# Die Nutzung von Programmierschnittstellen

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# The Overpass API

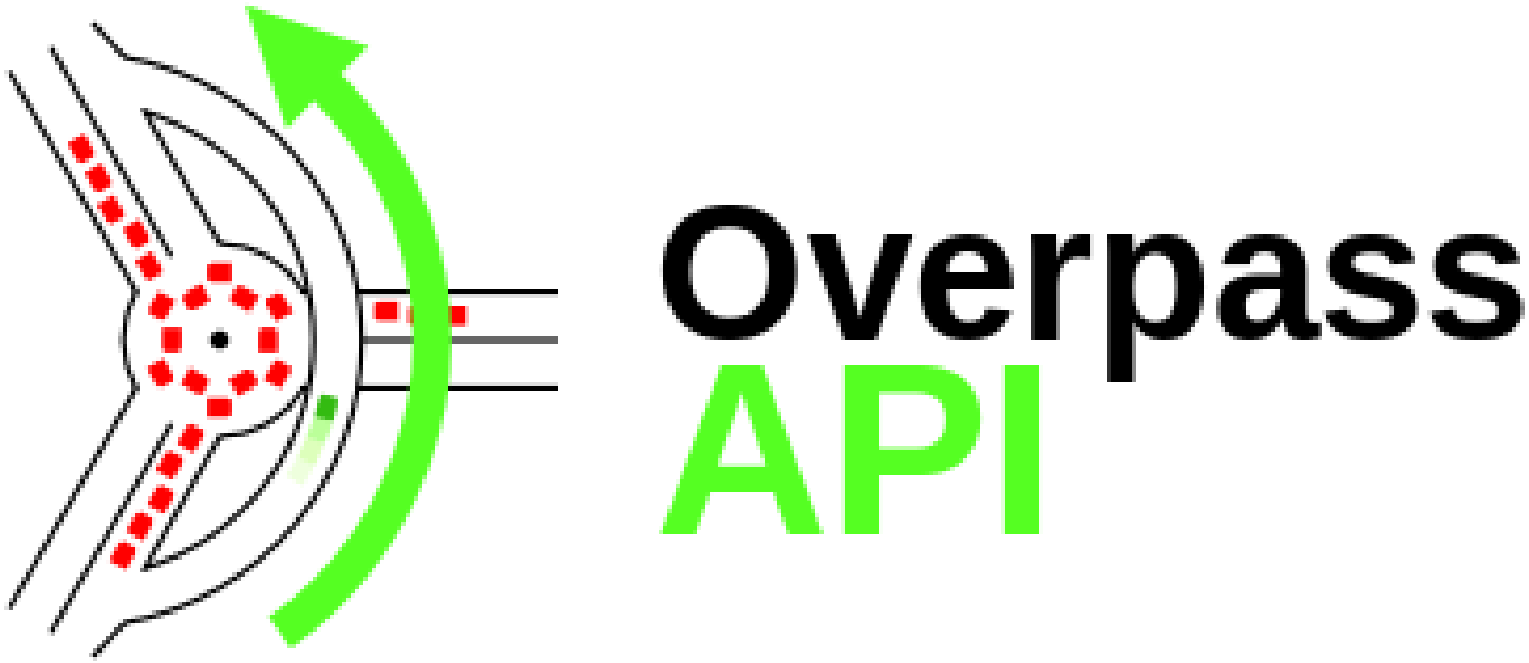


**Figure 1:** Logo Overpass API

*The Overpass API is a read-only API that serves up custom selected parts of the OSM map data.*

(`http://wiki.openstreetmap.org/wiki/Overpass_API`)

