

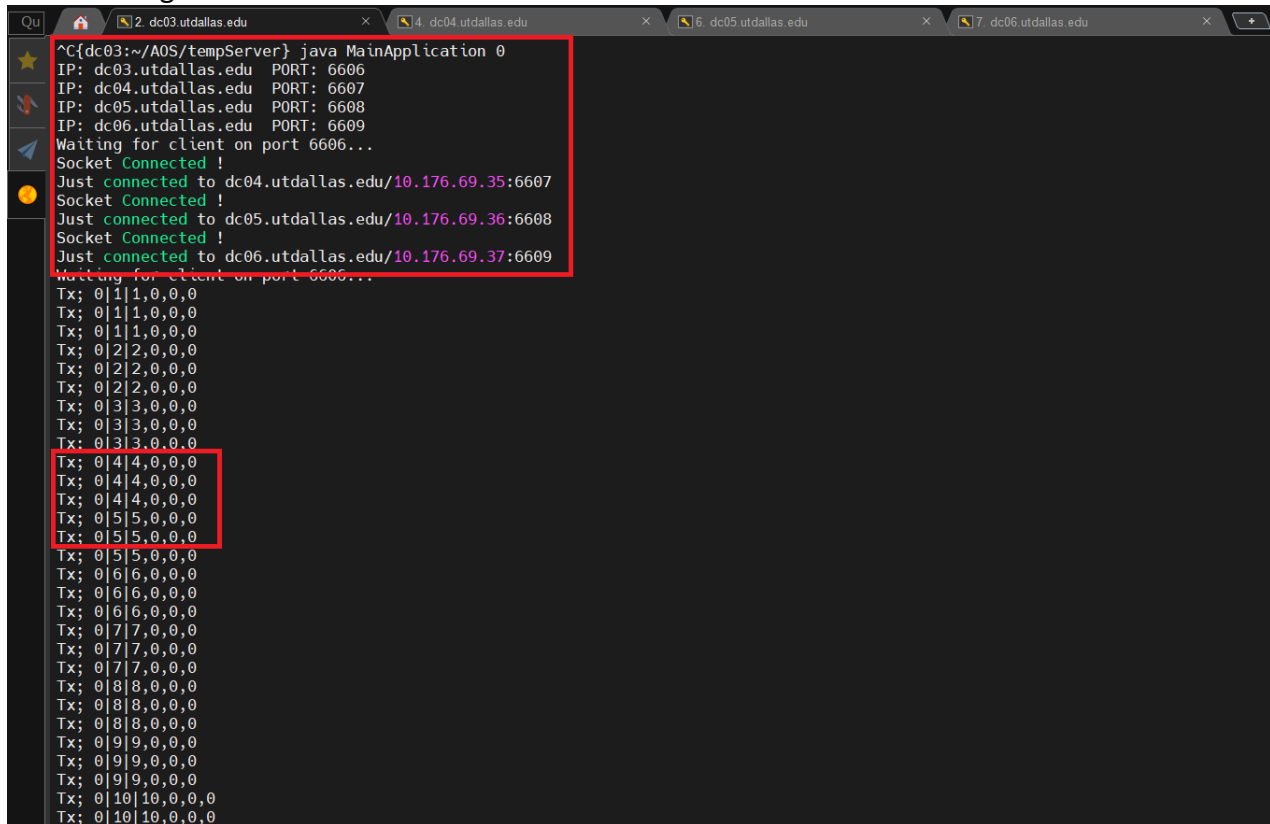
CS 6378: Advanced Operating Systems

Programming Assignment 1 ***(Direction for Checking)***

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Direction for Checking Step-1

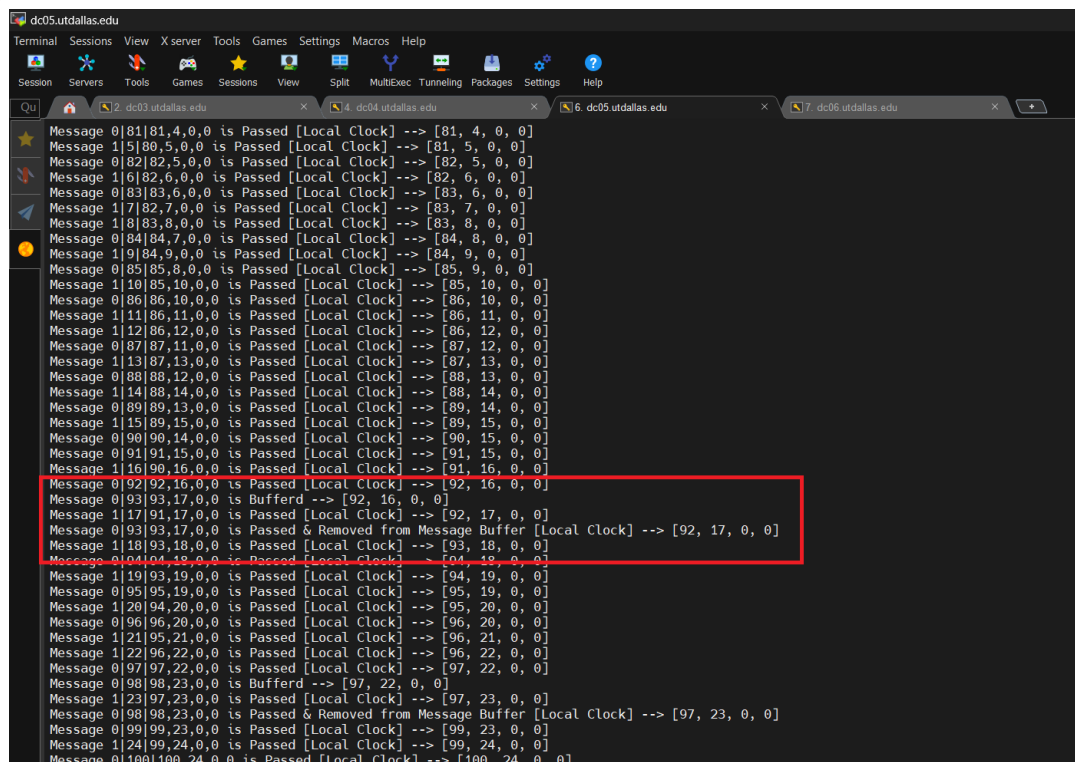
As mentioned in Screenshot we can start an application and connect with 3 sockets then it's start broadcasting.



```
^C{dc03:~/A0S/tempServer} java MainApplication 0
IP: dc03.utdallas.edu PORT: 6606
IP: dc04.utdallas.edu PORT: 6607
IP: dc05.utdallas.edu PORT: 6608
IP: dc06.utdallas.edu PORT: 6609
Waiting for client on port 6606...
Socket Connected !
Just connected to dc04.utdallas.edu/10.176.69.35:6607
Socket Connected !
Just connected to dc05.utdallas.edu/10.176.69.36:6608
Socket Connected !
Just connected to dc06.utdallas.edu/10.176.69.37:6609
Waiting for client on port 6606...
