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CPSC 474 – Project 1: Lamport's Logical Clock

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# 474-Project-1
Project 1: Lamport's Logical Clock

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How to Run:

1. Extract project into folder
2. Navigate to project directory
3. Add input to file input.txt
4. Open terminal at project directory
5. Run command: g++ main.cpp
6. Run command: ./a.out
7. Results will be both displayed in terminal and output to file

NOTE: DO NOT HAVE AN EMPTY LINE AT THE BOTTOM OF THE INPUT FILE

Calculate Algorithm Pseudocode:

loop through input until all events are given a value in each iteration:

go through each element in array:

assign 0 if NULL

assign a number if an internal event or send event

try to assign correct number if we know the send number

when done, output results

Verify Algorithm Pseudocode:

Loop through input once to look for obvious issues and gaps (receives)

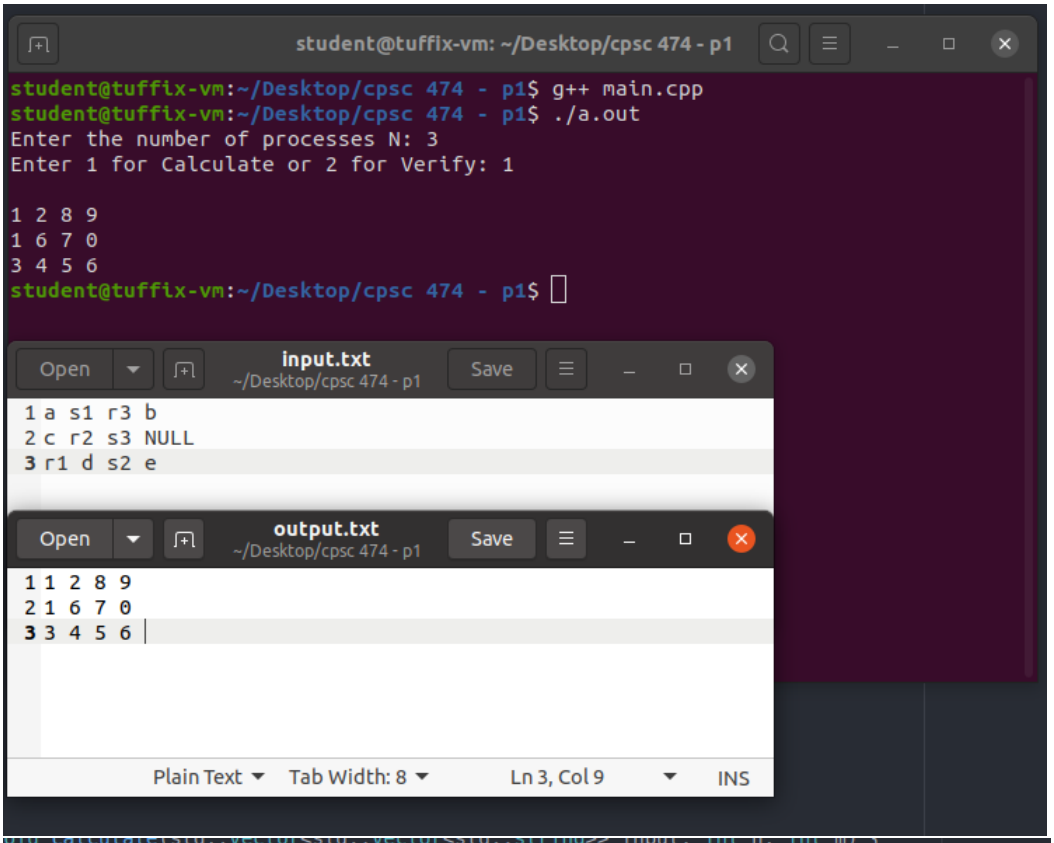
Find location of the sends (1 less than the receives)

