Package 'earthtones'

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Title Derive a Color Palette from a Particular Location on Earth

Version 0.2.0

Description Downloads a satellite image via ESRI and maptiles (these are originally from a variety of aerial photography sources), translates the image into a perceptually uniform color space, runs one of a few different clustering algorithms on the colors in the image searching for a user-supplied number of colors, and returns the resulting color palette.

Depends R (>= 3.1.0)

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Encoding UTF-8

Imports maptiles, terra, sf, grDevices

Suggests testthat, cluster, knitr, rmarkdown, ggplot2

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

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`get_earthtones` *Extract Color Palettes from Satellite Imagery*

Description

Download a satellite image from a selected provider, extract dominant colors, and generate an earth-tone palette.

Usage

```
get_earthtones(
  latitude = 50.759,
  longitude = -125.673,
  zoom = 11,
  number_of_colors = 3,
  method = "pam",
  sampleRate = 500,
  include.map = TRUE,
  provider = "Esri.WorldImagery",
  ...
)
```

Arguments

`latitude`	Numeric. Latitude coordinate for the center of the satellite image.
`longitude`	Numeric. Longitude coordinate for the center of the satellite image.
`zoom`	Numeric. Zoom level between 0 (whole world) and 13 (high detail). Higher values zoom in closer.
`number_of_colors`	Numeric. Number of dominant colors to extract.
`method`	Character. Clustering method to identify dominant colors. Options are `"kmeans"` (`kmeans`) or `"pam"` (`pam` - partitioning around medoids).
`sampleRate`	Numeric. Subsampling factor; higher values reduce computation by sampling fewer pixels.
`include.map`	Logical. If `TRUE`, returns both the color palette and the satellite image raster. If `FALSE`, returns only the color palette.
`provider`	Character. Tile provider for satellite imagery. Currently supports `"Esri.WorldImagery"`.
`...`	Additional arguments passed to internal functions (currently unused).

Details

The function retrieves satellite imagery from the specified provider, extracts colors by converting the imagery into a perceptually uniform color space, and applies a clustering algorithm to determine dominant colors. Zoom level and location significantly influence the palette generated.

Value

An object of class "palette" if include.map = TRUE, containing:

- pal: A vector of hexadecimal color codes representing the dominant colors.
- map: A raster image object of the satellite imagery.

If include.map = FALSE, returns a vector of hexadecimal color codes.

See Also

get_tiles, kmeans, pam

Examples

```
## Not run:
# Get a palette for a location in the Bahamas
get_earthtones(latitude = 24.2, longitude = -77.88, zoom = 11, number_of_colors = 5)

# Return palette only, without map
get_earthtones(latitude = 24.2, longitude = -77.88,
               zoom = 11, number_of_colors = 5, include.map = FALSE)

## End(Not run)
```

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print.palette *Print Method for Palette Objects*

Description

Visualizes the palette and associated satellite image.

Usage

```
## S3 method for class 'palette'
print(x, ...)
```

Arguments

x	An object of class "palette".
...	Additional arguments passed to plotting methods.

Value

No return value; called for its side effect of plotting.

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