Package 'huito'

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Type Package

Version 0.2.8

Title Reproducible and Flexible Label Design

Description An open-source R package to deploys reproducible and flexible labels using layers. The 'huito' package is part of the 'inkaverse' project for developing different procedures and tools used in plant science and experimental designs.
Learn more about the 'inkaverse' project at <https://inkaverse.com/>.

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URL https://huito.inkaverse.com/, https://github.com/Flavjack/huito

BugReports https://github.com/Flavjack/huito/issues

Depends magick, cowplot, ggplot2, dplyr, R (>= 2.10)

Imports tidyr, tibble, purrr, sysfonts, showtext, qrcode, pdftools

Suggests knitr, rmarkdown, quarto, gsheet, inti

VignetteBuilder knitr, quarto

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Encoding UTF-8

SystemRequirements pandoc

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NeedsCompilation no

Author Flavio Lozano-Isla [aut, cre] (ORCID:
<https://orcid.org/0000-0002-0714-669X>),
Victor-Hugo Baldera-Chapoñan [aut] (ORCID:
<https://orcid.org/0009-0003-4321-7103>),
Inkaverse [cph]

Maintainer Flavio Lozano-Isla <flozanoisla@gmail.com>

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`barcode_qr` *Barcode generator*

Description

Generate bar codes using QR codes

Usage

```
barcode_qr(text, color = "black", alpha = 1, ecl = "H")
```

Arguments

`text`	text to convert to QR bar code
`color`	Bar code color
`alpha`	Intensity of the bar code color
`ecl`	Error correction level (percentage). "L" (7), "M" (15), "Q" (25) and "H" (30). Defaults to "H"

Value

plot

Examples

```
library(huito)

barcode_qr("LIMA-2021-11-03_15_3_4")
```

fieldbook *Fieldbook experimental design*

Description

The dataset were obtained using inti package. The data set is a randomize complete block design (RCBD) with three replications.

Usage

```
fieldbook
```

Format

A data frame with 24 rows and 5 variables:

barcode barcode for each experimental unit

plots Plot number

block Blocks (3): number of replication in the design

condition Factor with two levels: irrigated and drought

genotypes Factor with four levels: choclito, salcedo, pandela, puno

huito_fonts *Fonts import*

Description

Import fonts from Google fonts

Usage

```
huito_fonts(fonts = NA)
```

Arguments

fonts	fonts names

Details

For more fonts visit: https://fonts.google.com/

Value

fonts

image_import *Image import*

Description

Import images and apply R magick functions

Usage

```
image_import(image, opts = NA)
```

Arguments

image	image path or URL
opts	R magick functions by layers

Value

image

include_barcode *Barcode layer*

Description

Insert barcode in label

Usage

```
include_barcode(
  label,
  value,
  size,
  position = NA,
  type = "static",
  color = "auto",
  units = "cm"
)
```

Arguments

label	label output
value	column or path
size	image size
position	position coordinate
type	type of entry: dynamic or static
color	image color
units	units for the label options

Value

data frame

---

include_image *Image layer*

Description

Insert image in label

Usage

```
include_image(
  label,
  value,
  size,
  position = NA,
  type = "static",
  units = "cm",
  opts = NA
)
```

Arguments

label	label output
value	column or path
size	image size
position	position coordinate
type	type of entry: dynamic or static
units	units for the label options
opts	R magick functions

Value

data frame

Examples

```
library(huito)

label <- label_layout(size = c(10, 2.5), border_color = "blue") %>%
  include_image(
    value = "https://flavjack.github.io/inti/img/inkaverse.png"
    , size = c(2.4, 2.4)
    , position = c(1.2, 1.25)
    )
```

`include_shape` *Shape layer*

Description

Insert shape in label

Usage

```
include_shape(
  label,
  value = "hexagon",
  size = 5.08,
  position = NA,
  border_color = "black",
  border_width = 1,
  background = NA,
  units = "cm",
  panel_color = NA,
  panel_size = NA
)
```

Arguments

`label`	label output (table)
`value`	type of shape (string: "hexagon")
`size`	shape size (numeric: 5.08)
`position`	position coordinate (numeric: NA)
`border_color`	image color (string: "black")
`border_width`	shape line width (numeric: 1)
`background`	background color (string: "red")

units	units for shape (string: "cm")
panel_color	panel color (string: NA)
panel_size	panel size (numeric: NA)

