**Types of statistic testing**

**Parametric Tests**

1. **T-tests**:

* **One-sample t-test**: Tests if the mean of a single group is equal to a known mean.
* **Independent two-sample t-test**: Compares means between two independent groups.
* **Paired sample t-test**: Compares means from the same group at different times.

1. **Analysis of Variance (ANOVA)**:

* **One-way ANOVA**: Tests if there are any statistically significant differences between the means of three or more independent groups.
* **Two-way ANOVA**: Tests the effect of two independent variables on a dependent variable.
* **Repeated measures ANOVA**: Used for comparing means where the same subjects are used for each treatment.

1. **Regression Analysis**:

* **Simple linear regression**: Examines the relationship between two continuous variables.
* **Multiple linear regression**: Examines the relationship between a continuous dependent variable and two or more independent variables.
* **Logistic regression**: Used for binary dependent variables.

1. **Chi-Square Tests**:

* **Chi-square test of independence**: Tests if there is an association between two categorical variables.
* **Chi-square goodness of fit test**: Tests if sample data matches a population with a specific distribution.

**Non-Parametric Tests**

1. **Mann-Whitney U test**: Compares differences between two independent groups when the dependent variable is either ordinal or continuous but not normally distributed.
2. **Wilcoxon Signed-Rank Test**: Compares two related samples or repeated measurements on a single sample to assess whether their population mean ranks differ.
3. **Kruskal-Wallis H Test**: An extension of the Mann-Whitney U test for comparing more than two groups.
4. **Friedman Test**: A non-parametric alternative to the repeated measures ANOVA.
5. **Spearman's Rank Correlation**: Measures the strength and direction of association between two ranked variables.

**Proportion Tests**

1. **Z-test for proportions**: Used to determine whether there is a significant difference between the proportions of two groups.
2. **Fisher’s Exact Test**: Used for categorical data when sample sizes are small.

**Other Specialized Tests**

1. **Cochran's Q Test**: A non-parametric test for comparing three or more matched groups.
2. **McNemar's Test**: Used on paired nominal data to determine if there are differences on a dichotomous trait.

**Advanced Tests**

1. **Multivariate Analysis of Variance (MANOVA)**: Extends ANOVA to multiple dependent variables.
2. **Cox Proportional Hazards Model**: Used for survival analysis.
3. **Factor Analysis**: Used to identify underlying relationships between variables.