Package 'APfun'

April 3, 2018

Type Package

Title Geo-Processing Helper Functions

Version 0.1.3

Date 2018-03-31

Author Andrew Plowright

Maintainer Andrew Plowright <andrew.plowright@alumni.ubc.ca>

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 6.0.1

Suggests testthat

Imports sp, raster, rgdal, methods, yesno, maptools

NeedsCompilation no

Repository CRAN

Date/Publication 2018-04-03 21:03:24 UTC

R topics documented:

APcontours 2
APKML2SHP 2
APopen 3
APpolygonize 3
APpolyMerge 4
APprecise 5
AProunder 5
APSHPdel 6
APSHPfiles 6
APSHPread 7
APSHPsave 7

APtimer 8
SHPextensions 8

Index **9**

`APcontours` *AP Contours*

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.

`APKML2SHP` *AP Convert KLM to SHP*

Description

Read a KML file and save it to a SHP file and/or read it to memory. Requires the use of 'ogrinfo.exe'.

Usage

```
APKML2SHP(inFile, OSGeoPath = "C:\\OSGeo4W64", saveToFile = TRUE,
  readToMemory = FALSE, dropDescription = TRUE)
```

Arguments

`inFile`	path to a KML file
`OSGeoPath`	character. Path to the OSGeo4W installation directory.
`saveToFile`	logical. Save object as a Shapefile. File will be saved with the same name and in the same folder as the `inFile`.
`readToMemory`	logical. Input will be return as Spatial object.
`dropDescription`	logical. If set to TRUE, the Description field of the KML file will be dropped

Examples

```
## Not run:
APKML2SHP("C:/Geodata/myfile.kml", dropDescription = FALSE)

## End(Not run)
```

APopen *AP Folder Open*

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

---

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

inRaster	a RasterLayer or a path to a raster file
readToMemory	logical. Read output polygons into memory as a SpatialPolygonsDataFrame
outFile	character. Optional path for saving output as an Esri Shapefile.
OSGeoPath	character. Path to the OSGeo4W installation directory
connectivity	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 *OSGeo4W.bat* and *gdal_polygonize.py* files. Python must be installed in order to run *gdal_polygonize.py*.

Value

SpatialPolygonsDataFrame

See Also

- GDAL: http://www.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

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 *AP Read Shapefile*

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 *AP Save to SHP*

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.

`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

Index

∗Topic **datasets**
SHPextensions, 8

APcontours, 2
APKML2SHP, 2
APopen, 3
APpolygonize, 3
APpolyMerge, 4
APprecise, 5
AProunder, 5
APSHPdel, 6
APSHPfiles, 6
APSHPread, 7
APSHPsave, 7
APtimer, 8

SHPextensions, 8