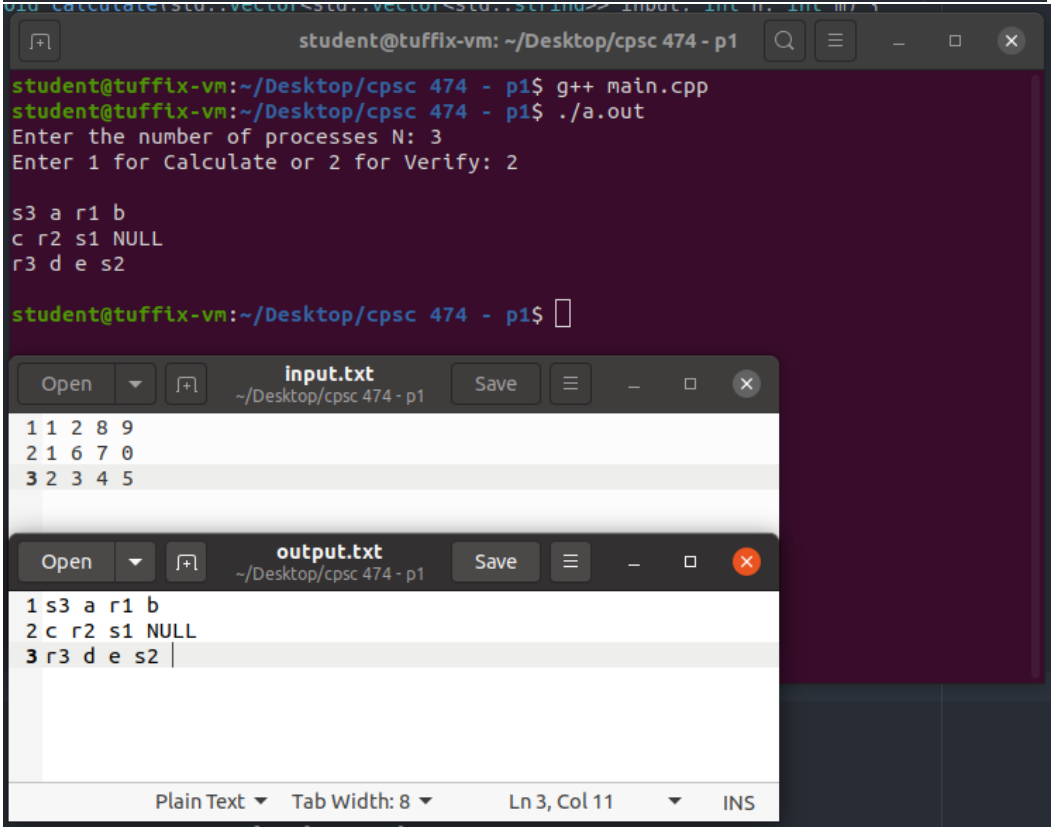
Assign the sends and receives respective r and s values