Tx: 0|1|1,0,0,0
Tx: 0|1|1,0,0,0
Tx: 0|1|1,0,0,0
Tx: 0|2|2,0,0,0
Tx: 0|2|2,0,0,0
Tx: 0|2|2,0,0,0
Tx: 0|3|3,0,0,0
Tx: 0|3|3,0,0,0
Tx: 0|3|3,0,0,0
Tx: 0|4|4,0,0,0
Tx: 0|4|4,0,0,0
Tx: 0|4|4,0,0,0
Tx: 0|5|5,0,0,0
Tx: 0|5|5,0,0,0
Tx: 0|5|5,0,0,0
Tx: 0|6|6,0,0,0
Tx: 0|6|6,0,0,0
Tx: 0|6|6,0,0,0
Tx: 0|7|7,0,0,0
Tx: 0|7|7,0,0,0
Tx: 0|7|7,0,0,0
Tx: 0|8|8,0,0,0
Tx: 0|8|8,0,0,0
Tx: 0|8|8,0,0,0
Tx: 0|9|9,0,0,0
Tx: 0|9|9,0,0,0
Tx: 0|9|9,0,0,0
Tx: 0|10|10,0,0,0
Tx: 0|10|10,0,0,0
```

Direction for Checking Step-2

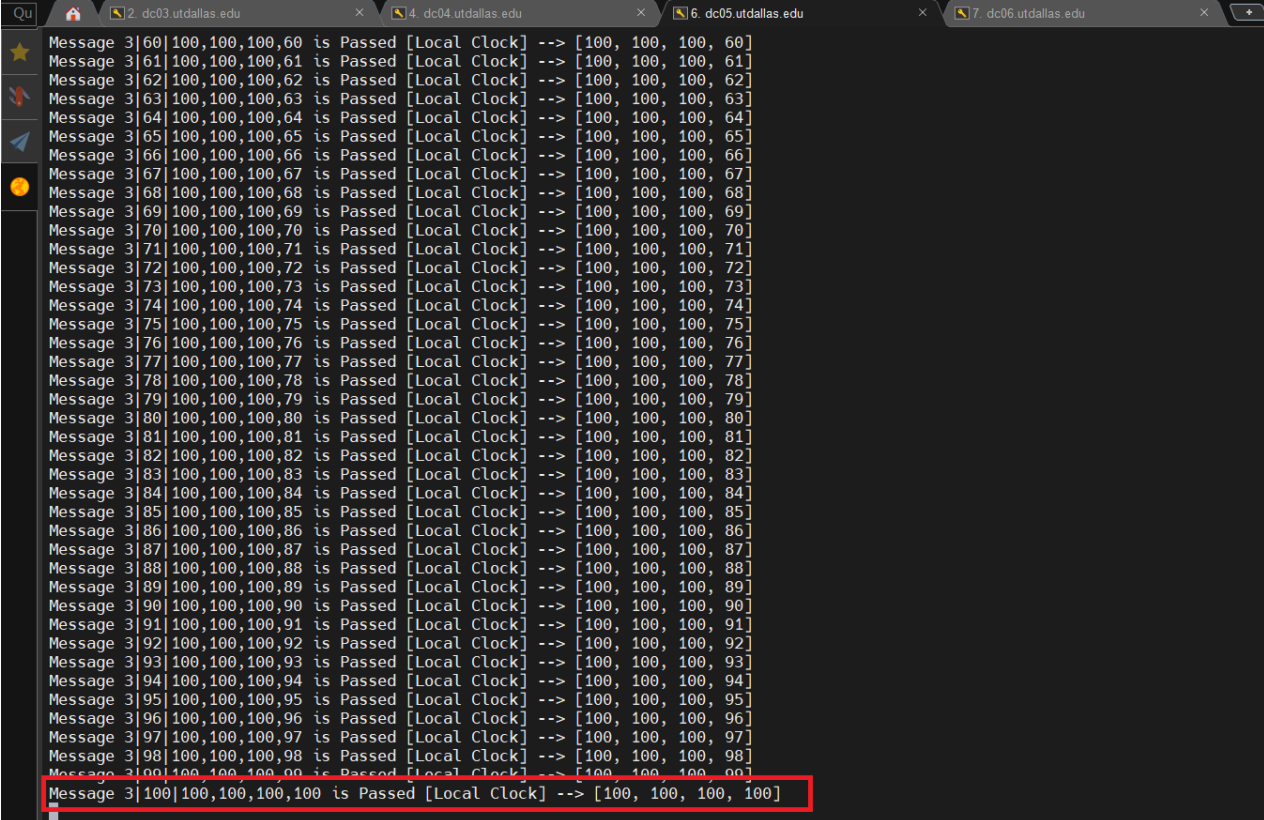
We will only send this message if it is in causal order. We must buffer the message. The message must be transmitted once we confirm that it is eligible for delivery by constantly monitoring the Msgbuffer.



