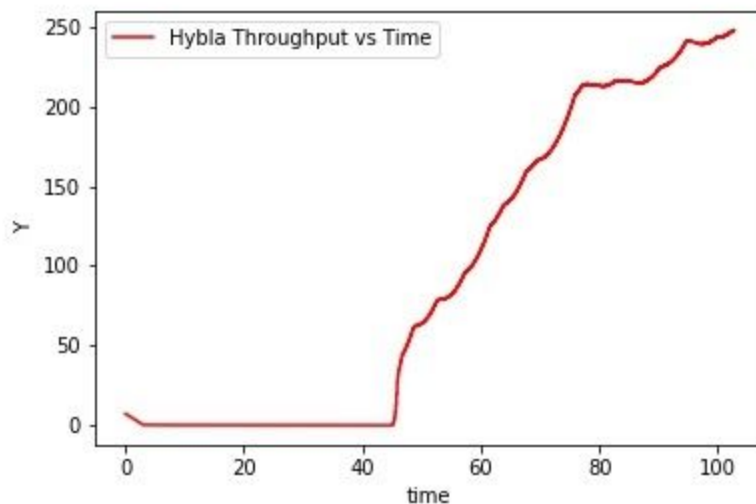   **Percentage of packet loss (total) : 0.009000**
   Percentage of packet loss (due to Buffer Overflow) : 0.000000
   Percentage of packet loss (due to Congestion) : 0.009000

