**Title: Noise Elimination Algorithm**

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* **Introduction:**

During the locomotion of Messenger Robot 1, it moves with the help of ultrasonic sensor’s readings. But when the tree interferes, the reading changes abruptly. So, an algorithm was created to eliminate this abrupt change in reading. The noise elimination basically means, to reject any unnecessary reading given by ultrasonic, which is a noise or disturbance.

* **Working:**

Firstly, we took 2 readings and stored it in 2 variables. And from the taken readings, the next reading was predicted and stored in another variable. pv=(2\*prev - prev2);

Then a range is given for the predicted value, such that beyond this range, the reading wont be taken; reason, disturbance. Additionally, until the disturbance is present, the current value is replaced by the predicted value, such that it will run straight.

//Now, whatever values we will be getting, are to be stored as an array in SD card.

* **Insights:**

Firstly, we took the 2 readings in loop itself. Due to this, the values were coming back to ‘0’ when the disturbance was removed.

Also, due to absence of flag in the code, proper reading wasn’t getting.

The use of more accurate sensors is suggested, because the ultra-sonic sensors aren’t that accurate. So, sensors like “LIDAR” are suggested.