Package 'ggChinaFlag'

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Type Package

Title Drawing Chinese National and Historical Flags with 'ggplot2'

Version 0.2.0

Description Provides programmatic implementations for drawing Chinese national and historical flags using analytic geometry and 'ggplot2'-based vector graphics. Flag designs are constructed entirely from geometric primitives such as polygons and rectangles, without relying on external image files. The package is intended for educational demonstration, reproducible visualization, and procedural graphics in R.

License GPL-3

Encoding UTF-8

Imports ggplot2, dplyr, showtext, ggforce

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URL https://github.com/XLions/ggChinaFlag

BugReports https://github.com/XLions/ggChinaFlag/issues

NeedsCompilation no

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Contents

`FlagStorage` *Built-in Chinese and English names of the flags*

Description

Provides a standardised list of flag names used by `plotCNFlag` and related functions. It contains the names of the national flag of the People's Republic of China, several historical flags of the Republic of China, and the party flags of the Communist Party of China and the Kuomintang, in both Chinese and English.

Usage

```
FlagStorage(lang = c("Chinese", "English"))
```

Arguments

`lang`	Character string giving the language of the returned names. Either `"Chinese"` (default) or `"English"`.

Value

A `list` of two named character vectors. With `lang = "Chinese"` the elements hold the Chinese national-flag and political-party names; with `lang = "English"` they are named `National Flags` and `Political Parties`. The strings in each vector correspond one-to-one to the underlying plotting functions.

See Also

`plotCNFlag`, which matches against these names.

Examples

```
# Chinese names
FlagStorage()

# English names
FlagStorage(lang = "English")
```

plotCNFlag *Plot a Chinese national or historical flag by name*

Description

A unified interface that dispatches to the appropriate low-level plotting function based on the supplied flag name (Chinese or English) and returns a ggplot object.

Usage

```
plotCNFlag(input, label = TRUE)
```

Arguments

input	Character string giving the flag to plot, either a Chinese or an English name; see FlagStorage for the supported names.
label	Logical; whether to display the title and text annotations. Default is TRUE.

Details

The function obtains the built-in name list via FlagStorage, detects the input language, matches the name, and forwards to one of plot_P.R.CHINA_flag, plot_ROC_KMT_flag, plot_ROC_Beiyang_flag, plot_Han18Star, plot_CCP or plot_KMT. An unrecognised name raises an error.

Value

A ggplot object, which can be printed directly or saved with ggsave().

See Also

FlagStorage for the name list, and the underlying plotting functions such as plot_P.R.CHINA_flag.

Examples

```
plotCNFlag("Flag of the People's Republic of China")
plotCNFlag("Flag of the Kuomintang (Blue Sky and White Sun flag)", label = FALSE)
plotCNFlag("Five-Color Flag of the Beiyang Government of the Republic of China")
plotCNFlag("Iron-Blood 18-Star Flag of the Wuchang Uprising")
```

plot_CCP *Plot the emblem or flag of the Communist Party of China (CCP)*

Description

This function programmatically renders the emblem of the Communist Party of China using analytic geometry and ggplot2-based vector graphics. The symbol is constructed entirely from geometric primitives (arcs, polygons, and rectangles), without relying on any external image files.

Usage

```
plot_CCP(plot_type = "flag", label = FALSE)
```

Arguments

plot_type	Character string specifying the rendering mode. Either "flag" (default) or "logo".
label	Logical value indicating whether to display textual annotations (title and axis labels). Default is FALSE.

Details

Two rendering modes are supported:

- "flag": A rectangular background with a 3:2 aspect ratio, suitable for flag-style visualization.
- "logo": A square (1:1) background, suitable for emblem or logo-style visualization.

The geometric construction follows a stepwise layering strategy, including the outer and inner arcs of the sickle, the handle, and the hammer body. All coordinates are transformed into a unified plotting coordinate system.

Value

A ggplot object representing the CCP emblem or flag.

Author(s)

Per the regulations on the emblem and flag of the Communist Party of China.

See Also

plotCNFlag for the unified flag plotting interface.

Examples

```
plot_CCP(plot_type = "flag")
plot_CCP(plot_type = "logo")
```

plot_Han18Star *Plot the Iron-Blood 18-Star Flag of the Wuchang Uprising*

Description

Draws the Iron-Blood 18-Star Flag (also called the Nine-Pointed Eighteen-Star Flag) used by the Hubei military government after the Wuchang Uprising of the Xinhai Revolution. The flag has a red field, a central black nine-pointed star, and nine inner and nine outer yellow dots representing the eighteen Han provinces of the time. All shapes are generated by vector computation, without external image files.

Usage

```
plot_Han18Star(label = TRUE)
```

Arguments

`label`	Logical; whether to display the title and explanatory text. `TRUE` (default) shows the title, designer and historical background; `FALSE` draws only the flag.

Details

- The aspect ratio is 5:8; x ranges over [-80, 80], y over [-50, 50].
- The nine-pointed star has a circumscribed radius of 44 units and an inner radius of 8 units.
- Nine outer yellow dots sit along the star tips; nine inner dots sit midway between the centre and the tips.
- `ggplot2::coord_fixed(ratio = 1)` keeps the proportions fixed.
- Axes, grid and legend are hidden by default.

Value

A `ggplot` object, which can be printed or saved with `ggsave()`.

Author(s)

Flag design: the Chinese Revolutionary Alliance (Tongmenghui).