# Wichtige Information

http://wiki.openstreetmap.org/wiki/Map_Features

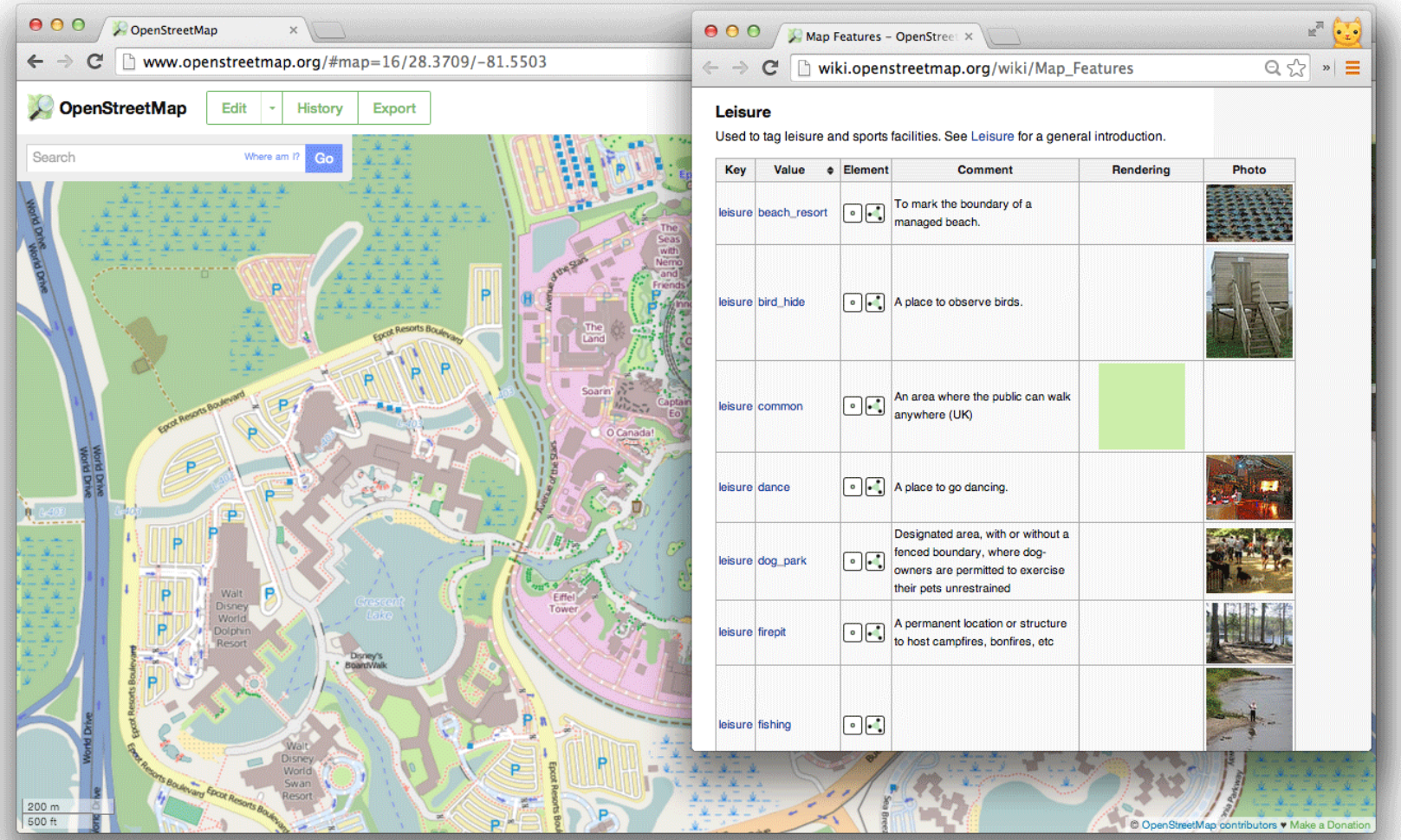


**Figure 2:** osm map features

# Beispiel: Nutzung der Overpass API

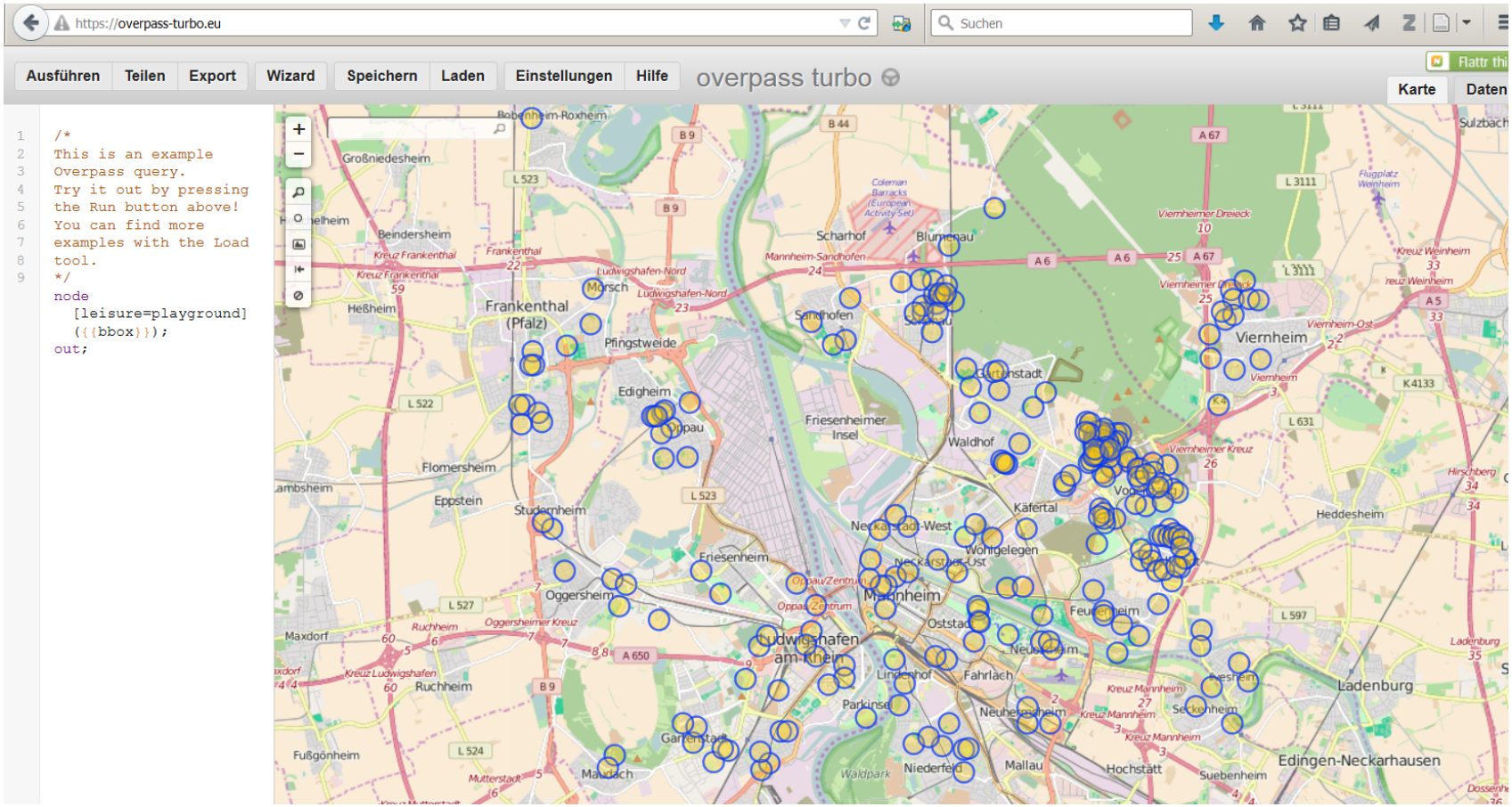


**Figure 3:** Spielplätze Mannheim

# Export der Rohdaten

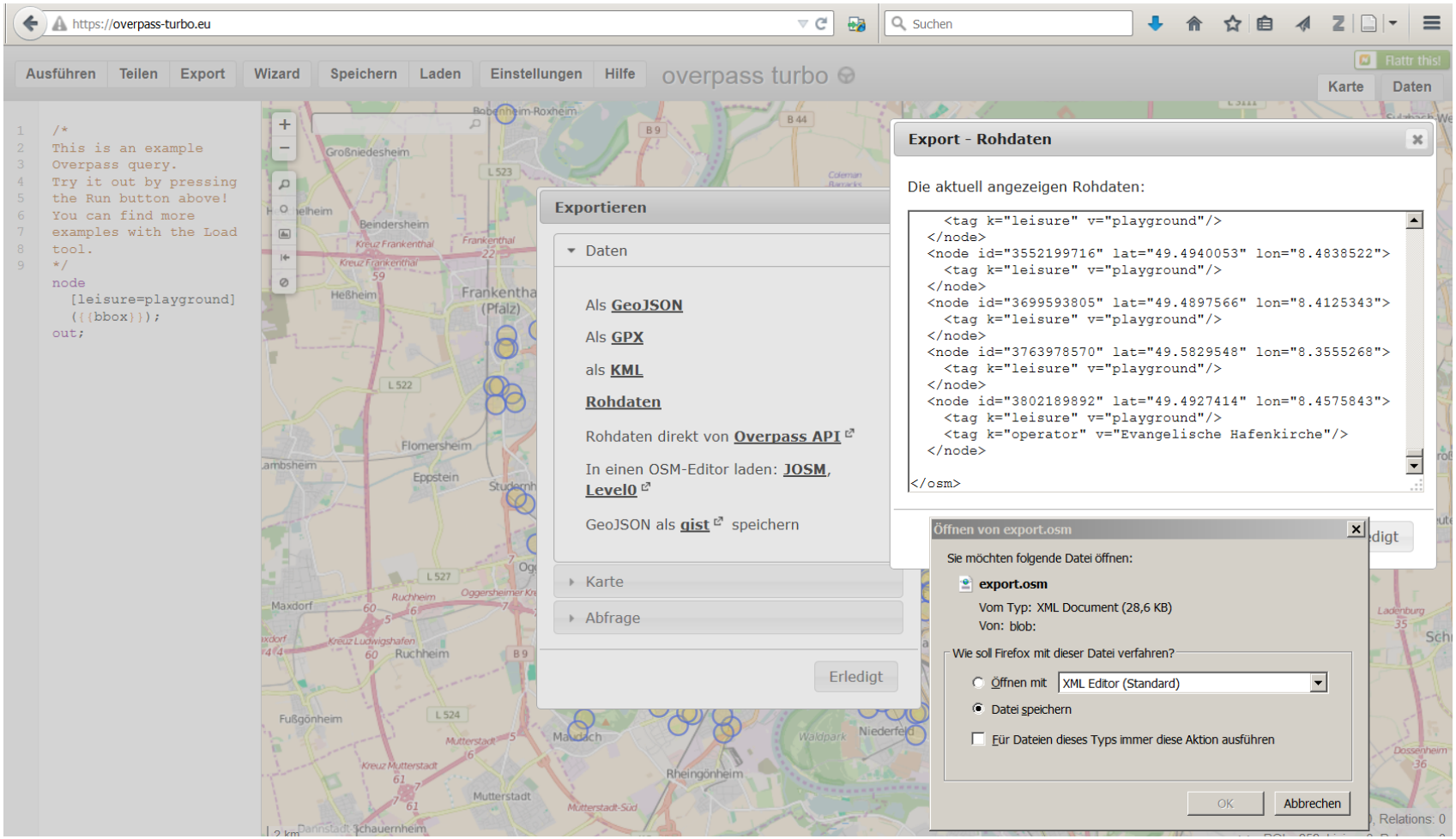


**Figure 4:** Export Rohdaten

# Import von der Overpass API zu R

```
Link1 <- "http://www.overpass-api.de/api/interpreter?
data=[maxsize:1073741824][timeout:900];area[name=\""
```

```
library(XML)
place <- "Mannheim"
type_obj <- "node"
object <- "leisure=playground"

InfoList <- xmlParse(paste(Link1,place,"\"];",
type_obj,"(area)[",object,
"];out;",sep=""))
```

# XML Output


```
  <?xml version="1.0" encoding="UTF-8"?>
- <osm generator="Overpass API" version="0.6">
    <note>The data included in this document is from www.openstreetmap.org. The data is made available under ODbL.</note>
    <meta areas="2017-02-06T06:35:03Z" osm_base="2017-02-06T06:48:02Z"/>
