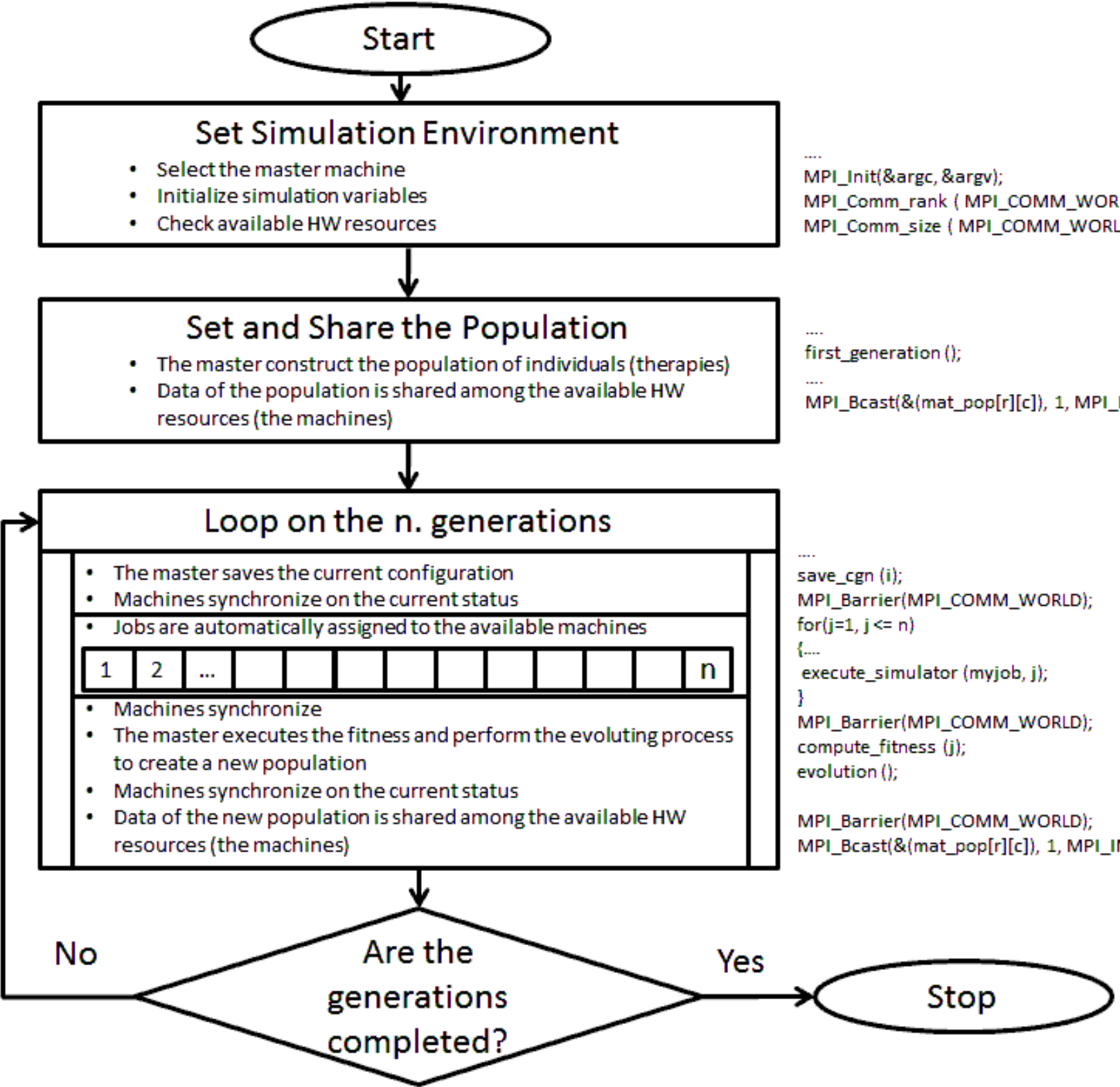
Start
Set Simulation Environment
• Select the master machine
• Initialize simulation variables
• Check available HW resources
....
MPI_Init(&argc, &argv);
MPI_Comm_rank (MPI_COMM_WORLD, &rank);
MPI_Comm_size (MPI_COMM_WORLD, &nprocs);
Set and Share the Population
• The master construct the population of individuals (therapies)
• Data of the population is shared among the available HW resources (the machines)
....
first_generation ();
....
MPI_Bcast(&(mat_pop[r][c]), 1, MPI_INT, root, MPI_COMM_WORLD);
Loop on the n. generations
• The master saves the current configuration
• Machines synchronize on the current status
• Jobs are automatically assigned to the available machines
1
2
...
n
• Machines synchronize
• The master executes the fitness and perform the evoluting process to create a new population
• Machines synchronize on the current status
• Data of the new population is shared among the available HW resources (the machines)
....
save_cgn (i);
MPI_Barrier(MPI_COMM_WORLD);
for(j=1, j <= n)
{....
execute_simulator (myjob, j);
}
MPI_Barrier(MPI_COMM_WORLD);
compute_fitness (j);
evolution ();
MPI_Barrier(MPI_COMM_WORLD);
MPI_Bcast(&(mat_pop[r][c]), 1, MPI_INT, root, MPI_COMM_WORLD);
No
Are the generations completed?
Yes
Stop