



Geocoding IV



Max Kleiner

4 min read · 18 hours ago

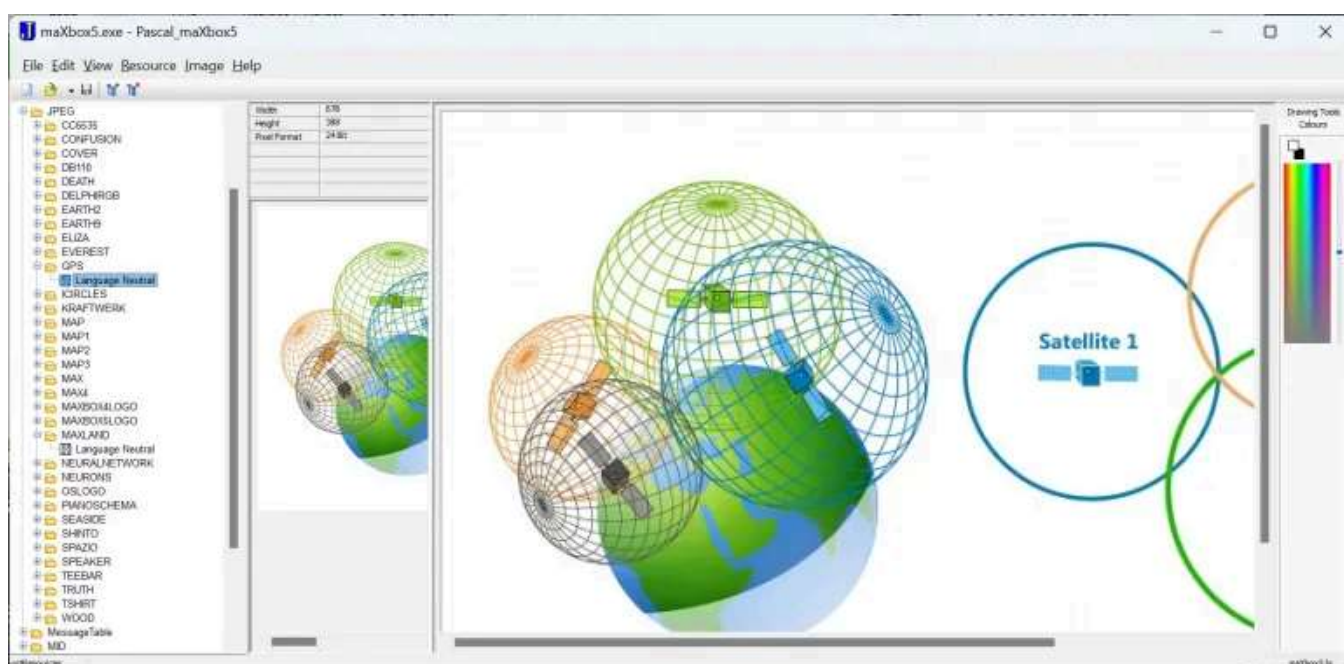


Listen



Share

More



XN Resource Editor

Just like every actual house has its address (which includes the number, the name of the street, city), every single point on the surface of earth can be specified by the latitude and longitude coordinates (lat & long).

So how we did this? With the OpenStreetMap API Nominatim and maXbox5.