```
Message 0|1|1,0,0,0 is Passed [Local Clock] --> [1, 0, 0, 0]
Message 1|5|80,5,0,0 is Passed [Local Clock] --> [81, 5, 0, 0]
Message 0|82|82,5,0,0 is Passed [Local Clock] --> [82, 5, 0, 0]
Message 1|6|82,6,0,0 is Passed [Local Clock] --> [82, 6, 0, 0]
Message 0|83|83,6,0,0 is Passed [Local Clock] --> [83, 6, 0, 0]
Message 1|7|82,7,0,0 is Passed [Local Clock] --> [83, 7, 0, 0]
Message 1|8|83,8,0,0 is Passed [Local Clock] --> [83, 8, 0, 0]
Message 0|84|84,7,0,0 is Passed [Local Clock] --> [84, 8, 0, 0]
Message 1|9|84,9,0,0 is Passed [Local Clock] --> [84, 9, 0, 0]
Message 0|85|85,8,0,0 is Passed [Local Clock] --> [85, 9, 0, 0]
Message 1|10|85,10,0,0 is Passed [Local Clock] --> [85, 10, 0, 0]
Message 0|86|86,10,0,0 is Passed [Local Clock] --> [86, 10, 0, 0]
Message 1|11|86,11,0,0 is Passed [Local Clock] --> [86, 11, 0, 0]
Message 0|87|87,11,0,0 is Passed [Local Clock] --> [87, 12, 0, 0]
Message 1|13|87,13,0,0 is Passed [Local Clock] --> [87, 13, 0, 0]
Message 0|88|88,12,0,0 is Passed [Local Clock] --> [88, 13, 0, 0]
Message 1|14|88,14,0,0 is Passed [Local Clock] --> [88, 14, 0, 0]
Message 0|89|89,13,0,0 is Passed [Local Clock] --> [89, 14, 0, 0]
Message 1|15|89,15,0,0 is Passed [Local Clock] --> [89, 15, 0, 0]
Message 0|90|90,14,0,0 is Passed [Local Clock] --> [90, 15, 0, 0]
Message 0|91|91,15,0,0 is Passed [Local Clock] --> [91, 15, 0, 0]
Message 1|16|90,16,0,0 is Passed [Local Clock] --> [91, 16, 0, 0]
Message 0|92|92,16,0,0 is Passed [Local Clock] --> [92, 16, 0, 0]
Message 0|93|93,17,0,0 is Bufferd --> [92, 16, 0, 0]
Message 1|17|91,17,0,0 is Passed [Local Clock] --> [92, 17, 0, 0]
Message 0|93|93,17,0,0 is Passed & Removed from Message Buffer [Local Clock] --> [92, 17, 0, 0]
Message 1|18|93,18,0,0 is Passed [Local Clock] --> [93, 18, 0, 0]
Message 0|94|94,18,0,0 is Passed [Local Clock] --> [94, 18, 0, 0]
Message 1|19|93,19,0,0 is Passed [Local Clock] --> [94, 19, 0, 0]
Message 0|95|95,19,0,0 is Passed [Local Clock] --> [95, 19, 0, 0]
Message 1|20|94,20,0,0 is Passed [Local Clock] --> [95, 20, 0, 0]
Message 0|96|96,20,0,0 is Passed [Local Clock] --> [96, 20, 0, 0]
Message 1|21|95,21,0,0 is Passed [Local Clock] --> [96, 21, 0, 0]
Message 0|97|97,22,0,0 is Passed [Local Clock] --> [96, 22, 0, 0]
Message 0|97|97,22,0,0 is Passed [Local Clock] --> [97, 22, 0, 0]
Message 0|98|98,23,0,0 is Bufferd --> [97, 22, 0, 0]
Message 1|23|97,23,0,0 is Passed [Local Clock] --> [97, 23, 0, 0]
Message 0|98|98,23,0,0 is Passed & Removed from Message Buffer [Local Clock] --> [97, 23, 0, 0]
Message 0|99|99,23,0,0 is Passed [Local Clock] --> [99, 23, 0, 0]
Message 1|24|99,24,0,0 is Passed [Local Clock] --> [99, 24, 0, 0]
Message 0|100|100,24,0,0 is Passed [Local Clock] --> [100, 24, 0, 0]
```

Direction for Checking Step-3

After completing we can see local Vector clock will be [100,100,100,100]



```
Qu [2. dc03.utdallas.edu] x [4. dc04.utdallas.edu] x [6. dc05.utdallas.edu] x [7. dc06.utdallas.edu] x
Message 3|60|100,100,100,60 is Passed [Local Clock] --> [100, 100, 100, 60]
