**Virtual Pi2Go Programming: Worlds**



**AIM:** This exercise sheet provides additional activities for investigating the Pi2Go robot sensors. It assumes familiarity with the material in the Pi2Go Programming Worksheets 1-4.

**Exercise 1**:

So far we have used our Pi2Go simulation only in default\_world.xml.

For this exercise we will look at a different world.

If the simulator is currently running you need exit the simulator (by pressing Q) and disconnect your virtual Pi2Go robot by typing pi2go.cleanup() in the IDLE window where you have been doing the previous exercises.

Re-start the simulator and select maze1.xml.

In the IDLE window where you have been doing the exercises, reconnect your virtual initio by typing pi2go.init();

What are the values returned by the ultrasonic sensor and the three infrared distance sensors in this world?

Drive the Pi2Go using the motor commands to another part of the world and take new values for the ultrasonic and infrared sensors.



What happens if the Pi2Go hits one of the blocks?

**Exercise 2:**

Put a light source into the world. Notice that the light source shines over the boxes.

What is the value returned by pi2go.getLight(0) and pi2go.getLightFL()?



Why are these the same?

Give another example of two light sensor commands that will give the same answer?

**Exercise 3:**

Stop the simulator (by pressing Q) and disconnect your virtual Pi2Go robot by typing pi2go.cleanup() in the IDLE window where you have been doing the exercises.

Re-start the simulator and select line\_following.xml.

In the IDLE window where you have been doing the exercises, reconnect your virtual initio by typing pi2go.init()



What are the values returned by the two infrared line sensors in this world?

Move the robot backwards and forwards until you find a spot where the two infrared line sensors both return 0.

Note that this means the simulators sensors are not in quite the right place.



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