Pipe-and-Filter архитектура за проток на податоци

Чекор 1.

Базата од податоци ја креираме преку мапата на Македонија извадена од OpenStreetMap, и потоа користиме osmconvert64.exe и osmfilter.exe.

Чекор 2.

Прво ја конвертираме мапата на Македонија macedonia-latest.pbf во .osm фајл со помош на osmconvert:

```
Please please tell me the name of the file you want to process:
macedonia-latest.osm.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.osm.pbf --out-osm -o=macedonia-latest.osm_01.osm
-----------------------------------------------------------------
Finished! Calculation time: 9s.
I just completed your new file with this name:
  macedonia-latest.osm_01.osm
Thanks for visiting me. Bye!
Yours, Bert
(To close this window, please press <Return>.)
```

Чекор 3.

Командата osmfilter macedonia-latest_01.osm --out-count ни ги покажува сите податоци од мапата на Макенодија:

```
D:\Damjan\Documents\Факс\3.Трета година\Семестар 5\DIANS\Homework 1>cd D:\Damjan\Documents\Факс\3.Трета година\Семест
ар 5\DIANS\Homework 1

D:\Damjan\Documents\Факс\3.Трета година\Семестар 5\DIANS\Homework 1>osmfilter macedonia-latest_01.osm --out -count
osmfilter Error: could not open input file: macedonia-latest_01.osm

D:\Damjan\Documents\Факс\3.Трета година\Семестар 5\DIANS\Homework 1>osmfilter macedoniaMap.osm_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
      2301    service
      2299    shop
      1960    lit
      1917    name:mk
      1756    operator
      1660    barrier
      1643    tourism
      1600    leisure
      1457    network
      1386    int_ref
      1220    foot
      1200    access
      1156    bicycle
      1128    name:sq
      1114    gauge
      1070    electrified
      1061    footway
      1055    restriction
      1048    religion
      1039    wikidata
       930    route
```

Чекор 4.

За оваа апликација избираме да ги извадиме само аптеките од територијата на Македонија со командата подолу и ги конвертираме во база наречена mkPharmacy.csv:

```
D:\Damjan\Documents\Факс\3.Трета година\Семестар 5\DIANS\Homework 1>osmfilter macedoniaMap.osm_01.osm --keep="amenity
=pharmacy" | osmconvert64.exe - --all-to-nodes --csv="@id @lon @lat name" --csv-headline --csv-separator="," -o="mkPh
armacy.csv"
```