Package 'GoldenVizR'

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Type Package

Title Rule-Based Quality Checks for 'ggplot2' Visualizations Based on the 25 Golden Rules of Data Visualization

Version 0.1.0

Description Quality-checking tools for reviewing R data visualizations built with the 'ggplot2' library against the 25 GoldenViz rules described at <https://goldenviz.org/>. The package provides a visual QA and teaching layer that helps users identify common chart clarity, readability, and integrity issues.

License AGPL (>= 3)

Encoding UTF-8

Language en-US

Depends R (>= 4.1)

Imports ggplot2, htmltools

Suggests testthat (>= 3.0.0), knitr, rmarkdown, roxygen2

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URL https://github.com/WajdiBenSaad/GoldenViz_R

BugReports https://github.com/WajdiBenSaad/GoldenViz_R/issues

Config/Needs/website pkgdown

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Repository CRAN

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Contents

`analyze_plot` *Analyze a ggplot object with GoldenViz*

Description

Analyze a ggplot object and return structured GoldenViz feedback. The current implementation returns a plot-level summary and 25 ordered heuristic rule results with status counts.

Usage

```
analyze_plot(plot)
```

Arguments

`plot`	A `ggplot2` plot object.

Value

A `goldenviz_report` object. See `goldenviz_report` for the report schema and status definitions.

Examples

```
if (requireNamespace("ggplot2", quietly = TRUE)) {
  p <- ggplot2::ggplot(
    mtcars,
    ggplot2::aes(wt, mpg, colour = factor(cyl))
  ) +
    ggplot2::geom_point() +
    ggplot2::labs(
      title = "Fuel economy by weight",
      subtitle = "Motor Trend cars",
      x = "Weight",
      y = "Miles per gallon",
      colour = "Cylinders",
      caption = "Source: mtcars"
    )

  report <- analyze_plot(p)
```

```
  report$summary
  subset(report$rule_results, status != "PASS")
}
```

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goldenviz_check_rules *Run GoldenViz heuristic rule checks*

Description

Evaluates the 25 GoldenViz rules using a lightweight inspection list. The function is intentionally tolerant of missing fields: rules that cannot be assessed from the supplied `info` return `INFO` rather than failing.

Usage

```
goldenviz_check_rules(info = list())
```

Arguments

`info`	A named list produced by a plot inspection layer. Missing fields are allowed. Common fields include plot labels (`title`, `x_label`, `y_label`, `caption`), structural metadata (`layer_count`, `chart_type`), and optional inspection signals such as `palette_accessible`, `overplotting`, `scale_truthful`, and `framing_neutral`.

Value

A data frame with columns `id`, `family`, `rule`, `status`, and `message`. Exactly 25 rows are returned.

Status values

Rule statuses are:

- `PASS`: the supplied `info` satisfied the rule.
- `WARNING`: a potential issue was detected.
- `FAIL`: a stronger integrity or accessibility issue was detected.
- `INFO`: the rule could not be assessed from the supplied `info`.

Examples

```
# Advanced use: provide an inspection-like list directly.
# Most users should call analyze_plot() instead.
checks <- goldenviz_check_rules(list(
  title = "Fuel economy by weight",
  x_label = "Weight",
  y_label = "Miles per gallon",
  missing_values = FALSE,
  text_size = 11,
  scale_truthful = TRUE,
```

```
  framing_neutral = TRUE
))

checks[checks$status != "PASS", ]
```

`goldenviz_report` *GoldenViz report objects*

Description

A `goldenviz_report` is the structured result returned by `analyze_plot()`. It is a list with stable top-level fields intended for programmatic use.

Report schema

A report contains:

- `plot_summary`: a named list of plot metadata, including labels, layer count, geom names, data dimensions, facet class, and coordinate class.
- `rule_results`: a data frame with one row per GoldenViz rule and columns `rule_id`, `family`, `rule`, `status`, `message`, and `suggestion`. The `rule_id` column is the public rule identifier.
- `status_counts`: a named integer vector with counts for `PASS`, `WARNING`, `FAIL`, and `INFO`.
- `summary`: a one-row data frame with aggregate counts and the current report-level `status`.

Rule result statuses

Rule-level `status` values are:

- `PASS`: the available inspection data satisfied the rule.
- `WARNING`: the rule found a potential issue to review.
- `FAIL`: the rule found a stronger integrity or accessibility issue.
- `INFO`: the rule could not be assessed from the available inspection data.

Report-level `summary$status` values are derived from rule-level statuses: `fail` if any rule fails, `warning` if any rule warns, `pending_checks` if any rule remains informational, and `pass` otherwise.

goldenviz_rules *GoldenViz rule registry*

Description

Returns the current 25-rule structure used by GoldenViz, grouped into Completeness, Readability, and Integrity.

Usage

```
goldenviz_rules()
```

Value

A data frame with one row per rule and columns:

- `id`: stable rule identifier, currently `R1` through `R25`.
- `family`: rule family, one of `Completeness`, `Readability`, or `Integrity`.
- `rule`: human-readable rule label.

Examples

```
rules <- goldenviz_rules()
rules

split(rules[, c("id", "rule")], rules$family)
```

render_report *Render a GoldenViz report as HTML*

Description

Render a GoldenViz report as HTML

Usage

```
render_report(report, include_passed = TRUE)
```

Arguments

`report`	A `goldenviz_report` object returned by `analyze_plot()`.
`include_passed`	Whether passed checks should be included.

Value

An `htmltools` browsable tag object.

save_report *Save a GoldenViz report as standalone HTML*

Description

Save a GoldenViz report as standalone HTML

Usage

```
save_report(report, path = "goldenviz-report.html", include_passed = TRUE)
```

Arguments

report	A goldenviz_report object returned by analyze_plot().
path	Output HTML path.
include_passed	Whether passed checks should be included.

Value

Invisibly returns path.

view_report *View a GoldenViz report*

Description

View a GoldenViz report

Usage

```
view_report(report, include_passed = TRUE)
```

Arguments

report	A goldenviz_report object returned by analyze_plot().
include_passed	Whether passed checks should be included.

Value

Invisibly returns the rendered report.

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