

# Resources

- <https://www.marsja.se/four-ways-to-conduct-one-way-anovas-using-python/>
- TowardsDS: Hypothesis testing in Machine learning using Python

	One Way ANOVA	Factorial ANOVA	Two Way ANOVA
Basic Description	Identifies differences between the means of 3+ Independent (unrelated) groups	Compares mean differences between groups split on two or more Independent variables	Special Case of Factorial ANOVA with 2 factors
Independent Variables (Factors)	1	2 or more (although 3/4 is usually the max due to complexity of interpreting results and higher probability of Type I errors)	2 IVs: Factor A (2 or more levels) crossed with Factor B (2 or more levels)
What is being compared in the test?	Means of three or more IV's groups on a dependent variable (although 2 groups is possible, 3 or more groups is the norm).	Effects of multiple groups of multiple IVs on a dependent variable, and on each other.	Effects of multiple groups of two IVs on a dependent variable, and on each other.
Assumptions	Continuous dependent variable Normality Sample independence Homogeneity of Variance	Continuous dependent variable Normality Sample independence Homogeneity of Variance Categorical independent variables	Continuous dependent variable Normality Sample independence Homogeneity of Variance Categorical independent variables