References

https://www.19111010.com.tw/story?id=93

See Also

`geom_polygon`, `geom_circle`, `plot_P.R.CHINA_flag`, `plot_ROC_Beiyang_flag`, `plot_ROC_KMT_flag`

Examples

```
plot_Han18Star()
plot_Han18Star(label = FALSE)
```

`plot_KMT` *Plot the Blue Sky with a White Sun flag (Kuomintang / Republic of China)*

Description

This function programmatically renders the Blue Sky with a White Sun symbol using analytic geometry and ggplot2-based vector graphics. The emblem consists of a blue background and a twelve-rayed white sun, constructed entirely from geometric primitives such as polygons, circles, and arcs, without relying on any external image files.

Usage

```
plot_KMT(label = TRUE)
```

Arguments

`label`	Logical value indicating whether to display textual annotations (title and axis labels). Default is `TRUE`.

Details

The geometric construction follows the official construction sheets and historical specifications of the flag, ensuring proportional accuracy of the twelve rays and concentric circles.

The twelve-rayed sun is constructed by alternating outer and inner vertices arranged in clockwise order, forming a closed polygon. Two concentric circles are then overlaid to form the central white sun core.

Value

A `ggplot` object representing the Blue Sky with a White Sun flag.

Author(s)

Design: Lu Haodong.

References

Wikipedia contributors. Flag of the Republic of China. https://en.wikipedia.org/wiki/Flag_of_the_Republic_of_China

Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Flag_of_the_Republic_of_China_construction_sheet.svg

See Also

plotCNFlag for the unified flag plotting interface.

Examples

```
plot_KMT()
plot_KMT(label = FALSE)
```

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plot_P.R.CHINA_flag *Plot the national flag of the People's Republic of China*

Description

Draws the national flag of the People's Republic of China at the regulation proportions using pure geometric computation and ggplot2. The shape and orientation of the stars are computed analytically so that each small star points to the centre of the large star. No external image or SVG resources are used, which makes the function suitable for teaching and programmatic graphics.

Usage

```
plot_P.R.CHINA_flag(label = TRUE)
```

Arguments

label	Logical; whether to display the title and axis text. If TRUE (default) the title, designer and reference information are shown; if FALSE only the flag is drawn.

Details

- The flag has a 3:2 aspect ratio.
- The large star is placed in the upper-left canton.
- The four small stars are positioned per the specification and rotated to point at the large star.
- ggplot2::coord_quickmap() keeps a 1:1 x:y ratio.

Value

A ggplot object, which can be printed directly or saved with ggsave().

Author(s)

Flag design: Zeng Liansong.

See Also

geom_polygon, coord_quickmap

Examples

```
plot_P.R.CHINA_flag()
plot_P.R.CHINA_flag(label = FALSE)
```

`plot_ROC_Beiyang_flag` *Plot the Five-Colored Flag of the Beiyang Government*

Description

Draws the Five-Colored Flag used during the Beiyang Government period (circa 1912-1928) of the Republic of China, using horizontal colour bands rendered with `ggplot2`. The flag has five equal horizontal stripes in red, yellow, blue, white and black, symbolising the Han, Manchu, Mongol, Hui and Tibetan peoples. The drawing is fully programmatic and uses no external image resources.

Usage

```
plot_ROC_Beiyang_flag(label = TRUE)
```

Arguments

`label`	Logical; whether to display the title and explanatory text. `TRUE` (default) shows the title and annotations; `FALSE` draws only the flag.

Details

- The flag is built from five equal-height horizontal rectangles.
- From top to bottom the colours are red, yellow, blue, white, black.
- These represent the Han, Manchu, Mongol, Hui and Tibetan peoples.
- `ggplot2::coord_quickmap()` keeps the proportions undistorted.
- Axes, grid and legend are hidden.

Value

A `ggplot` object, which can be printed or saved with `ggsave()`.

Author(s)

Historical flag of the Beiyang Government era.

See Also

`geom_rect`, `coord_quickmap`

Examples

```
plot_ROC_Beiyang_flag()
plot_ROC_Beiyang_flag(label = FALSE)
```

---

plot_ROC_KMT_flag *Plot the Blue Sky, White Sun, and a Wholly Red Earth flag*

Description

Programmatically draws the Blue Sky, White Sun, and a Wholly Red Earth flag used during the Nationalist Government period (1928-1949) of the Republic of China, using analytic geometry with `ggplot2` and `ggforce`. The flag has a red field, a blue canton in the upper-left, and a twelve-rayed white sun within the canton, all generated from vector geometry without external image files.

Usage

```
plot_ROC_KMT_flag(label = TRUE)
```

Arguments

`label`	Logical; whether to display the title and explanatory text. `TRUE` (default) shows the title, designer and period; `FALSE` draws only the flag.

Details

- The red field and blue canton are built from rectangles.
- The twelve-rayed sun is a closed polygon of 24 vertices.
- Two concentric circles form the core of the white sun.
- `ggplot2::coord_quickmap()` keeps the proportions undistorted.
- Axes, grid and legend are hidden by default.

Value

A `ggplot` object, which can be printed or saved with `ggsave()`.

Author(s)

Design: Sun Yat-sen (proposal) and Lu Haodong (Blue Sky, White Sun).

See Also

`geom_polygon`, `geom_rect`, `geom_circle`

Examples

```
plot_ROC_KMT_flag()
plot_ROC_KMT_flag(label = FALSE)
```

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