   A. Congestion Window v/s Time

   B. ThroughPut v/s Time

C. GoodPut v/s Time

2. TCP WestWood+

TCP Westwood+ flow (102.115.3.1 -> 102.115.7.1)
Total Packet Loss : 85
Packet Lost due to Buffer Overflow : 0
Packet Lost due to Congestion : 85
Maximum throughput (in kbps) : 286.093917
Total Packets transmitted : 1000000
Packets Successfully Transferred : 999915
Percentage of packet loss (total) : 0.008500
Percentage of packet loss (due to Buffer Overflow) : 0.000000
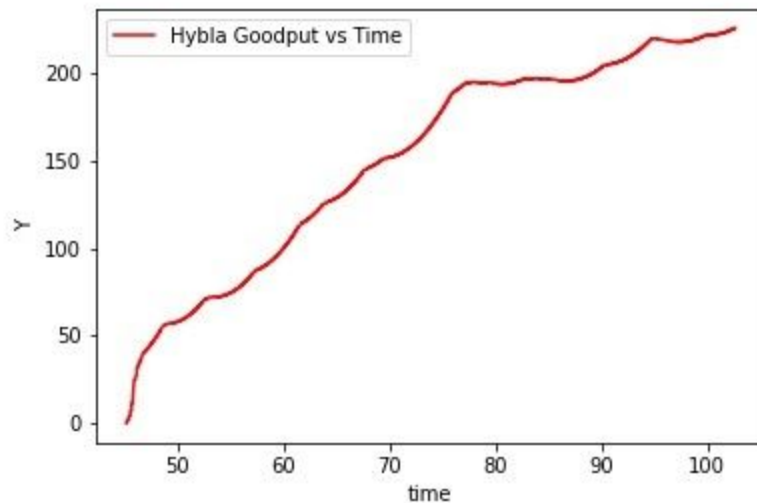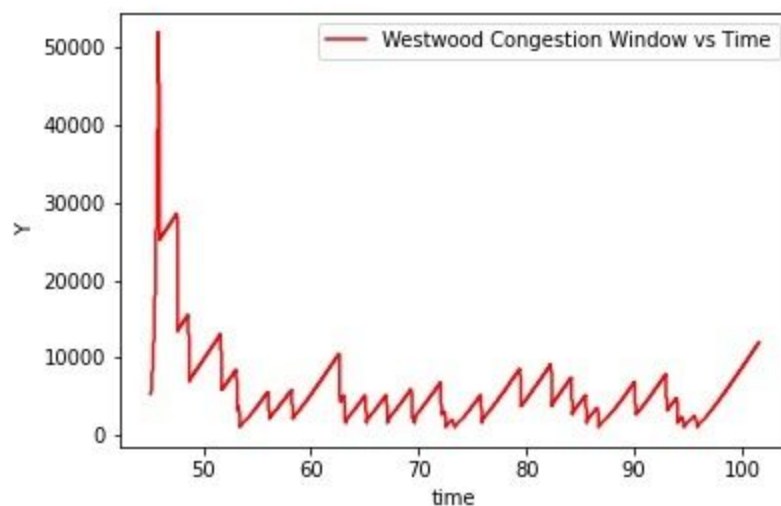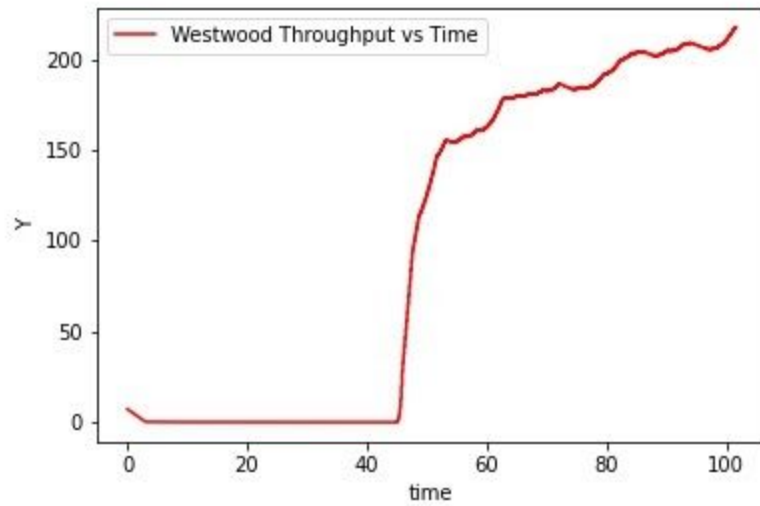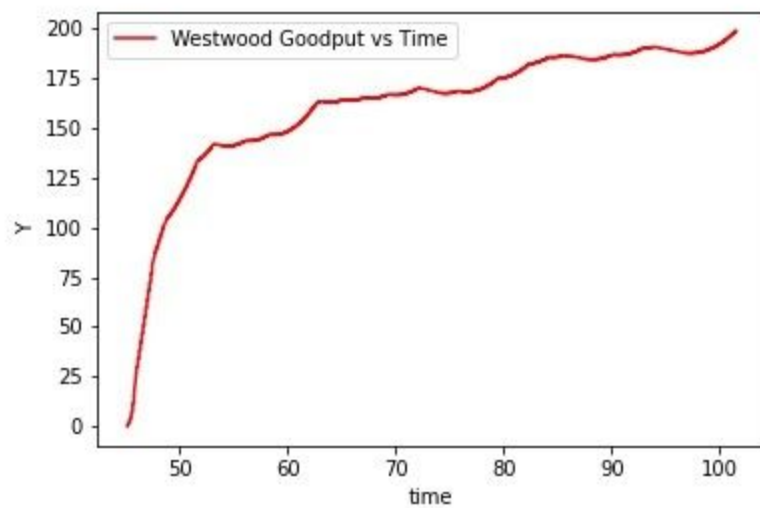**Percentage of packet loss (due to Congestion) : 0.008500**

