**Initio Programming: While Loops**

**AIM:** After completing this worksheet you should be able to use while loops in Python programs. You should also be able to construct conditions using the Python logical operator not

**You Need:** To complete this worksheet you need to have an Initio that is connected to a keyboard, mouse and monitor (see WS1), to understand how to start and stop IDLE from the Linux Command Line (see WS2), and to be able to use files to store Programs (WS5). You also need to know the commands to operate the Initio motors and sensors (WS3 & WS4).

A while loop allows a Python program to continue executing some statement *while* something remains true. For instance, we might want our Pi2Go to keep reversing while there is an obstacle.

import robohat as initio

initio.init()

initio.reverse(10)

while (initio.irCentre()):

 print(“Reversing”)

initio.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.

**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 the robot, type initio.cleanup()at the command line, quit IDLE, then select Shutdown from the Raspberry Pi menu item. Once the robot has shut down, switch it off.



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