Message 3|61|100,100,100,61 is Passed [Local Clock] --> [100, 100, 100, 61]
Message 3|62|100,100,100,62 is Passed [Local Clock] --> [100, 100, 100, 62]
Message 3|63|100,100,100,63 is Passed [Local Clock] --> [100, 100, 100, 63]
Message 3|64|100,100,100,64 is Passed [Local Clock] --> [100, 100, 100, 64]
Message 3|65|100,100,100,65 is Passed [Local Clock] --> [100, 100, 100, 65]
Message 3|66|100,100,100,66 is Passed [Local Clock] --> [100, 100, 100, 66]
Message 3|67|100,100,100,67 is Passed [Local Clock] --> [100, 100, 100, 67]
Message 3|68|100,100,100,68 is Passed [Local Clock] --> [100, 100, 100, 68]
Message 3|69|100,100,100,69 is Passed [Local Clock] --> [100, 100, 100, 69]
Message 3|70|100,100,100,70 is Passed [Local Clock] --> [100, 100, 100, 70]
Message 3|71|100,100,100,71 is Passed [Local Clock] --> [100, 100, 100, 71]
Message 3|72|100,100,100,72 is Passed [Local Clock] --> [100, 100, 100, 72]
Message 3|73|100,100,100,73 is Passed [Local Clock] --> [100, 100, 100, 73]
Message 3|74|100,100,100,74 is Passed [Local Clock] --> [100, 100, 100, 74]
Message 3|75|100,100,100,75 is Passed [Local Clock] --> [100, 100, 100, 75]
Message 3|76|100,100,100,76 is Passed [Local Clock] --> [100, 100, 100, 76]
Message 3|77|100,100,100,77 is Passed [Local Clock] --> [100, 100, 100, 77]
Message 3|78|100,100,100,78 is Passed [Local Clock] --> [100, 100, 100, 78]
Message 3|79|100,100,100,79 is Passed [Local Clock] --> [100, 100, 100, 79]
Message 3|80|100,100,100,80 is Passed [Local Clock] --> [100, 100, 100, 80]
Message 3|81|100,100,100,81 is Passed [Local Clock] --> [100, 100, 100, 81]
Message 3|82|100,100,100,82 is Passed [Local Clock] --> [100, 100, 100, 82]
Message 3|83|100,100,100,83 is Passed [Local Clock] --> [100, 100, 100, 83]
Message 3|84|100,100,100,84 is Passed [Local Clock] --> [100, 100, 100, 84]
Message 3|85|100,100,100,85 is Passed [Local Clock] --> [100, 100, 100, 85]
Message 3|86|100,100,100,86 is Passed [Local Clock] --> [100, 100, 100, 86]
Message 3|87|100,100,100,87 is Passed [Local Clock] --> [100, 100, 100, 87]
Message 3|88|100,100,100,88 is Passed [Local Clock] --> [100, 100, 100, 88]
Message 3|89|100,100,100,89 is Passed [Local Clock] --> [100, 100, 100, 89]
Message 3|90|100,100,100,90 is Passed [Local Clock] --> [100, 100, 100, 90]
Message 3|91|100,100,100,91 is Passed [Local Clock] --> [100, 100, 100, 91]
Message 3|92|100,100,100,92 is Passed [Local Clock] --> [100, 100, 100, 92]
Message 3|93|100,100,100,93 is Passed [Local Clock] --> [100, 100, 100, 93]
Message 3|94|100,100,100,94 is Passed [Local Clock] --> [100, 100, 100, 94]
Message 3|95|100,100,100,95 is Passed [Local Clock] --> [100, 100, 100, 95]
Message 3|96|100,100,100,96 is Passed [Local Clock] --> [100, 100, 100, 96]
Message 3|97|100,100,100,97 is Passed [Local Clock] --> [100, 100, 100, 97]
Message 3|98|100,100,100,98 is Passed [Local Clock] --> [100, 100, 100, 98]
Message 3|99|100,100,100,99 is Passed [Local Clock] --> [100, 100, 100, 99]
Message 3|100|100,100,100,100 is Passed [Local Clock] --> [100, 100, 100, 100]
```