**The project goal:**

Get use to analyze the data given as calculating the mean, the standard deviation and learning how to deal with deviant measurements appropriately as the data collected is too large in amount.

**Equipment used:**

Calipers or meter stick

Student ID card

**Measurement step:**

Use caliper to measure the length and width of the student ID card

- Calibrate the caliper to 00.00 mm

- Measure ID card

- Record the measure

**Result:**

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Length (mm) | Width (mm) | Area (mm2) |
| Melissa Zhang | 85.56 ± 0.01 | 53.90 ± 0.01 | 4612 ± 1.0 |
| Ryan Oakes | 85.16 ± 0.01 | 53.91 ± 0.01 | 4591 ± 1.0 |
| Tanner Thorton | 85.20 ± 0.01 | 53.90 ± 0.01 | 4592 ± 1.0 |
| Anh Hoang | 85.52 ± 0.01 | 53.88 ± 0.01 | 4608 ± 1.0 |
| Mean | 85.36 | 53.90 | 4600 |
| Standard Deviation | 0.2091 | 0.01258 | 10.81 |

**Solution Specification:**

Calculate the Area by multiply the Length with the Width

For calculating the mean, add up all the measurements and then divide that sum for the number of measurements. For example, for the length, add up 4 data and then divide for 4. Do the same thing for Width and Area

For calculating the Standard Deviation, calculate the mean, then for each data, subtract the mean and square the result, then work out the mean of those squared differences and take the square root.

For the propagation of error, calculated the Area propagation of error by using Fractional Multiplication add as squares

then