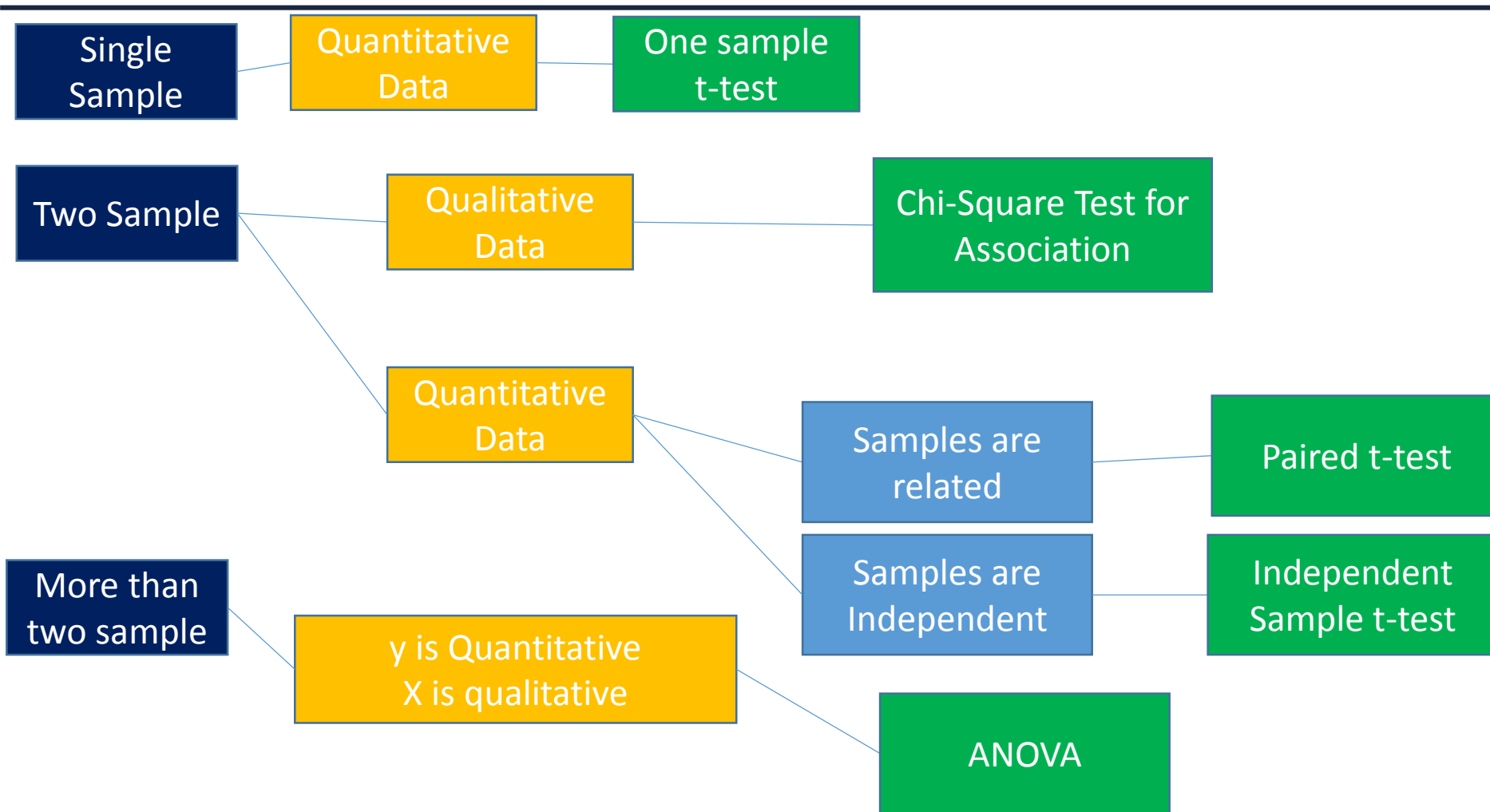


# Hypothesis Guideline

Prepared by

Stat Modeller

# Hypothesis Select Guideline



# Chi-Square Test for Association (goodness of fit)

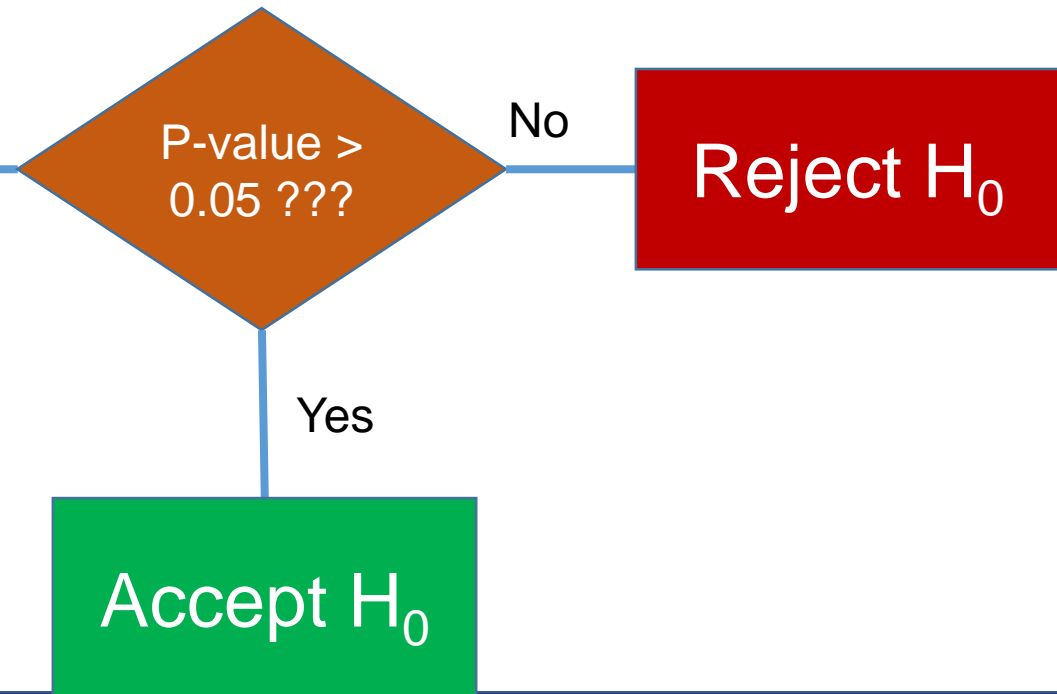
**When to use:** To check association between two nominal or ordinal variables

**Data Type :** Both the variables are of Nominal or Ordinal Type

**Examples:** Gender Vs. Smoking Habit, Education Vs. Socio Economic Status

**Graphical Tool:** Clustered Bar Chart

$H_0$ : There is not significant association between two nominal / ordinal variable  
 $H_1$ : There is significant association between two nominal/ ordinal variables



