Scenario 1: Complete Run With 3 Runners (No Swap and DNF)

The user types “POWER” into the command-line interface and starts the simulation. Then, they set the time for the system to the current time in <HR:MIN:SEC> format. At the start of the simulation, all channels are disabled, so the channels 1 and 2 are manually toggled by the commands “TOG 1” and “TOG 2.” By entering the command “CONN GATE 1” the user then enables a start gate for channel one. They also connect an end gate for the finish line by typing “CONN GATE 2.”

After this set up is complete, the user queues each runner into the race by typing “NUM 1,” “NUM 2,” and “NUM 3.” The runners start the race in the order they were received by the system every time the user types the command “START”. Since there is a sensor, the sensor triggers “START,” as runner 1 crosses the start gate,“START,” again as runner 2 crosses the start gate, and again for runner 3. As each racer finishes in the the order they start, the finish gate triggers the command “FINISH” for each runner. The gate triggers “FINISH”, when runner 1 finishes; “FINISH” again for runner 2; and again for runner 3. Once the race is finished, the user requests run data for the entire run by typing “PRINT 1.” The print data shows the start, finish and elapsed time for every runner and organized by runner number.

After run data is collected by the user, the user then ends the run by typing “ENDRUN,” disconnects the sensors by typing “DISC 1” and “DISC 2,” and turns off the machine by typing “POWER” once more.

Scenario 2: Complete Run With 3 Runners and DNF (No Swap)

The user types “POWER” into the command-line interface and starts the simulation. Then, they set the time for the system to the current time in <HR:MIN:SEC> format. At the start of the simulation, all channels are disabled, so the channels 1 and 2 are manually toggled by the commands “TOG 1” and “TOG 2.” By entering the command “CONN GATE 1” the user then enables a start gate for channel one. They also connect an end gate for the finish line by typing “CONN GATE 2.”

After this set up is complete, the user enters each runner into the race by typing “NUM 1,” “NUM 2,” and “NUM 3.” The runners start the race in the order they were received by the system every time the user types the command “START”. The user types “START,” as runner 1 starts the race, types “START,” again as runner 2 starts the race, and again for runner 3. As each racer finishes in the the order they start, the user types “FINISH” for each runner. The third runner does not finish the race in the allotted time. The user types “FINISH” for runner 1; “FINISH” when runner 2 finishes; and “DNF” for runner 3. Once the race is finished, the user requests run data for the entire run by typing “PRINT 1.” The print data shows that the third runner has a start time, but no end time, and is signified by “DNF” on the printout. The other runners have normal print data consisting of their start, finish, and elapsed times.

After run data is collected by the user, the user then ends the run by typing “ENDRUN,” disconnects the sensors by typing “DISC 1” and “DISC 2,” and turns off the machine by typing “POWER” once more.