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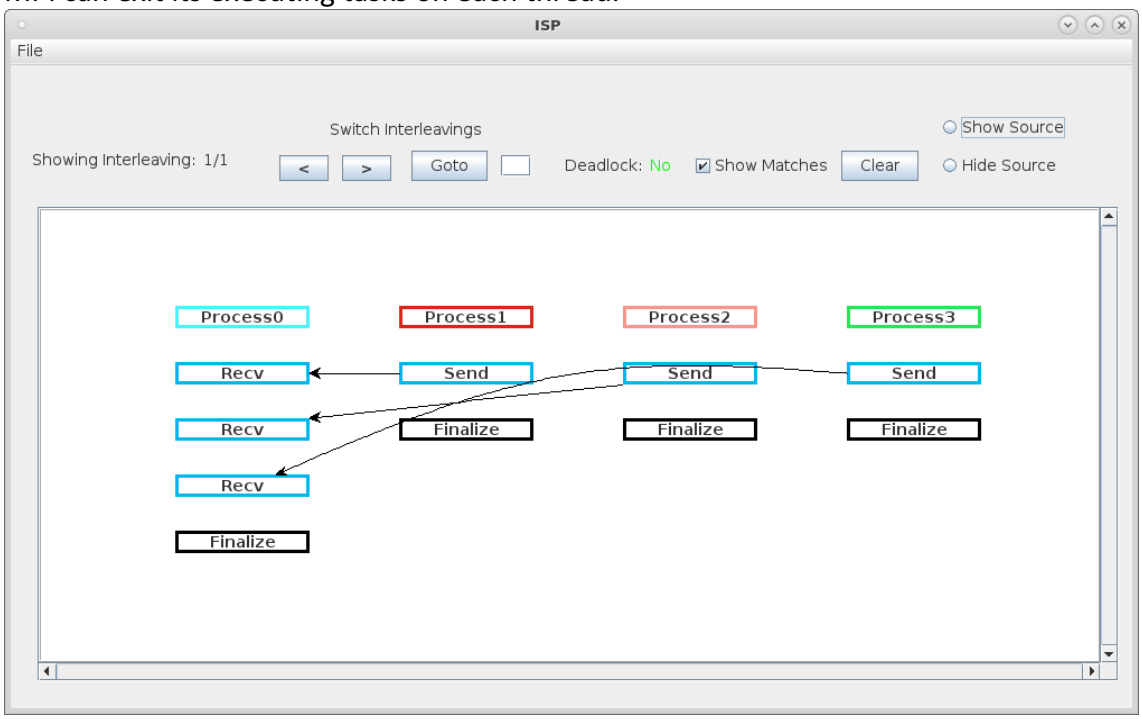
Assignment 4