The OSM Nominatim is a search engine for OpenStreetMap data. From this site you may search for a name or address (like Bahnhof, **Graz**, Austria), or look up place names by geographic coordinates. Each result will link to details page where you can inspect what data about the object is saved in the database and investigate how the address of the object has been computed (URI and JSON for example):

```
type Tlatlong = record lat, long: double; descript: string; end; function TAddr
```

```
type Tlatlong = record
    lat, long: double;
    descript: string;
end;

function TAddressGeoCodeOSM5(faddress: string): Tlatlong;
var url, res, display: string;
    jo: TJSONObject; urlid: TIDURI; winapi: TWinApiDownload;
begin
    urlid:= TIDURI.create('');
    url:= urlid.URLEncode('https://nominatim.openstreetmap.org/search?format=json&address='
        + fAddress);

    winapi:= TWinApiDownload.create;
    winapi.useragent:= 'Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1';
    winapi.url:= url;
    writeln('check url: '+itoa(winapi.CheckURL(url)));
    winapi.download1(res);
    if (res <> '') and (res <> '[]') then begin
        //windown.OnWorkStart
        StrReplace(res, '[{', '{');
        jo:= TJSONObject.create4(res);
        try
            if jo.getString('place_id') <> '' then
                display:= jo.getString('display_name');
                result.descript:= Format('Coords: lat %2.5f lng %2.5f %s place_id: %d',
                    [jo.getDouble('lat'),jo.getDouble('lon'),display,
                    jo.getint('place_id')]);

                result.lat:= jo.getDouble('lat');
                result.long:= jo.getDouble('lon');
            except
                writeln('Geo E: '+ExceptionToString(exceptiontype, exceptionparam));
            finally
                jo.Free;
                urlid.free;
                winapi.free;
            end;
        end else showmessagebig('OSM geo location not found! ');
    end;
end;
```

Form64 Google Directions WebForm5

Google Directions NavUtils2

From

Source Longitude

Source Latitude

6° 57' 1.080"E 50° 56' 50.280"N

To

Dest Longitude

Dest Latitude

15° 25' 0.480"E 47° 4' 26.040"N

Check To See Link In Browser

<https://www.google.com/maps/dir/050.94730,006.95030/047.07390,015.41680/@050.9>

Distance as Crow Flies =752.1km
GeoCoords: lat: 47.0739 - lon: 15.4168

1274_Screenshot2024-03-06_mX5GUI.png

I use an URI, a struct **Tlatlong**, a JSON and a HTTPGet object and call the function from the main:


```
writeln('res back_:'+TAddressGeoCodeOSM5('Bonnaud, France'));
```

```
latlong:= TAddressGeoCodeOSM5('Hauptbahnhof, Graz, Austria'); writeln('OSM5 res
```

```
latlong:= TAddressGeoCodeOSM5('Hauptbahnhof, Graz, Austria');
writeln('OSM5 res back_:'+latlong.descript);
>>> OSM5 res back_: Coords: lat 47.07391 lng 15.41681 Hauptbahnhof, Europaplat
writeln('get geoCoords: '+format(' lat: %.4f - lon: %.4f',[latlong.lat,latlong.
```

```
>>> get geocoords: lat: 47.0739 - lon: 15.4168
OpenWeb('https://www.latlong.net/c/?lat='+flots(latlong.lat)+'&long='+flots(lat
```

You should in particular verify that you have set a custom HTTP referrer or HTTP user agent (*window.useragent:=*) that identifies your application, and that you are not overusing the service with massive bulk requests. Otherwise you get following message:

You have been blocked because you have violated the[usage policy](https://operations.osmfoundation.org/policies/nominatim/) of OSM's Nominatim geocoding service. Please be aware that OSM's resources are limited and shared between many users. The usage policy is there to ensure that the service remains usable for everybody.

Fusion of OpenStreetMap with Google Maps Directions (OSM&GMD)

You can get directions for driving, public transit, walking, ride sharing, cycling, flight, or motorcycle on Google Maps. If there are multiple routes, the best route to your destination is blue, all other routes are gray. Some directions in Google Maps are in development and may have limited availability.

Now we pass the coordinates of two locations , for example Cologne to Graz, in a automated script and call the computed link in a browser.

