Pipe-and-Filter архитектура за проток на податоци

Чекор 1

Симнуваме osmcovert64.exe и osmfilter.exe, и мапата на Македонија достапна на OpenStreetMap.

Чекор 2

Фајлот со мапата на Македонија macedonia-latest.pbf, го конвертираме во .osm фајл со помош на osmconvert:

```
Please please tell me the name of the file you want to process:
macedonia-latest.pbf
Thanks!
-----------------------------------------------------------------
What may I do with this file?

  1  convert it to a different file format
  2  use an OSM Changefile to update this file
  3  use a border box to limit the geographical region
  4  use a border polygon file to limit the geographical region
  5  minimize file size by deleting author information
  6  display statistics of the file
To options 3 or 4 you may also choose:
  a  keep ways complete, even if they cross the border
  b  keep ways and areas complete, even if they cross the border

Please enter the number of one or more functions you choose:
1
All right.
-----------------------------------------------------------------
Please choose the output file format:

1 .osm (standard XML format - results in very large files)
2 .o5m (binary format - allows fast)
3 .pbf (standard binary format - results in small files)

Enter 1, 2 or 3:
1
Thanks!
-----------------------------------------------------------------
Now, please hang on - I am working for you.
If the input file is very large, this will take several minutes.

If you want to get acquainted with the much more powerful
command line, this would have been your command:

osmconvert macedonia-latest.pbf --out-osm -o=macedonia-latest_01.osm
-----------------------------------------------------------------
-----------------------------------------------------------------
Finished! Calculation time: 7s.
I just completed your new file with this name:
  macedonia-latest_01.osm
```

Чекор 3

Командата **osmfilter macedonia-latest_01.osm --out-count** ни ги покажува сите можни податоци на мапата на Македонија:

Command Prompt - cmd

```
C:\Users\pc>osmfilter macedonia-latest_01.osm --out-count
      75161     highway
      58696     building
      29059     name
      23023     source
      15357     surface
      14409     name:en
      10913     addr:street
      10240     addr:housenumber
       9729     ref
       9093     natural
       9017     addr:city
       8842     addr:postcode
       7832     amenity
       7546     int_name
       7305     oneway
       6742     landuse
       5471     maxspeed
       5068     lanes
       4914     type
       4388     power
       4249     boundary
       3868     place
       3460     layer
       3434     addr:country
       3374     building:levels
       3326     addr:city:en
       3255     old_ref
       3020     bridge
       2995     admin_level
       2627     tracktype
       2486     waterway
       2396     railway
       2368     crossing
```

Чекор 4

За нашиот проект избравме да ги изфилтрираме и извадиме само кафулињата со помош на следнава команда и во исто време податоците ги конвертираме и ги запишуваме во нашата локална база во .csv формат:

```
C:\Users\pc>osmfilter macedonia-latest_01.osm --keep="amenity=cafe" | osmconvert64.exe - --
all-to-nodes --csv="@id @lon @lat name" --csv-headline --csv-separator="," -o="mkcafe.csv"
```

Базата mkcafe.csv е достапна во папката database и изгледа вака:

	A	B	C	D
1	@id	@lon	@lat	name
2	310289760	21.416703	42.0001541	Broz Cafe
3	382650535	22.0110153	41.4372049	Total
4	382650733	22.0110601	41.437027	Roma
5	386703438	22.0131384	41.4352466	Blue Cafe
6	386704854	22.0104295	41.4398268	Picaso
7	411008299	21.4232268	41.9948867	Benneton
8	411008532	21.4230113	41.9948604	AMG
9	411009859	21.4253358	41.9955693	Strip
10	414619173	21.2168806	41.5069813	First
11	414620827	21.2165604	41.5133537	Kardinal
12	441057694	21.4082395	42.0051454	Cafeteria
13	444537212	22.4107281	41.9176649	Delikates Cafe
14	459670767	21.4310013	41.9952414	Caffe Skopje
15	459670881	21.429836	41.992653	Play Cafe
16	459752642	21.4373453	41.9984414	Bistro Opera Pub
17	461659372	22.6389491	41.4389263	City Cafe
18	461659456	22.6390517	41.4390994	Inside Cafe
19	461659572	22.6390002	41.4390286	Inside Cafe
20	461660689	22.637799	41.4397692	Extreme Cafe
21	461660729	22.6377556	41.4397043	PR Cafe
22	461660842	22.6378848	41.4395247	Cafe 19
23	470029606	22.3362079	42.2056104	Galerija
24	470029612	22.3365517	42.2058845	Fashion cafe
25	529811246	22.0167719	41.4343878	Light Cofee
26	572386052	20.6763146	41.1776197	Leone
27	990397203	22.1926393	41.7427284	Angel's Caffe
28	1233405188	22.8383014	41.7381241	miss Stoun
29	1615830879	21.398346	42.0034224	Fluid