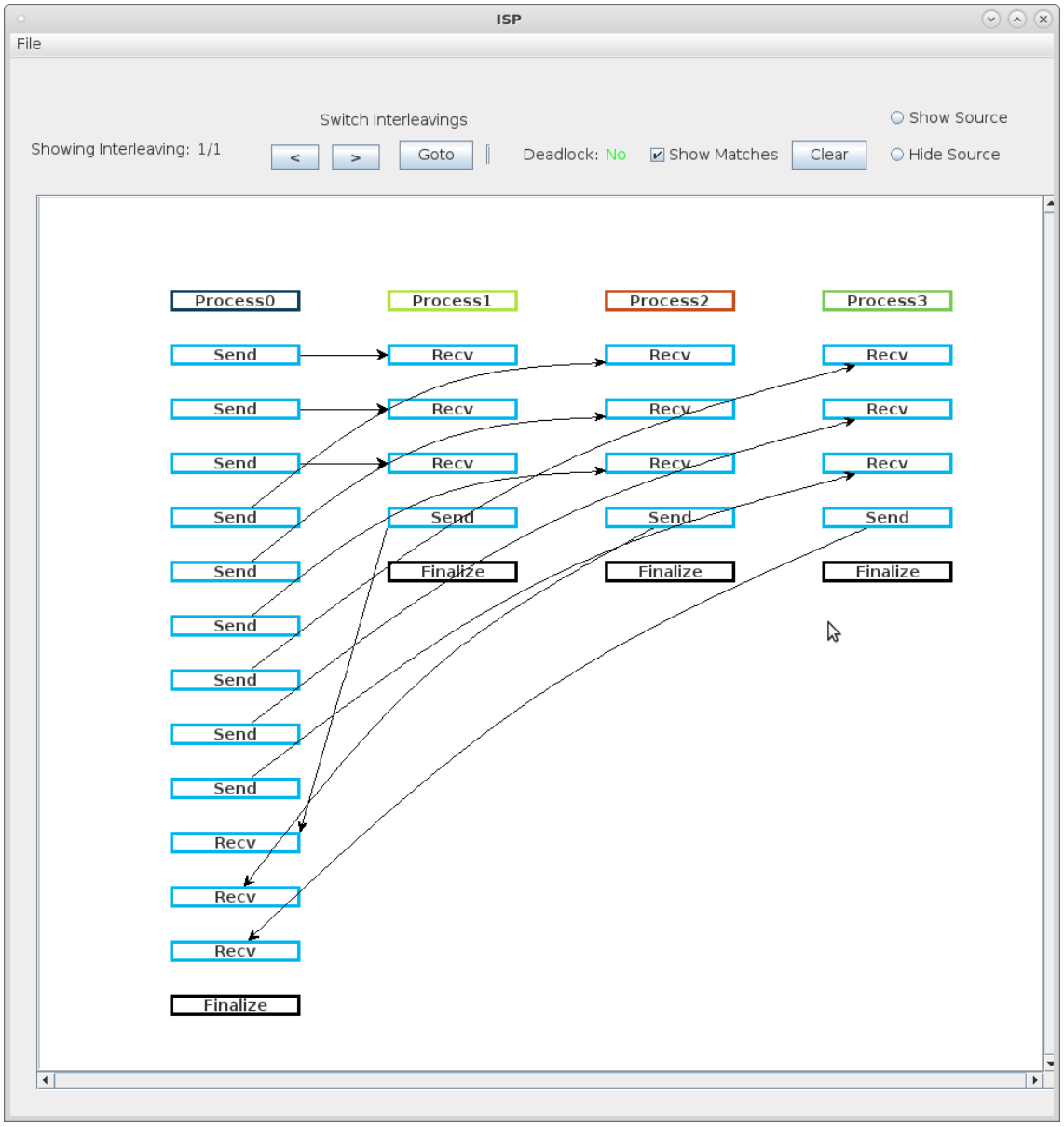
1.

a. MPI_trap1.c: The main thread receives the outputs of each thread then finalizes the MPI execution after each thread. This ensures that the thread is finished and MPI can exit its executing tasks on each thread.