Script Ref: <http://www.softwareschule.ch/examples/directions3.htm>

Testunit From Cologne to Graz

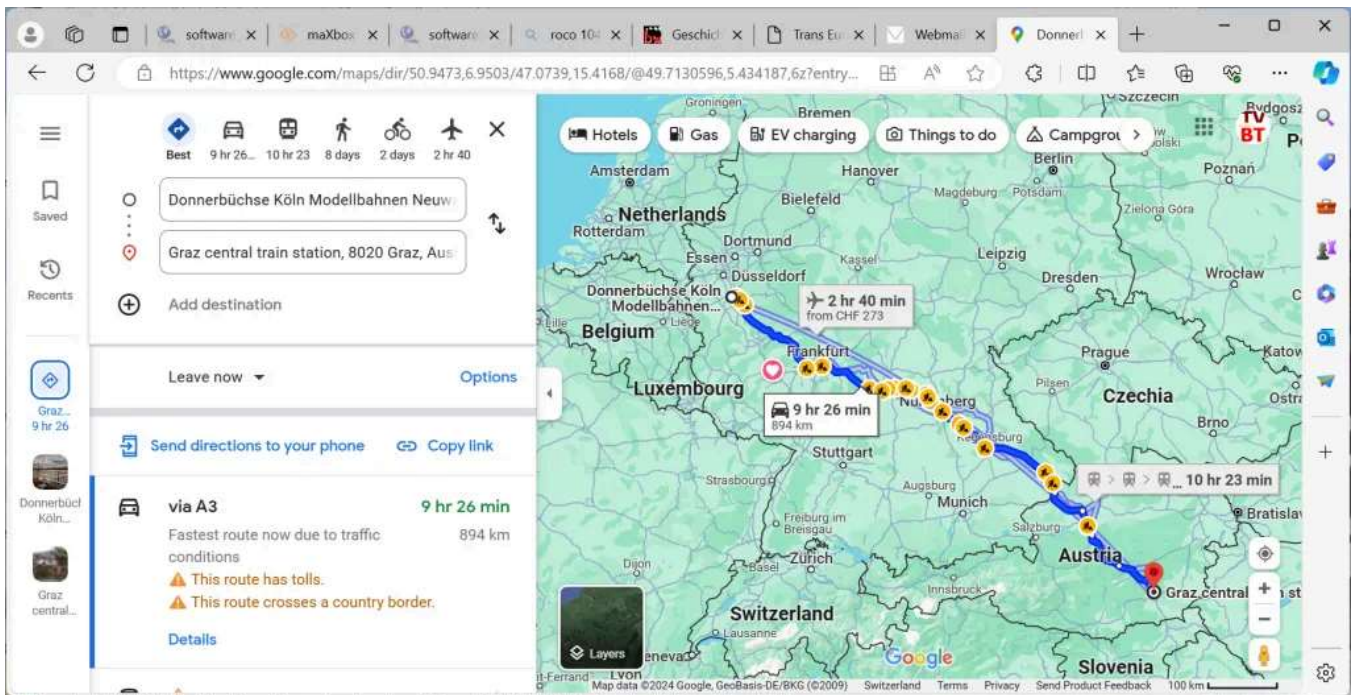
```
get geocoords: lat: 50.9473 — lon: 6.9503 Cologne
```

```
get geocoords: lat: 47.0739 — lon: 15.4168 Graz
```

```
latlong:= TAddressGeoCodeOSM('Gereonswall 66, Cologne, Germany');
```

```
latlong:= TAddressGeoCodeOSM('Hauptbahnhof, Graz, Austria');
```

UnitTest GeoCode



1274_Screenshot2024-03-06mX5Browser.png

Important: Stay alert when you use directions on Google Maps. Always be aware of your surroundings to ensure the safety of yourself and others. When in doubt, follow actual traffic regulations and confirm signage from the road or path that you're on (we call them **PathMath**).

Max Kleiner, 06/03/2024

Originally published at <http://maxbox4.wordpress.com> on March 6, 2024.