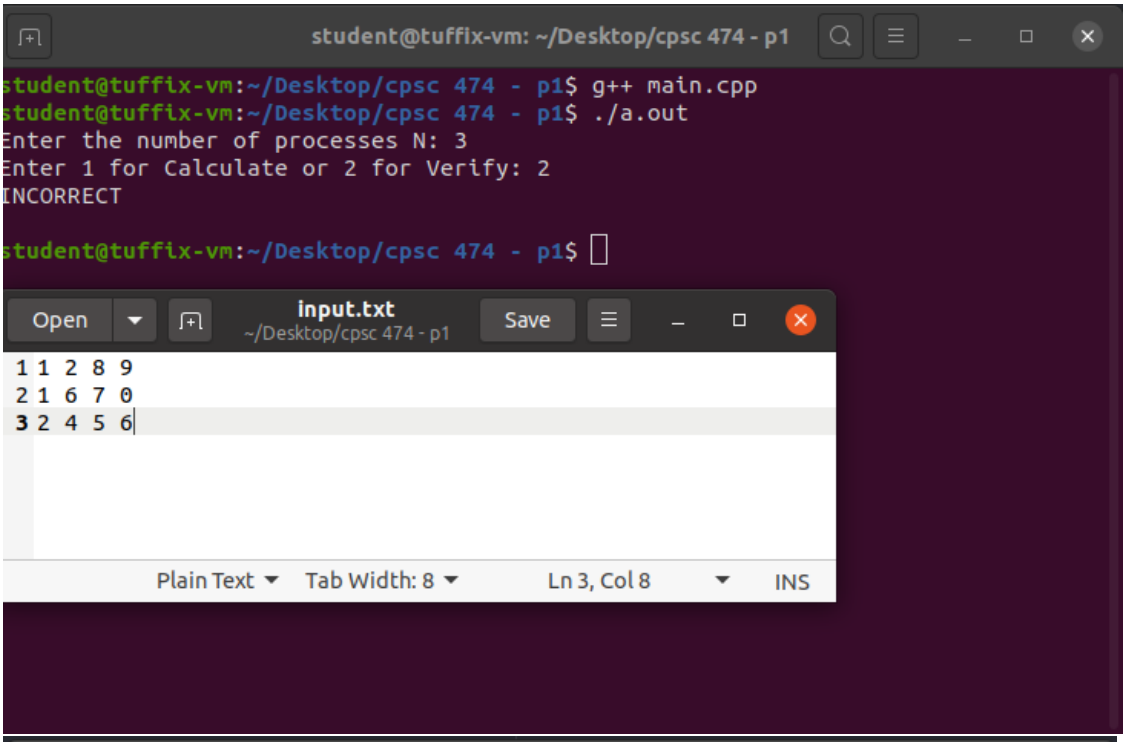
Loop through input again to assign everything else as internal events

