### Task

Structure of the Function Load Shapefile Bounding Box Create Grid Within Query Sublist Set radiometric

resolution Flip array

Issues

## **GIS+** Project

Rasterizer

Luka Kern, Nele Stackelberg and Felix Rentschler

University of Freiburg

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## Task: Rasterizer

#### Task

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Issues

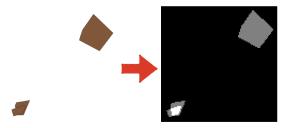


Figure: from shape to raster

## Load Shapefile with Fiona Package

### Task

Structure of the Function

### Load Shapefile

Within Query
Sublist
Set radiometric
resolution

Flip array Save as tiff

issues

```
# collect geometries of shape file
geometry_coll = spg.collection.GeometryCollection(
        [shape(pol['geometry']) for pol in fiona.open(filepath)]
)
```

# Bounding Box

Task

Structure of the Function

Load Shapefile

Bounding Box

Create Grid

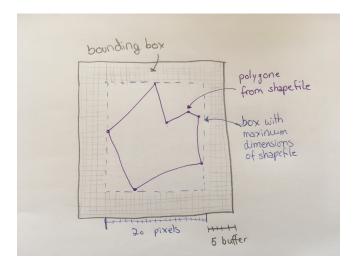
Within Query

Sublist

Set radiometri

Flip array Save as tiff

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# Create a grid

Tack

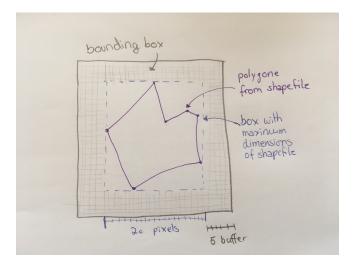
Structure of the Function Load Shapefile Bounding Box Create Grid

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Save as til

Issues



## Within query

```
Task
```

Function
Load Shapefile
Bounding Box
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resolution

```
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```

```
86
         within list = []
 87
         for i in range(0, len(geometry coll)):
             if (isinstance(geometry coll[i], spg.polygon.Polygon)):
 89
                 step = [pixel.within(geometry coll[i]) for pixel in geom pixels]
             if (isinstance(geometry coll[i], spg.point.Point));
 90
 91
                 step = [
 92
                             (pixel.x > (geometry coll[i].x - 0.5 * resolution)) &
 93
 94
                             (pixel.x <= (geometry coll[i].x + 0.5 * resolution))
 95
                     ) &
 96
 97
                             (pixel.v > (geometry coll[i].v - 0.5 * resolution)) &
98
                             (pixel.y <= (geometry coll[i].y + 0.5 * resolution))</pre>
99
                     ) for pixel in geom pixels
100
                 1
102
             if (isinstance(geometry coll[i], spg.linestring.LineString)):
                 step = [pixel.within(geometry coll[i].buffer(float(resolution)))
104
                         for pixel in geom pixels]
105
             print('The process is running: {}% completed'.format((round(100 *
     i/len(geometry coll),2))))
106
             within list.append(step)
```

## Sublist

Task

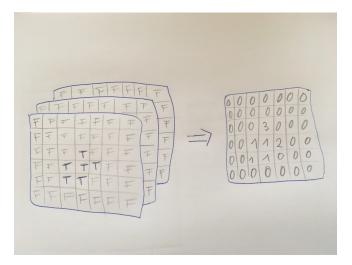
Structure of the Function

Bounding Box Create Grid Within Query

#### Sublist

Set radiometric resolution Flip array Save as tiff

lecues



## Set radiometric resolution

# set radiometric resolution to 8bit

within\_list\_sum = np.round\_(255 \* (np.true\_divide(within\_list\_sum,

```
Task
```

```
Structure of the Function
Load Shapefile
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Within Query
Sublist
Set radiometric resolution
```

```
Set radiometric
resolution
Flip array
Says as tiff
```

max(within\_list\_sum))))

117

118

# Flip array

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130

#### Task

Structure of the Function Load Shapefile Bounding Box Create Grid Within Query Sublist

Set radiometri resolution

Flip array Save as tifl

Issues

```
# flip array for correct presentation
flipped_array = np.flipud(within_array)
```

## Save as tiff

139

140

141

#### Task

Structure of the Function Load Shapefile Bounding Box Create Grid Within Query Sublist

Set radiometric resolution Flip array

Save as ti

##write image data to tiff file
sk.external.tifffile.imsave(outputname, flipped\_array)

### **Issues**

### Task

Structure of th Function Load Shapefile Bounding Box Create Grid Within Query Sublist Set radiometric resolution Flip array Save as tiff

Issues

### Solved

- Set accurate resolution even if you dont know the range of the coordinates
- Raster-conversion for shp-types point, line and polygon
- Git

### Issues

### Task

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Issues

### unsolved

- Save tiff-file with reference-system
- Define grey-values in tiff-file according to a specific attribute of the shapefile
- Possibility to choose radiometric resolution of tiff-file