Geo

Geography

Spatial Computing

Spatial Analysis

Geocoding



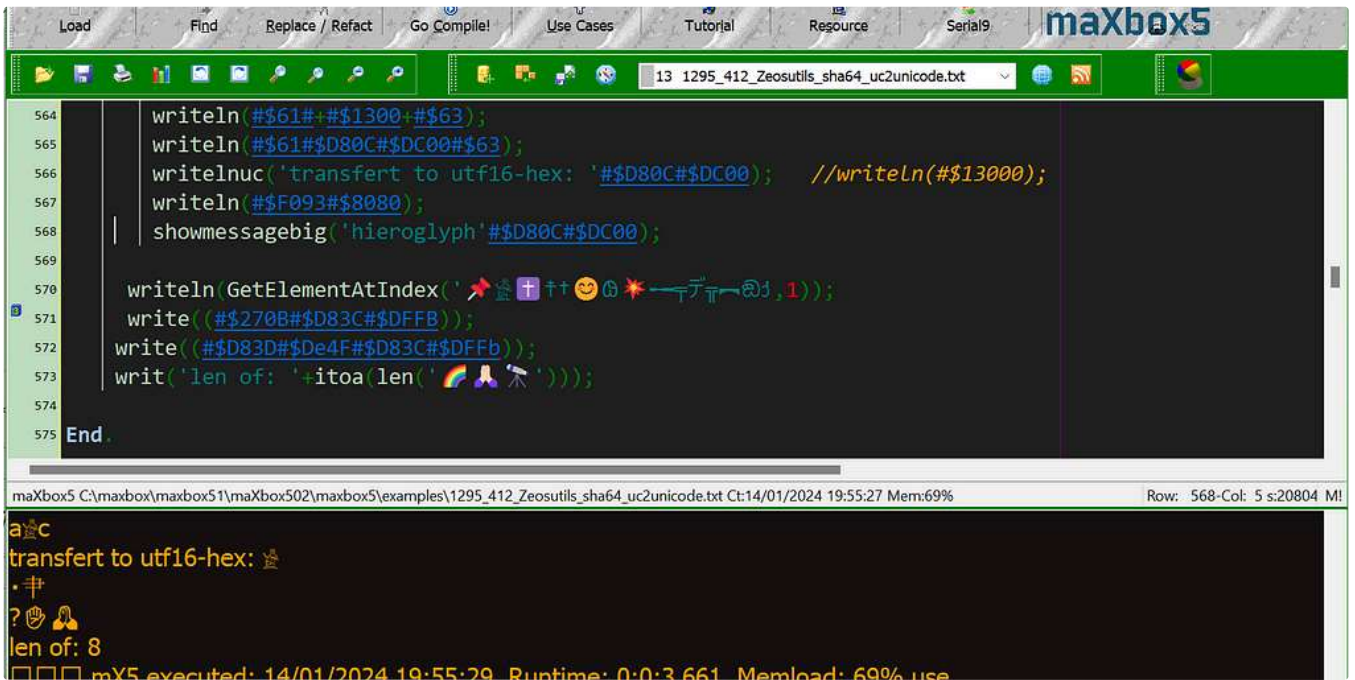
Edit profile

Written by Max Kleiner

21 Followers

Max Kleiner's professional environment is in the areas of OOP, UML and coding - among other things as a trainer, developer and consultant.

More from Max Kleiner



```
564 writeln($"61#:#$1300+#$63");
565 writeln($"61#$D80C#$DC00+#$63");
566 writeln("transfert to utf16-hex: '$D80C#$DC00); //writeln($"13000);
567 writeln($"F093#$8080);
568 showmessagebig("hieroglyph'$D80C#$DC00);
569
570 writeln(GetElementAtIndex('🔴🟢🟡🟠🟡🟢🔴',1));
571 write($"270B#$D83C#$DFFB);
572 write($"D83D#$De4F#$D83C#$DFFb);
573 writ("len of: "+ittoa(len("🌈👤🔧")));
574
575 End.
```

maxbox5 C:\maxbox\maxbox51\maxbox502\maxbox5\examples\1295_412_Zeosutils_sha64_uc2unicode.txt Ct:14/01/2024 19:55:27 Mem:69% Row: 568-Col: 5 s:20804 M!

```
a:c
transfert to utf16-hex:
.
? 🙌
len of: 8
mX5 executed: 14/01/2024 19:55:29 Runtime: 0:0:3.661 Memload: 69% use
```

 Max Kleiner

Unicode Showcase

////////////////////////////////////

6 min read · Feb 27, 2024

 4 