

# Package ‘statease’

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**Title** Simplified Statistical Analysis with Plain-English Interpretation

**Version** 1.0.0

**Description** A toolkit for common statistical analyses including descriptive statistics, Student's t-test (one-sample, independent, and paired), and one-way Analysis of Variance (ANOVA). Each function automatically interprets results in plain English, reporting effect sizes (Cohen's d, eta-squared), confidence intervals, and p-value interpretations. Post-hoc Tukey Honestly Significant Difference (HSD) tests are automatically applied following significant ANOVA results. A master function automatically detects the appropriate test based on the structure of the input data. Methods are based on Cohen, J. (1988) <doi:10.4324/9780203771587>, Tukey, J. W. (1949) <doi:10.2307/3001913>, and Shapiro and Wilk (1965) <

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**Encoding** UTF-8

**RoxygenNote** 7.3.3

**URL** <https://github.com/DevWebWacky/statease>

**BugReports** <https://github.com/DevWebWacky/statease/issues>

**NeedsCompilation** no

**Author** Uwakmfon Paul [aut, cre, cph]

**Maintainer** Uwakmfon Paul <uwakmfon31@gmail.com>

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`analyze`*Master Analysis Function - Auto-detects and runs the right test*

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**Description**

Master Analysis Function - Auto-detects and runs the right test

**Usage**

```
analyze(  
  x = NULL,  
  y = NULL,  
  data = NULL,  
  formula = NULL,  
  mu = 0,  
  paired = FALSE,  
  conf.level = 0.95,  
  var_name = "Variable"  
)
```

**Arguments**

<code>x</code>	A numeric vector (required always)
<code>y</code>	A numeric vector or factor/character group variable (optional)
<code>data</code>	A data frame (required if using a formula)
<code>formula</code>	A formula of the form <code>outcome ~ group</code> (optional)
<code>mu</code>	Hypothesised mean for one-sample t-test. Default 0.
<code>paired</code>	Logical. TRUE for paired t-test. Default FALSE.
<code>conf.level</code>	Confidence level. Default 0.95.
<code>var_name</code>	Optional label for the report.

**Value**

A printed analysis report

**Examples**

```
# Descriptive only  
analyze(x = c(23, 45, 12, 67, 34))  
  
# Auto t-test  
analyze(x = c(23,45,12,67,34), y = c(19,38,22,51,29))  
  
# Auto ANOVA  
df <- data.frame(  
  score = c(23,45,12,67,34,89,56,43,78,90,11,34),
```

```
  group = rep(c("A", "B", "C"), each = 4)
)
analyze(formula = score ~ group, data = df)
```

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anova_interpret	<i>One-Way ANOVA with Post-Hoc Tukey and Plain-English Interpretation</i>
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### Description

One-Way ANOVA with Post-Hoc Tukey and Plain-English Interpretation

### Usage

```
anova_interpret(formula, data, conf.level = 0.95)
```

### Arguments

formula	A formula of the form outcome ~ group
data	A data frame containing the variables
conf.level	Confidence level. Default 0.95

### Value

An object of class `statease_anova` containing ANOVA results, effect size, and post-hoc comparisons. Use `print()` to display the formatted report.

### Examples

```
df <- data.frame(
  score = c(23, 45, 12, 67, 34, 89, 56, 43, 78, 90, 11, 34),
  group = rep(c("A", "B", "C"), each = 4)
)
result <- anova_interpret(score ~ group, data = df)
print(result)
```

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`describe`*Descriptive Statistics with Interpretation*

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**Description**

Descriptive Statistics with Interpretation

**Usage**

```
describe(x, var_name = "Variable")
```

**Arguments**

<code>x</code>	A numeric vector
<code>var_name</code>	Optional name for the variable (used in the report)

**Value**

An object of class `statease_describe` containing descriptive statistics and interpretation. Use `print()` to display the formatted report.

**Examples**

```
result <- describe(c(23, 45, 12, 67, 34, 89, 56))  
print(result)
```

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`interpret_p`*Standalone P-Value Interpreter*

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**Description**

Standalone P-Value Interpreter

**Usage**

```
interpret_p(p, alpha = 0.05, context = NULL)
```

**Arguments**

<code>p</code>	A numeric p-value between 0 and 1
<code>alpha</code>	Significance level. Default 0.05
<code>context</code>	Optional string describing the test context

**Value**

An object of class `statease_pvalue` containing the p-value interpretation. Use `print()` to display the report.

**Examples**

```
result <- interpret_p(0.03)
print(result)

result2 <- interpret_p(0.12, alpha = 0.05, context = "treatment vs control")
print(result2)
```

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statease	<i>statease: Simplified Statistical Analysis with Plain-English Interpretation</i>
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**Description**

`statease` provides a suite of functions for performing common statistical analyses and automatically interpreting the results in plain English. It is designed for students, researchers, and educators who want fast, readable statistical output without sacrificing rigour.

**Main Functions**

[analyze](#) Master function — auto-detects and runs the right test  
[describe](#) Descriptive statistics with interpretation  
[ttest\\_interpret](#) T-tests (one-sample, independent, paired) with Cohen's d  
[anova\\_interpret](#) One-way ANOVA with Tukey post-hoc and eta squared  
[interpret\\_p](#) Standalone p-value interpreter

**Typical Workflow**

The simplest way to use `statease` is through the master `analyze()` function, which automatically detects what test to run based on your input:

```
# Descriptive statistics
analyze(x = my_vector, var_name = "My Variable")

# Independent samples t-test
analyze(x = group1, y = group2, var_name = "Scores")

# One-way ANOVA
analyze(formula = score ~ group, data = my_df)

# Interpret a p-value
interpret_p(0.03, context = "treatment vs control")
```

**Author(s)**

Uwakmfon Usen Paul

**See Also**

Useful links:

- <https://github.com/DevWebWacky/statease>
- Report bugs at <https://github.com/DevWebWacky/statease/issues>

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ttest\_interpret

*T-Test with Plain-English Interpretation*

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**Description**

T-Test with Plain-English Interpretation

**Usage**

```
ttest_interpret(  
  x,  
  y = NULL,  
  mu = 0,  
  paired = FALSE,  
  conf.level = 0.95,  
  var_name = "Variable"  
)
```

**Arguments**

x	A numeric vector (group 1, or the only group for one-sample)
y	A numeric vector (group 2, for independent samples). Default NULL.
mu	Hypothesised mean for one-sample t-test. Default 0.
paired	Logical. TRUE for paired t-test. Default FALSE.
conf.level	Confidence level. Default 0.95.
var_name	Optional label for the report. Default "Variable"

**Value**

An object of class `statease_ttest` containing test results and interpretation. Use `print()` to display the formatted report.

**Examples**

```
result <- ttest_interpret(c(23,45,12,67,34), c(19,38,22,51,29))  
print(result)
```

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