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Assignment 1

CS 4981 021

9/13/2021

**Assignment 1 – Wheel Encoders**

The code below shows what was run on the robot to perform this assignment. The 102 speed was the most accurate in our Lab 1, while the 511 was the least. I also added a 2 second wait at the end to wait for the robot to come to a full stop before printing the motor angles.

Text

Description automatically generated

**Data**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Trial 1 | Trial 2 | Trial 3 | Trial 4 | Trial 5 |
| Most Accurate | 361, 361 | 361, 360 | 361, 361 | 361, 361 | 360, 361 |
| Least Accurate | 364, 363 | 364, 364 | 363, 363 | 366, 365 | 364, 363 |
| In Air | 365, 364 | 366, 366 | 364, 364 | 364, 364 | 363, 363 |

**1-Sample t-Test**

Assumed:

* Data is normally distributed
* Randomized sample

Null Hypothesis: M – μ = 0, where M is the sample mean and μ is the hypothetical mean

Hypothetical mean: 360

Actual mean: 363

N = 30

t = 9.1268

df = 29

Two-tailed p-value < 0.00001, so statistically significant