Our robot contains 2 long range infrared sensors, 4 short range infrared sensors and an ultrasonic sensor.

[Untitled](http://blogs.ntu.edu.sg/scemdp/201415s1-g2/files/2014/09/Untitled.png)

Figure 1 - Front Sensor

Figure 1 Front Sensor - contain of 2 short range and 1 ultrasonic. The 2 short range sensor enable the robot to detect obstacle at the front side range at 5 to 8cm, this is to cover the ultrasonic blind spot. The ultrasonic sensor enable the robot to detect obstacle at the front center range at 5 to 8cm.

[Untitled1](http://blogs.ntu.edu.sg/scemdp/201415s1-g2/files/2014/09/Untitled1.png)

Figure 2 - Left/Right Sensor

Figure 2 Left/Right Sensor - With the Long and Short range sensor, it allow the robot to detect obstacle up to 25cm accurately. The label is to define the obstacle location.

ob1

Obstacle1 at 5cm (using short range sensor)

ob2

Obstacle2 at 15cm (using short range sensor)

ob3

Obstacle3 at 25cm (using long range sensor)

ob4

Obstacle4 at 35cm (using long range sensor)

ob5

Obstacle5 at 45cm (using long range sensor)

Left/Right Sensor - the short range sensor enable the robot to detect obstacle at the left/right within 5 to 25cm. It allows the sensor feedback of the distance and plot the obstacle accordingly. e.g. 5cm (600 sensor reading) the plotting value will be obstacle1. 15cm (600 sensor reading) the plotting value will be obstacle2.

If the obstacle doesn't fall between 5 to 25 cm, the long range sensor will check for further obstacle reading (long range sensor reading in the robot is 25 to 45 cm). And plot the value accordingly.