  - <node lon="8.5028074" lat="49.5190994" id="30560755">
      <tag v="Potlatch 0.5d" k="created_by"/>
      <tag v="playground" k="leisure"/>
    </node>
  - <node lon="8.5393963" lat="49.4963345" id="76468450">
      <tag v="Potlatch 0.4a" k="created_by"/>
      <tag v="playground" k="leisure"/>
      <tag v="Rutsche, Schaukel, großer Sandkasten, Tischtennis" k="note"/>
    </node>
  - <node lon="8.5529589" lat="49.4967807" id="76468534">
      <tag v="playground" k="leisure"/>
    </node>
  - <node lon="8.5487501" lat="49.4923030" id="76468535">
      <tag v="playground" k="leisure"/>
    </node>
```


**Figure 5:** Splielplätze in Mannheim

# Das Arbeiten mit XML Daten (xpath)

Die Liste der ID's mit dem Wert *playground*:

```
node_id <- xpathApply(InfoList,
"//tag[@v= 'playground']/parent::node/@ id")
## node_id[[1]]
```

```
> node_id[[1]]
        id
"30560755"
attr(,"class")
[1] "XMLAttributeValue"
>
```

**Figure 6:** Erste node id

# latitude und longitude bekommen

```
lat_x <- xpathApply(InfoList,
"//tag[@v= 'playground']/parent::node/@ lat")
