**Virtual Initio Programming: While Loops**



**AIM:** After completing this worksheet you should be able to use while loops in Python programs.

**You Need:** To complete this worksheet you need to have a virtual Initio (see WS1), and to be able to use files to store programs (see WS5). You also need to know the commands to operate the Initio motors and sensors (see WS3 & WS4).

**If the simulator isn’t already running:**

Start it (see WS1), and select the Initio robot and default\_world.xml. Now open a new IDLE window.

A while loop allows a Python program to continue executing some statement multiple times *while* something remains true. For instance, we might want our Initio to keep reversing while there is an obstacle.

import simclient.simrobot as initio

initio.init()

initio.reverse(10)

while (initio.getDistance() < 10):

print(“Reversing”)

pi2go.stop()

Notice that we start reversing *before* we execute the while loop. This is because once you start your Initio moving, it carries on doing that until it is told to do something else. So, we are simply using the while loop prevent the program moving on to the stop command, until the obstacle is no longer detected.



**Question 1:** Create a file containing this program and execute it. What happens?



**Question 2:** What sort of tests would you need to perform to check the program was working properly in all cases?

**Remember:** When you have finished working with your robot type:

**initio.cleanup()**

When you want to exit the simulator, select the simulator window and type Q.



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