**Virtual Initio Programming: Logic and Control**



**AIM:** This exercise sheet provides additional programs using logic, if statements and while loops for you to write for your virtual Initio. It assumes familiarity with worksheets 1-10.

**Exercise 1**: Write a program that will pan the “head” of the Initio to the left if there is an obstacle on the left and to the right if there is an obstacle on the right.

**Exercise 2**:  Write a program that behaves as follows: When an obstacle is detected on the left the program starts printing out the value from the ultrasonic distance sensor. When an obstacle is detected on the right it stops printing the distance out.

**Exercise 3**: Extend your program from exercise 1 so it keeps moving the Initio head as obstacles appear and disappear.

**Exercise 4:** Write a program that will make the Initio reverse if there are obstacles on both the left and right side. Once the obstacles both disappear it should stop reversing.

**Exercise 5**: Write a program that will make the Initio move forward if there is no obstacle in front of it (determined using the ultrasonic sensor) or to either side. Once an obstacle appears somewhere it should stop moving.

**Exercise 6**: Adapt your programs from exercises 4 and 5 so that the robot reverses until there are no obstacles and then moves forward until there is an obstacle and keeps repeating this.



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