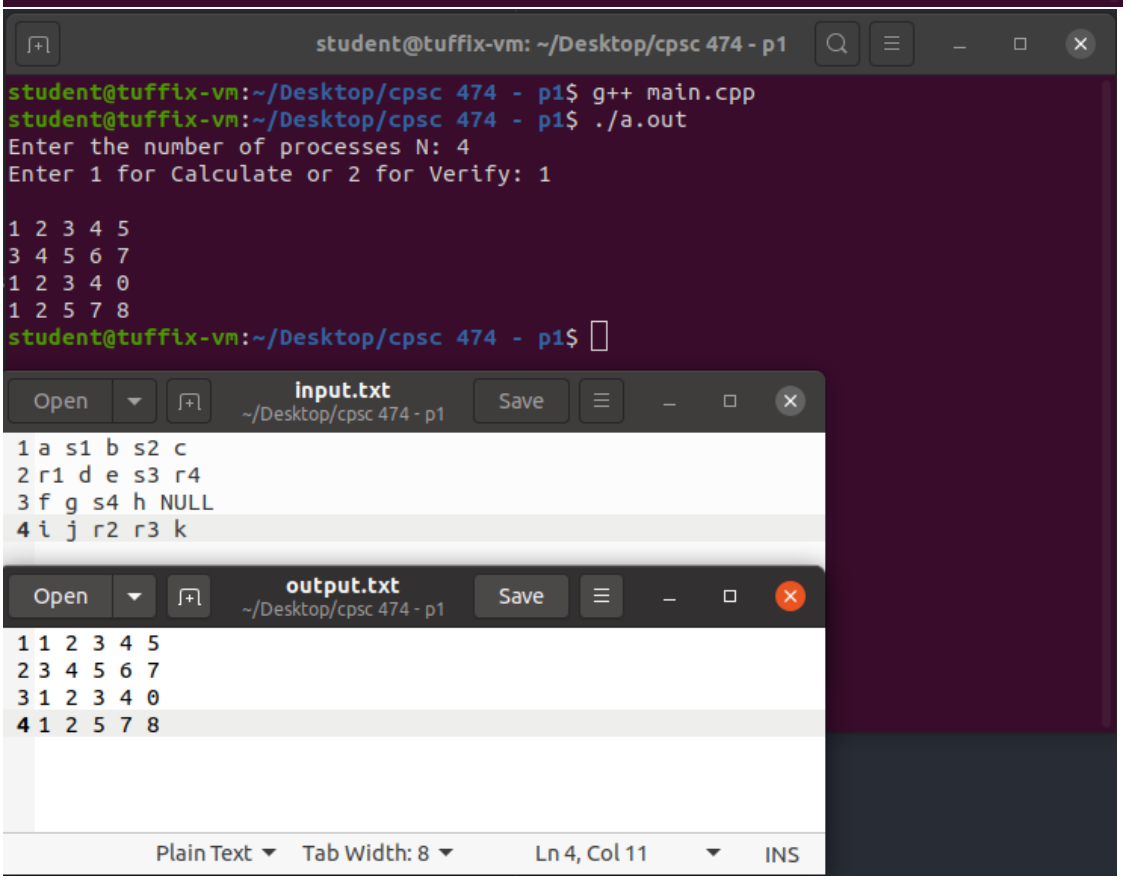
Output results

Snapshots


student@tuffix-vm: ~/Desktop/cpsc 474 - p1
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ g++ main.cpp
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ ./a.out
Enter the number of processes N: 3
Enter 1 for Calculate or 2 for Verify: 1
1 2 8 9
1 6 7 0
3 4 5 6
student@tuffix-vm:~/Desktop/cpsc 474 - p1$
Open
input.txt
~/Desktop/cpsc 474 - p1
Save
1 a s1 r3 b
2 c r2 s3 NULL
3 r1 d s2 e
Open
output.txt
~/Desktop/cpsc 474 - p1
Save
1 1 2 8 9
2 1 6 7 0
3 3 4 5 6
Plain Text
Tab Width: 8
Ln 3, Col 9
INS


student@tuffix-vm: ~/Desktop/cpsc 474 - p1
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ g++ main.cpp
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ ./a.out
Enter the number of processes N: 3
Enter 1 for Calculate or 2 for Verify: 2
s3 a r1 b
c r2 s1 NULL
r3 d e s2
student@tuffix-vm:~/Desktop/cpsc 474 - p1$
Open
input.txt
~/Desktop/cpsc 474 - p1
Save
1 1 2 8 9
2 1 6 7 0
3 2 3 4 5
Open
output.txt
~/Desktop/cpsc 474 - p1
Save
1 s3 a r1 b
2 c r2 s1 NULL
3 r3 d e s2
Plain Text
Tab Width: 8
Ln 3, Col 11
INS


student@tuffix-vm: ~/Desktop/cpsc 474 - p1
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ g++ main.cpp
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ ./a.out
Enter the number of processes N: 3
Enter 1 for Calculate or 2 for Verify: 2
INCORRECT
student@tuffix-vm:~/Desktop/cpsc 474 - p1$
Open
input.txt
~/Desktop/cpsc 474 - p1
Save
1 1 2 8 9
2 1 6 7 0
3 2 4 5 6
Plain Text
Tab Width: 8
Ln 3, Col 8
INS


student@tuffix-vm: ~/Desktop/cpsc 474 - p1
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ g++ main.cpp
student@tuffix-vm:~/Desktop/cpsc 474 - p1$ ./a.out
Enter the number of processes N: 4
Enter 1 for Calculate or 2 for Verify: 1
1 2 3 4 5
3 4 5 6 7
1 2 3 4 0
1 2 5 7 8
student@tuffix-vm:~/Desktop/cpsc 474 - p1$
Open
input.txt
~/Desktop/cpsc 474 - p1
Save
1 a s1 b s2 c
2 r1 d e s3 r4
3 f g s4 h NULL
4 i j r2 r3 k
Open
output.txt
~/Desktop/cpsc 474 - p1
Save
1 1 2 3 4 5
2 3 4 5 6 7
3 1 2 3 4 0
4 1 2 5 7 8
Plain Text
Tab Width: 8
Ln 4, Col 11
INS