A. Congestion Window v/s Time

B. ThroughPut v/s Time

Westwood Throughput vs Time

C. GoodPut v/s Time

Westwood Goodput vs Time

3. TCP YeAH-TCP

TCP Yeah flow (102.115.1.1 -> 102.115.5.1)
Total Packet Loss : 99
Packet Lost due to Buffer Overflow : 0
Packet Lost due to Congestion : 99
Maximum throughput (in kbps) : 856.937894
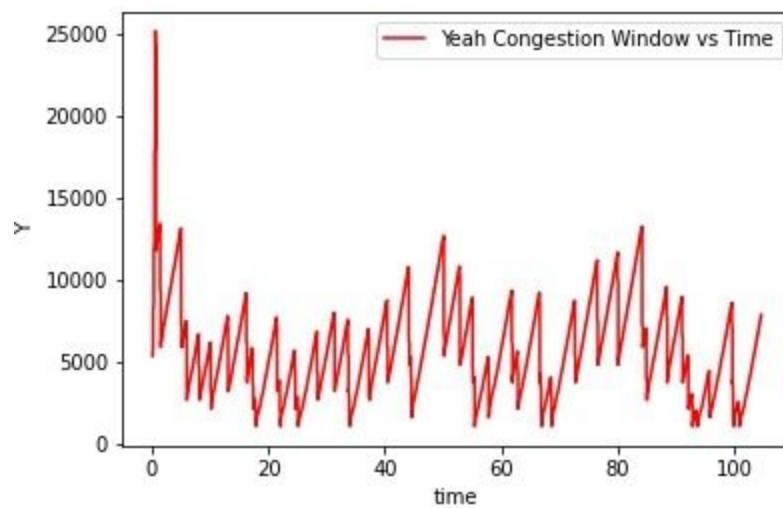**Total Packets transmitted : 1000000**
Packets Successfully Transferred : 999901
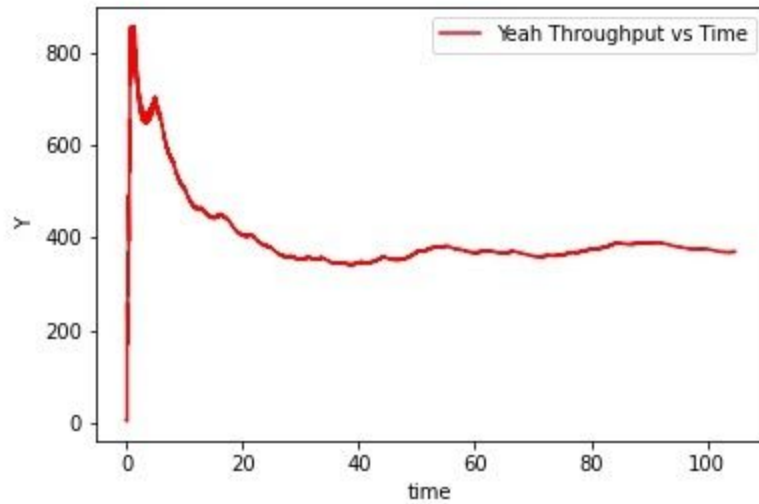**Percentage of packet loss (total) : 0.009900**
Percentage of packet loss (due to Buffer Overflow) : 0.000000
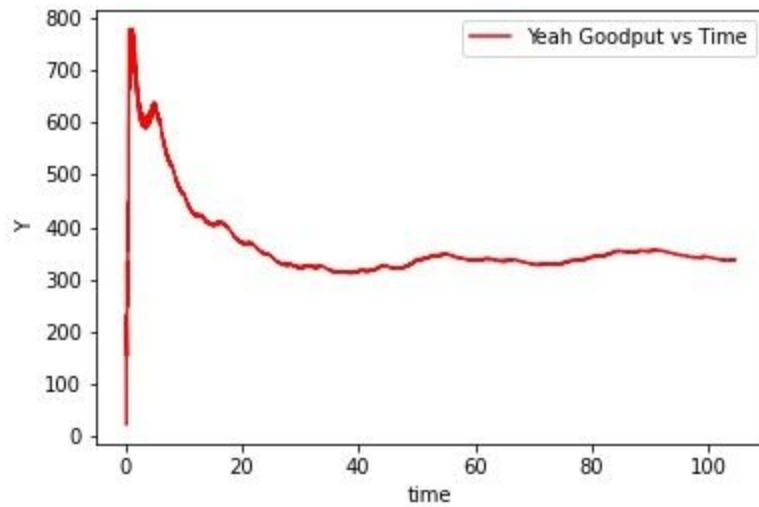**Percentage of packet loss (due to Congestion) : 0.009900**

A. Congestion Window v/s Time

B. ThroughPut v/s Time

C. GoodPut v/s Time

PART 3

- **Congestion losses and the Goodput data for each of the flows are given along with the document for each of the parts.**