Odometer notes

Encoder detects light in an alternating sequence, A !B, !A B, A !B etc. this should be reflect in the code

Encoders should be added to passive wheels to allow wheels to be compared to in the event of slippage the passive wheels will not have slipped.

## Alternative

If passive wheels with encoders are not available

To account for wheel slips on the odometer I shall compare the values of all the odometers to find if a wheel has slipped. i.e. if wheel 1 has slipped and another 2 have not then it should be different. Slips would result in a negative error, meaning the distance traveled would be greater than the distance measured.

So if a wheel slip occurs then the other wheels should be reporting a greater distance than the slipped wheels. This means if 2 wheels’ slip then the wheel with the greatest distance should be assumed correct.

### Desirable

The point where pipes join will result in a small gap, this will cause a positive error in the measured distance, making it appear that a greater distance has been covered than is correct. This can be accounted for by when the LiDAR detects a gap over a set distance then this distance be corrected by a set amount.