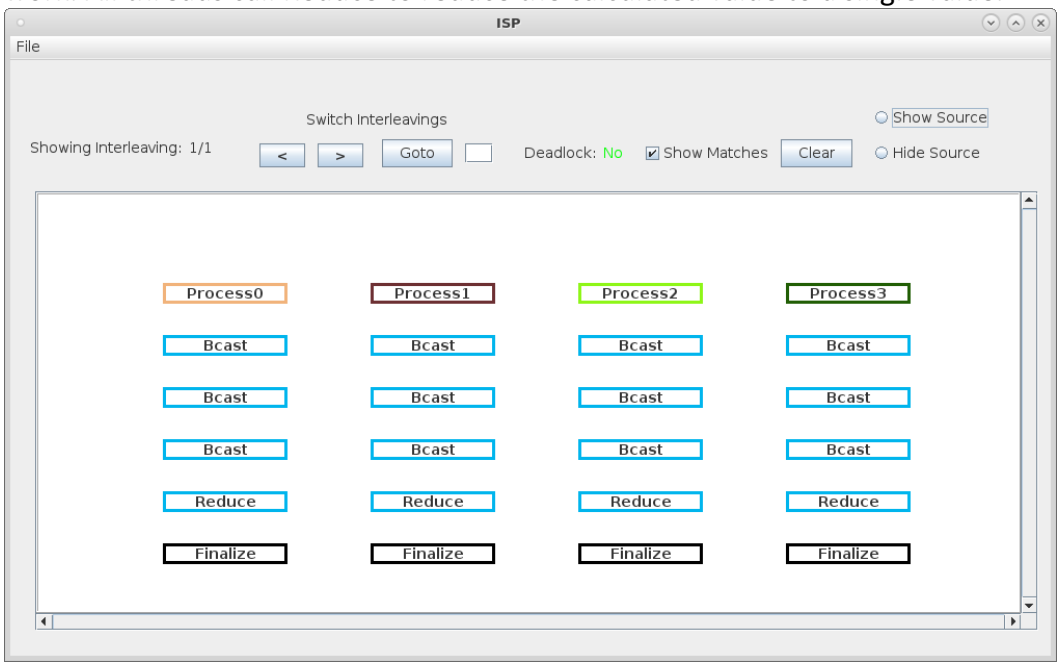
b. MPI_trap2.c: The main process sends the information to be calculated and later summed up. Process 3 does an interesting thing and receives 3 calls from the main thread and calculates the integrals then sends its computations back to the

main thread.

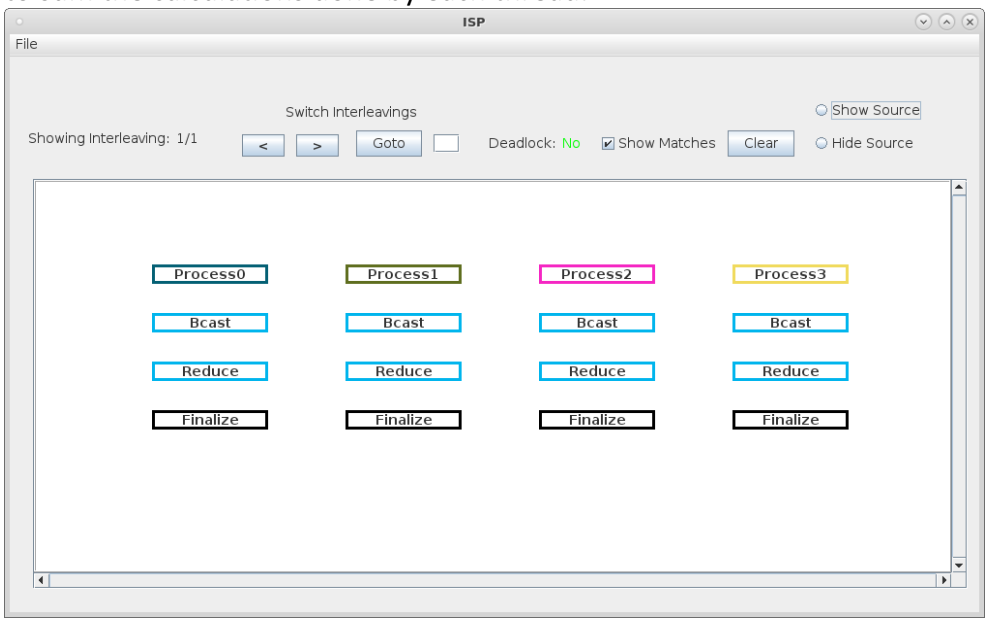


c. MPI_trap3.c: Opposed to the previous program constructs, trap3 uses Bcast and reduce so that the program is never waiting on other threads to complete their

work. All threads call Reduce to reduce the calculated value to a single value.

