

Out of the Tunnel

Right now, the ExploroBot is facing west, ready to begin its exit from the tunnel. Just like the entrance, the bot will make some moves that are duplicates:

(Group 1) Forward – Detect Wall – Stop – Turn Right (second corner)

(Group 2) Forward – Detect Wall – Stop – Turn Right (first corner)

Turn Right (this final turn allows the robot to leave the tunnel)

So, once again, there's an opportunity to use two LOOP blocks, one nested inside the other. There are just a couple differences with these two LOOP blocks:

- The bot will be making right turns instead of left turns.
- The bot will make two right turns, so the outer LOOP block should only need its **Count** set to 2 instead of 3.

Knowing this information, let's place the two LOOP blocks and configure the outer LOOP for three repetitions and the inner LOOP for the Ultrasonic Sensor (see Figure 4-19). But didn't I say that it only needed to make two right turns? After that second right turn, you want the bot to keep rolling. It won't encounter another wall, but it should encounter your hands, waiting for it to come out of the tunnel. For that reason, you can configure this LOOP with a count of 3, even though it won't make an actual third turn.

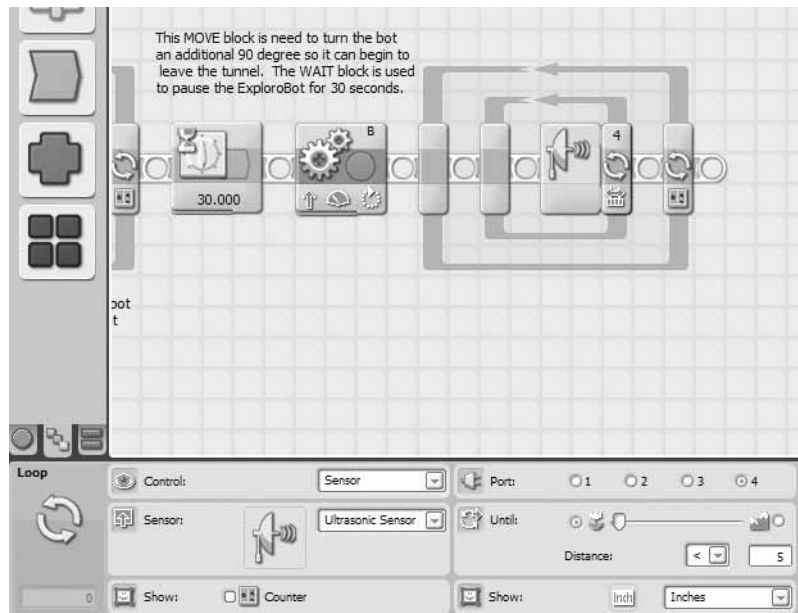


Figure 4-19. Two LOOP blocks placed and configured

Next, place three MOVE blocks: one for moving the bot, one for stopping the motors, and one for turning the bot. The first MOVE block is configured with **Unlimited** duration for motors

B and C. The second MOVE block is configured to stop motors B and C, and the third MOVE block is configured to turn *only* motor C at a power level of 25 and a duration of 360 degrees (see Figure 4-20).

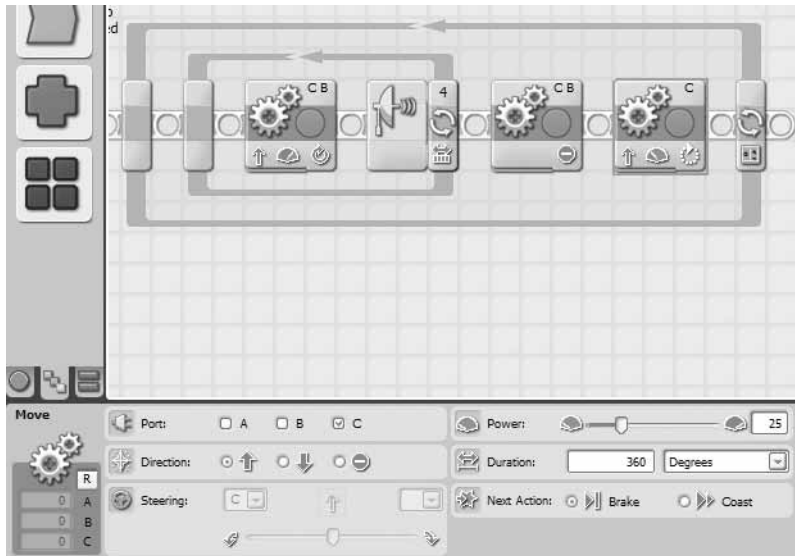


Figure 4-20. Place three MOVE blocks here.

Comments are placed describing these new LOOP and MOVE blocks (see Figure 4-21).

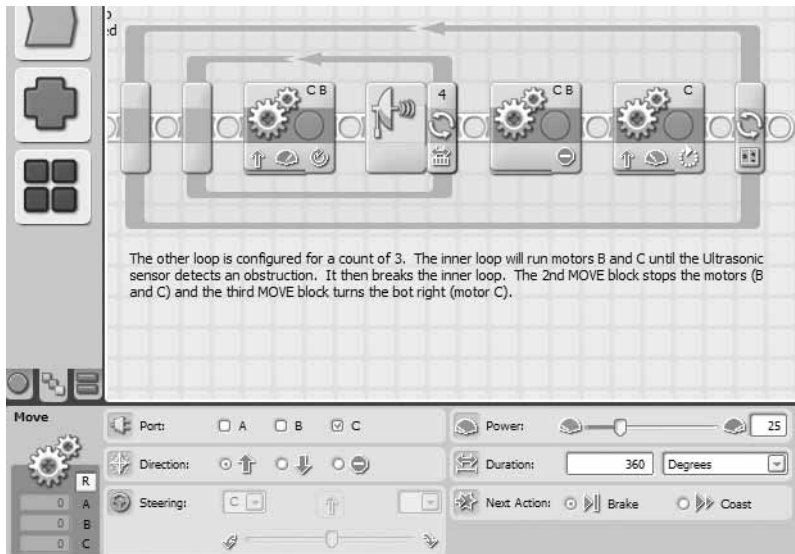


Figure 4-21. Comments are added to describe these new blocks.