Vidzeme University of Applied Sciences,

Faculty of Engineering

Semestral work

**Mortality and Morbidity factors in Latvia 2014**

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# Introduction

People always think about how to make their lives interesting, but they never usually think about the danger. That is why every year there are so many deaths because people try to be audacious. Some tend to do things like texting and driving, which might seem nothing, but it is dangerous for yourself and for other drivers around you.

In this application I visualized data for morbidity and mortality in Latvia 2014. It is shown in different colors for each region. Datasets were obtained in GeoLatvija.lv.

# Purpose of the application

This application is made for informational purposes only. It shows different morbidity and mortality factors in regions in Latvia in 2014, like, traffic accidents, different addictions, depression, HIV and others. The administrative layer helps to understand the information, because mortality and morbidity factors are divided into large regions.

Using this map user can come up with conclusions about 2014 years population factors. User can see which morbidity factor had the highest rate of them all. As well as this data can be used in comparison with this year’s or last year’s data.

# Dataset description

Datasets were obtained at GeoLatvia.lv. These datasets do not require licenses, everyone can use them. Both datasets are calculated the same. The indicator is calculated per 100,000 population of the respective age and sex.

For visualization purposes I chose some of the causes, like violence deaths, traffic accidents, suicides and HIV infections in mortality dataset and alcohol addiction, different substances addiction and depression in morbidity dataset.

# Structure of the application

Application is really user friendly, and it can be used by everyone. Application consists of title, map scale, layer panel on the right and info legend at the bottom right. The main functionality of this application is layer switching. The first thing user will see opening this application is a default map of Latvia (see picture 1).

Map

Description automatically generated

picture 1, Default map

On the right side is the layer panel where user can change maps layers and see different information about population. At the bottom right is info legend with three rates, low, medium and high rates. As can be seen in picture 2, there is an option to turn on administrative regions to understand given information in other layers.

Map

Description automatically generated

picture 2, Administrative regions enabled

User can switch between different layers to see information about mortality and morbidity factors. In the picture 3 the suicide layer has been chosen together with administrative region layer.

Map

Description automatically generated

picture 3, Suicide rate

# Literature used

1. Mirstība

<https://geolatvija.lv/geo/p/250>

1. Saslimstība

https://geolatvija.lv/geo/p/251

# Source code

<!DOCTYPE html>

<html>

    <head>

        <!-- Required meta tags -->

        <meta charset="utf-8">

        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

        <!-- Bootstrap CSS -->

        <link rel="stylesheet" href="css/bootstrap.css">

        <link rel="stylesheet" href="css/custom.css">

        <title>Population changes</title>

        <meta charset="UTF-8">

        <link rel="stylesheet" href="https://unpkg.com/leaflet@1.7.1/dist/leaflet.css"

        integrity="sha512-xodZBNTC5n17Xt2atTPuE1HxjVMSvLVW9ocqUKLsCC5CXdbqCmblAshOMAS6/keqq/sMZMZ19scR4PsZChSR7A=="

        crossorigin=""/>

        <!-- Make sure you put this AFTER Leaflet's CSS -->

        <script src="https://unpkg.com/leaflet@1.7.1/dist/leaflet.js"

        integrity="sha512-XQoYMqMTK8LvdxXYG3nZ448hOEQiglfqkJs1NOQV44cWnUrBc8PkAOcXy20w0vlaXaVUearIOBhiXZ5V3ynxwA=="

        crossorigin=""></script>

    </head>

    <body>

        <div class="container">

            <div class="jumbotron text-center">

              <h1>Mortality and Morbidity factors in Latvia 2014</h1>

            </div>

        </div>

        <div id="map"style="width: 1490px; height: 600px"></div>

    <script>

        var mymap = L.map('map').setView([56.946285, 24.105078], 8);

            var baseMap = L.tileLayer('https://api.mapbox.com/styles/v1/{id}/tiles/{z}/{x}/{y}?access\_token=pk.eyJ1IjoibWFwYm94IiwiYSI6ImNpejY4NXVycTA2emYycXBndHRqcmZ3N3gifQ.rJcFIG214AriISLbB6B5aw', {

                maxZoom: 19,

                attribution: 'Map data &copy; <a href="https://www.openstreetmap.org/copyright">OpenStreetMap</a> contributors, ' +

                'Imagery © <a href="https://www.mapbox.com/">Mapbox</a>',

                id: 'mapbox/streets-v11',

                tileSize: 512,

                zoomOffset: -1

            }).addTo(mymap);

            var admin = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VIDM-WMS\_ATR\_02022021-v1-0/guest/URN\_IVIS\_100273\_LIC-EB3E6FD85096D1489BACDA09E746CFC3?', {

                layers: '0',

                version: '1.3.0',

                format: 'image/png',

                transparent: true

            });

            var violence = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Mortality\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-7C4E95C33AEA0D4C925E8F96DB8BD9F6?' ,{

                layers: '0',

                version: '1.3.0',

                format: 'image/png',

                transparent: true

            });

            var transport = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Mortality\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-7C4E95C33AEA0D4C925E8F96DB8BD9F6?' ,{

                layers: '2',

                version: '1.3.0',

                format: 'image/png',

                transparent: true

            });

            var suicides = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Mortality\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-7C4E95C33AEA0D4C925E8F96DB8BD9F6?' ,{

                layers: '1',

                version: '1.3.0',

                format: 'image/png',

                transparent: true

            });

            var hiv = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Disease\_Incidence\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-B725F52E28F3A14ABA67DCAA76040B46?', {

                layers: '0',

                version: '1.3.0',

                format: 'image/png',

            });

            var alcohol = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Disease\_Incidence\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-B725F52E28F3A14ABA67DCAA76040B46?', {

                layers: '8',

                version: '1.3.0',

                format: 'image/png',

            });

            var addictions = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Disease\_Incidence\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-B725F52E28F3A14ABA67DCAA76040B46?', {

                layers: '7',

                version: '1.3.0',

                format: 'image/png',

            });

            var depression = L.tileLayer.wms('https://dpps.viss.gov.lv/DPPS.REQ/URN\_IVIS\_100001\_ISS-VM.SPKC-Disease\_Incidence\_WMS-v1-0/guest/URN\_IVIS\_100273\_LIC-B725F52E28F3A14ABA67DCAA76040B46?', {

                layers: '16',

                version: '1.3.0',

                format: 'image/png',

            });

            var baseMaps = {

                "Normal": baseMap,

                "Violence deaths": violence,

                "Traffic accidents": transport,

                "Suicides": suicides,

                "HIV infection": hiv,

                "Alcohol addiction": alcohol,

                "Different substances addictions": addictions,

                "Depression": depression

            };

            var overlayMaps = {

                "Admin": admin

            };

            L.control.layers(baseMaps, overlayMaps).addTo(mymap);

    </script>

        <div class="row">

            <div class="col-lg"><span class="badge bg-info"></span>Legends</span></div>

            <div class="col-lg-1"><span class="badge bg-success">Low rate</span></div>

            <div class="col-lg-1"><span class="badge bg-warning text-dark">Medium rate</span></div>

            <div class="col-lg-1"><span class="badge bg-danger">High rate</span></div>

        </div>

        <footer class="page-footer font-small blue">

            <div class="footer-copyright text-center py-3">© 2021 Artis Tauriņš</div>

        </footer>

    </body>

</html>