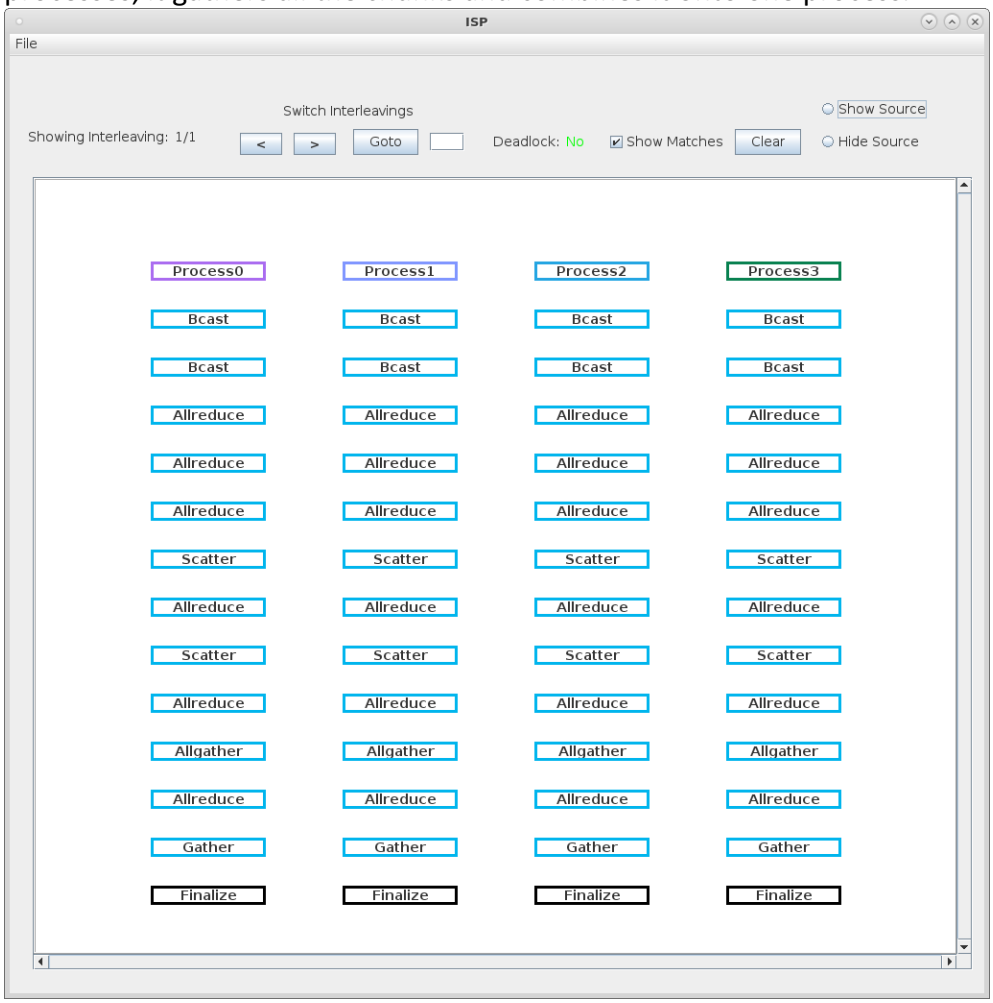


d. MPI_trap4.c: The program only casts Bcast once to gather the input for each thread to work on and also only calls reduce once when the program is finished to sum the calculations done by each thread.



e. OddEven.c: In this programall processes call BCast when they receive the args. After BCast, they all call AllReduce to sum the values that each process has then after combining, it sends the result back to all the processes. After AllReduce, scatter is called so that all processes receive a piece of the array to be worked on then the construct of AllReduce and Scatter is repeated until gather is called. Gather is the opposite of scatter. Intead of sending chunks of an array to all

processes, it gathers all the chunks and combines it onto one process.



f. When working with arrays it seems as if there is a pattern to be seen. AllReduce and Scatter are called as a construct together then gather is called to combine the results calculated by each process. This is something to keep in mind since these constructs are non-blocking statements as opposed to send and recv.


ISP
File
Switch Interleavings
Showing Interleaving: 1/1
<
>
Goto
Deadlock: No
Show Matches
Clear
Show Source
Hide Source
Process0
Process1
Process2
Process3
Bcast
Bcast
Bcast
Bcast
Bcast
Bcast
Bcast
Bcast
Allreduce
Allreduce
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Finalize
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