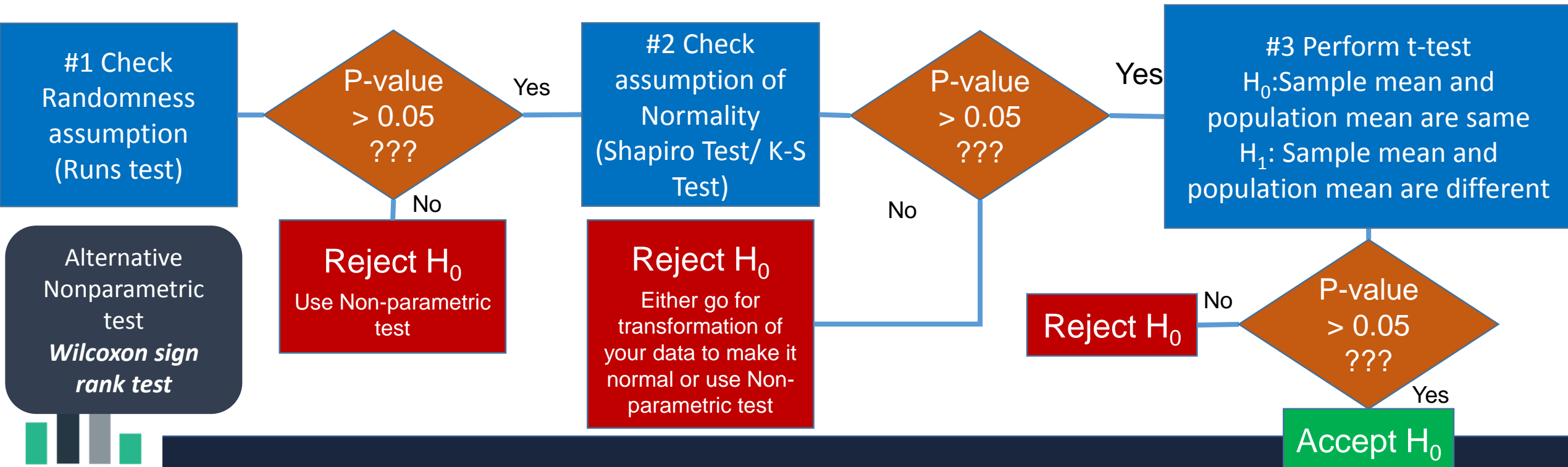
# One sample t-test

**When to use:** To check whether population mean is equal to the assumed mean or not

**Data Type :** Sample variable should be of quantitative (Interval/ Ratio) type

**Examples:** Average age of the people in city is 40 years, Average weight of cereal box is 500 grams etc.

**Graphical Tools:** Histogram, Boxplot



# Independent Sample t-test

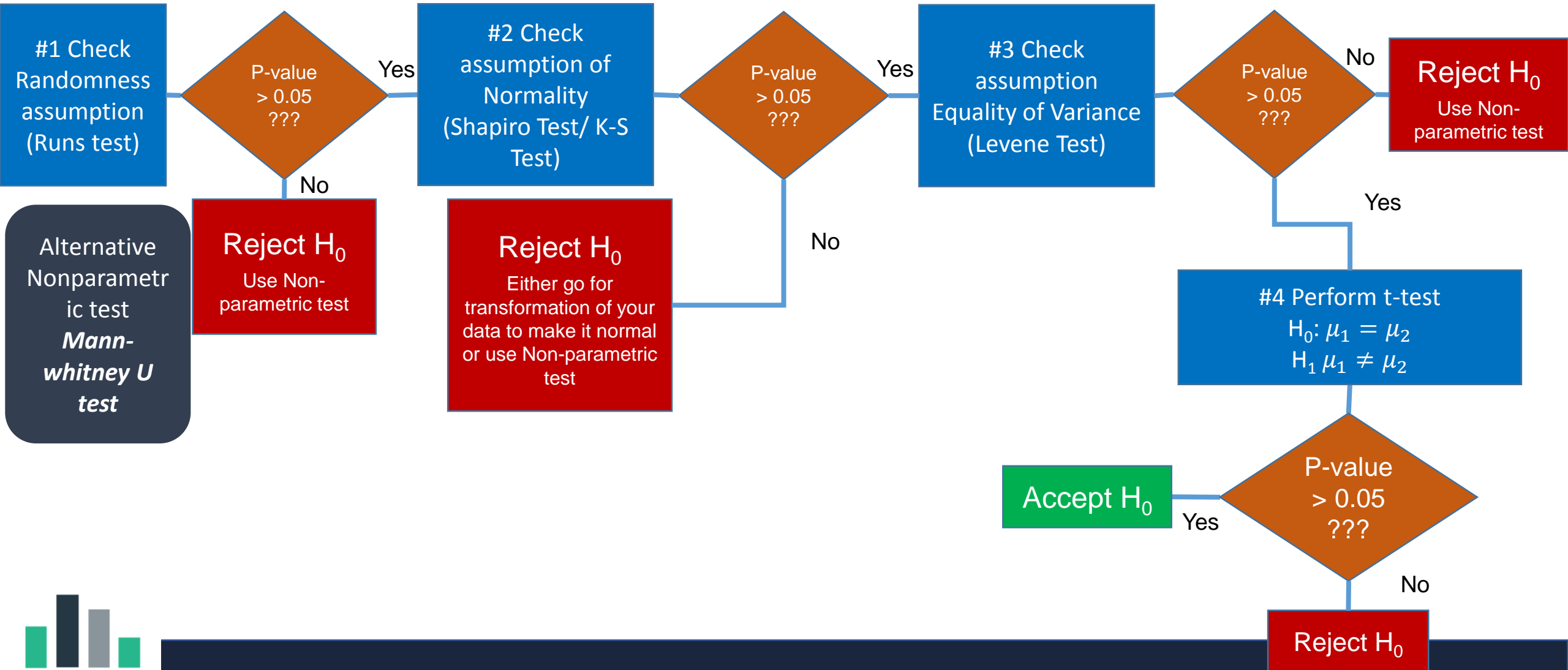
**When to use:** To check whether two population means are same or significantly different

**Data Type :** Both the sample variables should be of quantitative (Interval/ Ratio) type

**Examples:** Average BMI of male and female, Average income of male and female, average weight of the cereal box produced by machine 1 and machine 2

**Graphical Tools:** Histogram, Boxplot

# Independent Sample t-test



Alternative Nonparametric test  
**Mann-whitney U test**

# ANOVA

**When to use:** To check whether more than two population means are same or significantly different

**Data Type :** Dependent variable should be of quantitative (Interval/ Ratio) type and Independent variable (Factor) should be qualitative (Nominal/ Ordinal)

**Examples:** BMI Vs. People from different state, Income Vs. Education Level, Weight of the cereal box produced by different 5 machines

**Graphical Tools:** Boxplot, Means Plot

# ANOVA

