

Mean / Median

Mean = Average **np.average(array)**

Median **np.median(array)**

Mode **stats.mode(array)**

Mean = Average

Median = Center of a dataset

Mode = Most common value in a dataset

-> (**from scipy import stats**)

Range

min **np.amin(data)**

max **np.amax(data)**

range max - min

Variance

Variance

-> *Tells us how spread out the Data is*

Variance in numpy

```
variance = np.var(dataset)
```

Build Variance from ground up example

```
grades = [88, 82, 85, 84, 90]
```

```
mean = np.mean(grades)
```

When calculating these variables, square the difference.

```
difference_one = (88 - mean) ** 2
```

```
difference_two = (82 - mean) ** 2
```

```
difference_three = (85 - mean) ** 2
```

```
difference_four = (84 - mean) ** 2
```

```
difference_five = (90 - mean) ** 2
```

```
difference_sum = difference_one + ... + difference_five
```

```
variance = difference_sum / 5
```

Standard Deviation

Standard Deviation in numpy

```
dataset = [4, 8, 15, 16, 23, 42]
```

```
standard_deviation = np.std(dataset)
```

Histogram

Specify the Bin-Range

```
bin_range = (max_value - min_value + 1) / bins
```

Histogram

```
times_hist = np.histogram(data, range = (0, 24), bins = 4)
```