Value

data frame

Examples

```
library(huito)

label <- label_layout(data = NA
               , size = c(10, 2.5)
               , background = "yellow"
               ) %>%
         include_shape(
               value = "hexagon"
               , position = c(1.2, 1.25)
               , background = "red"
               , border_width = 1
               , size = 2.4
               #, panel_size = 2.4*1.157175
               )

label %>% label_print("sample")

ts <- label$opts
```

---

include_text *Text layer*

Description

Insert text in label

Usage

```
include_text(
  label,
  value,
  prefix = "",
  position = NA,
  fontface = "plain",
  size = 11,
  font = NA,
  type = "static",
```

```
  color = NA,
  angle = 0,
  opts = NA
)
```

Arguments

label	label output
value	column or string
prefix	Prefix for the dynamic text
position	position coordinate
fontface	font type [character: plain, bold, italic]
size	text size
font	font type
type	type of entry [character: dynamic or static]
color	image color
angle	angle of the text
opts	list arguments from draw_label()

Value

data frame

---

label_layout *Label layout*

Description

Generate labels options

Usage

```
label_layout(
  data = NA,
  size,
  border_width = NA,
  border_color = "black",
  background = NA,
  units = "cm"
)
```

Arguments

data	data frame to build the labels
size	label size (numeric: c(10, 2.5))
border_width	border width (numeric: 0.5)
border_color	border color (string: "transparent")
background	background color (string: "transparent")
units	units for the label options (string: "cm")

Value

data frame

Examples

```
library(huito)

label <- label_layout(size = c(10, 2.5)
                      , border_color = "red"
                      , border_width = 1
                      )

label %>% label_print()
```

---

label_print *Label print*

Description

Generate labels based in a data frame

Usage

```
label_print(
  label,
  mode = "sample",
  filename = "labels",
  margin = 0.04,
  paper = c(21, 29.7),
  units = "cm",
  viewer = FALSE,
  smpres = 200,
  nlabels = NA,
  dpi = 300,
  rasterize = FALSE
)
```

Arguments

label	Data frame to build the labels or n repeated labels (table/numeric)
mode	Label generation (string: "sample/preview", "complete")
filename	Labels file name (string: "labels")
margin	Labels margins. margin(numeric vector: t = 0, r = 0, b = 0, l = 0)
paper	Paper size. Default A4 (numeric vector: 21.0 x 29.7)
units	Units for the label options (string: "cm")
viewer	Visualization of the label (logial: FALSE)
smpres	Sample resolution if viewer = TRUE (numeric: 200)
nlabels	Number of labels to generate (numeric: NA)
dpi	Output resolution in dots per inch for rasterized elements
rasterize	Rasterize the entire label before exporting to PDF (logical: FALSE)

Value

pdf

Examples

```
library(huito)

fb <- fieldbook

label <- fb %>%
  label_layout(size = c(10, 2.5)
               , border_color = "blue"
               ) %>%
  include_image(
    value = "https://flavjack.github.io/inti/img/inkaverse.png"
    , size = c(2.2, 2.4)
    , position = c(1.2, 1.25)
    #, opts = list("image_rotate(0)", "image_charcoal()")
    ) %>%
  include_barcode(
    value = "barcode"
    , size = c(2.5, 2.5)
    , position = c(8.2, 1.25)
    ) %>%
  include_text(value = "plots"
               , prefix = "Plot: "
               , position = c(9.7, 1.25)
               , angle = 90
               , size = 15
               , color = "red"
               ) %>%
  include_text(value = "Inkaverse"
               , position = c(4.6, 2)
               , size = 30
```

```
                , color = "brown"
                , fontface = "italic"
                ) %>%
    include_text(value = "condition"
                , position = c(4.6, 1.2)
                , size = 13
                , color = "orange"
                , prefix = "Tratamiento: "
                ) %>%
    include_text(value = "genotypes"
                , position = c(4.6, 0.5)
                , size = 13
                , color = "#009966"
                )

  label %>% label_print(mode = "sample")
```

---

shape_hexagon *Shape hexagon*

Description

Hexagon geom shape for ggplot2

Usage

```
shape_hexagon(
  size = 5.08,
  border_width = NA,
  background = NA,
  border_color = "black",
  units = "cm",
  panel_color = "green",
  panel_size = NA
)
```

Arguments

size	hexagon size (numeric: 5.08)
border_width	line width (numeric: 1)
background	background color (string: "transparent")
border_color	border color (string: "black")
units	units for shape (string: "cm")
panel_color	panel color (string: "green")
panel_size	panel size (numeric: NA)

Value

geom

Examples

```
library(huito)

shape_hexagon(border_width = 1
              , background = "red"
              #, panel_size = 5.08
              )
```

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