Cheatography

SciPy Cheat Sheet

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1 Sample T-Test

```
from scipy.stats import ttest_1samp
tstat, pval = ttest_1samp(example_distribution, expected_mean)
-> Generates two outputs
-> tstat:t-statistic
-> pval: p-value
```

2 Sample T-Test

```
from scipy.stats import ttest_ind
tstat, pval = ttest_ind(data1, data2)
```

ANOVA

```
from scipy.stats import f_oneway
fstat, pval = f_oneway(data1, data2, data3)
```

Tukey's Range Test (not SciPy)

```
from statsmodels.stats.multicomp import pairwise_tukeyhsd
# All Data has to be unioned to one List
movie_scores = np.concatenate([drama_scores, comedy_scores, documentary_scores])
labels = ['drama'] * len(drama_scores) + ['comedy'] * len(comedy_scores) + ['documentary'] * len(documentary_scores)
tukey_results = pairwise_tukeyhsd(movie_scores, labels, 0.05)
-> 0.05 represents the significance level
```

Binomial Test

```
from scipy.stats import binom_test
pval = binom_test(successes, n, p)
successes: Number observed successes
n: Number of Trials
p: Expected probability for success
-> if pval < 0.05 we can reject the Null Hypothesis
```

Chi Square Test

```
from scipy.stats import chi2_contingency
_, pval, _, _ = chi2_contingency(iron_contingency_table)
```

Point Distance Functions

Import:	from scipy.spatial import distance
Euclidean	**distance.euclidean(pt1, pt2)**
Manhattan	**distance.cityblock(pt1, pt2)**
Hamming	**distance.hamming(pt1, pt2)**

Manhattan Distance: like calculating how many blocks are between two points

Hamming Distance: will always return a number between 0 and 1 --> The Hamming distance between [1, 2, 3] and [7, 2, -10] would be 2. In scipy's version, it would be 2/3

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