

Package ‘APfun’

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Type Package

Title Geo-Processing Helper Functions

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Description Helper tools for facilitating basic geo-processing tasks, such as reading/writing Shapefiles, merging polygons or generating terrain contours.

Depends R (>= 3.4.0)

License GPL (>= 3)

LazyData TRUE

RoxygenNote 7.1.1

Suggests testthat

Imports sp, raster, rgdal, methods, maptools, withr

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APcontours	<i>AP Contours</i>
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Description

Creates contours with rounded values

Usage

APcontours(inRaster, interval, max.contour.segments = NULL)

Arguments

inRaster	RasterLayer. A digital surface or digital elevation model
interval	numeric. Interval for contour intervals
max.contour.segments	numeric. Maximum number of segments for a single contour line. If set to 'NULL', default value will be 25,000.

APopen	<i>AP Folder Open</i>
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Description

Open a folder in Windows Explorer

Usage

APopen(x)

Arguments

x	character. File path. If path leads to a directory, it will open that directory. If it directs to a file, it will open that file's directory
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APpolygonize

AP Polygonize

Description

This function uses the *gdal_polygonize.py* GDAL utility. Its implementation was adapted from the solution developed by John Baumgartner and Francisco Rodriguez-Sanchez.

Usage

```
APpolygonize(  
    inRaster,  
    readToMemory = TRUE,  
    outFile = NULL,  
    OSGeoPath = "C:/OSGeo4W64",  
    connectivity = 4  
)
```

Arguments

<code>inRaster</code>	a RasterLayer or a path to a raster file
<code>readToMemory</code>	logical. Read output polygons into memory as a SpatialPolygonsDataFrame
<code>outFile</code>	character. Optional path for saving output as an Esri Shapefile.
<code>OSGeoPath</code>	character. Path to the OSGeo4W installation directory
<code>connectivity</code>	numeric. Can be either set to 4 (rook's case) or 8 (queen's case)

Details

This function needs OSGeo4W to be installed. The OSGeo4W installation path, set to 'C:/OSGeo4W64' by default, will then be used to find the *gdal_polygonize.bat* file.

Value

SpatialPolygonsDataFrame

See Also

- GDAL: <https://gdal.org/>
- OSGeo4W download page: <https://trac.osgeo.org/osgeo4w/>
- John Baumgartner's blog post on *gdal_polygonize*: <https://johnbaumgartner.wordpress.com/2012/07/26/getting-rasters-into-shape-from-r/>

 APpolyMerge

Merge polygons

Description

Take a List of SpatialPolygonsDataFrame objects and merge them. This function automates the process of assigning new polygon IDs, which is usually the issue that prevents merging.

Usage

```
APpolyMerge(polyList, newID = FALSE)
```

Arguments

polyList	List. a List of SpatialPolygonsDataFrame objects
newID	logical. If TRUE, the polygon IDs in polyList will be replaced to prevent duplicate IDs.

Value

A merged SpatialPolygonsDataFrame

APprecise

AP Precision

Description

Prints input value with a set number digits.

Usage

```
APprecise(x, digits = 16)
```

Arguments

x	numeric. Input value value
digits	numeric. Number of digits to display

 APrasterFiles

AP Get Raster Files

Description

Get list of auxiliary raster files

Usage

```
APrasterFiles(filePath)
```

Arguments

filePath character. Path to file

Examples

```
## Not run:
APSHFiles("C:/Geodata/myfile.shp")

## End(Not run)
```

 AProunder

AP Rounder

Description

Provides extra options for rounding numbers, such as rounding a value to uneven intervals and setting those intervals to 'snap' or pass through a defined origin value. Can also be used on Extent objects from the raster package.

Usage

```
AProunder(value, interval, direction = "closest", snap = 0)
```

Arguments

value numeric or Extent object. Input value
 interval numeric. The interval to which the input value should be rounded
 direction character. The rounding direction. Can be 'closest', 'up' or 'down' for numeric value arguments or 'closest', 'in' or 'out' for Extent objects.
 snap numeric. An origin value through which the interval with pass through. Default is 0.

Value

Rounded number or Extent object

APSHPdel

AP Delete Shapefile

Description

Delete a Shapefile and all associated files

Usage

```
APSHPdel(filePath)
```

Arguments

filePath character. Path to file

Examples

```
## Not run:  
APSHPdel("C:/Geodata/myfile.shp")  
  
## End(Not run)
```

APSHPfiles

AP Get Shapefile files

Description

Get all files associated to a shapefile

Usage

```
APSHPfiles(filePath)
```

Arguments

filePath character. Path to file

Examples

```
## Not run:  
APSHPfiles("C:/Geodata/myfile.shp")  
  
## End(Not run)
```

APSHPread	<i>AP Read Shapefile</i>
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Description

Read a Shapefile from a path

Usage

```
APSHPread(filePath, warnings = FALSE)
```

Arguments

filePath	character. Path to file
warnings	logical. If FALSE, then warnings will be suppressed

Value

SpatialPolygonsDataFrame

Examples

```
## Not run:  
inPoly <- APSHPread("C:/Geodata/myfile.shp")  
  
## End(Not run)
```

APSHPSave	<i>AP Save to SHP</i>
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Description

Save a Spatial type object to disk as a Shapefile.

Usage

```
APSHPSave(object, outfile, overwrite = FALSE)
```

Arguments

object	a Spatial object
outfile	path for file to be saved
overwrite	logical. Allow function to overwrite existing file. If set to 'prompt', it will ask user whether or to overwrite

Examples

```
## Not run:
APSHPSave(inPoly, outfile = "C:/Geodata/myfile.shp")

## End(Not run)
```

 APTimer

AP Timer

Description

Basic timer.

Usage

```
APTimer(marker = NULL, hush = FALSE)
```

Arguments

marker Optional object of class 'POSIXct'.

hush logical. If set to TRUE, this will silence printing to console.

Value

If marker=NULL, then APTimer returns an object of class 'POSIXct'. When this same object is used as an input later on, then APTimer will print the time elapsed since it was evaluated.

 rasterExtensions

Raster Extensions

Description

A list object, for which each element corresponds to a type of raster file. The elements are character vectors of the extensions of the various metadata files that can be associated with that type of raster.

Usage

```
rasterExtensions
```

Format

```
list
```

SHPextensions

Shapefile extensions

Description

A vector of extensions for the various file types associated with Esri Shapefiles.

Usage

SHPextensions

Format

Character vector

Source

<https://en.wikipedia.org/wiki/Shapefile>

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