# lat_x[[1]];lat_x[[2]]
```

```
lat_x <- xpathApply(InfoList,
"//tag[@v= 'playground']/parent::node/@ lon")
```

```
          lat
"49.5190994"
attr(,"class")
[1] "XMLAttributeValue"
          lat
"49.4963345"
```

# Paket auf Github

```r
library(devtools)
install_github("Japhilko/gosmd")
```

```r
library(gosmd)
pg_MA <- get_osm_nodes(object="leisure=playground",
                       "Mannheim")
info <- extract_osm_nodes(OSM.Data=pg_MA,
                          value="playground")
```

# Ausschnitt der Ergebnisse

| | leisure | lat | lon | note |
|---|---|---|---|---|
| 30560755 | playground | 49.51910 | 8.502807 | NA |
| 76468450 | playground | 49.49633 | 8.539396 | Rutsche, Schaukel, groÃ |
| 76468534 | playground | 49.49678 | 8.552959 | NA |
| 76468535 | playground | 49.49230 | 8.548750 | NA |
| 76468536 | playground | 49.50243 | 8.548140 | Schaukel, Rutsche, Sand |
| 76468558 | playground | 49.49759 | 8.542036 | NA |

# Link

- Tutorial zur Nutzung der Overpass API
- Vignette xml2