

Maximum

65 + 1

Známka

Min. počet bodov

Min %

A

58,5

90

B

54

83

C

49

75

D

43,5

67

E

39

60

F

<39

Geoserver

Cvičení 7

Webová kartografie – úvod

Podzim 2024

Filip Leitner

Geoserver

- Publikace dat na webu
 - WMS, WMTS, WFS, ...
 - rastry, vektory
 - SHP, PostGIS, GeoTIFF, ...
- Aplikace provozovaná na serveru

Vector Data Sources

- Directory of spatial files (shapefiles) - Takes a directory of shapefiles and exposes it as a data
- GeoPackage - GeoPackage
 - IS - PostGIS Database
 - NDI - PostGIS Database (JNDI)
- Properties - Allows access to Java Property files containing Feature information
- Web Feature Server (NG) - Provides access to the Features published a Web Feature Service,

Raster Data Sources

- ArcGrid - ARC/INFO ASCII GRID Coverage Format
- GeoPackage (mosaic) - GeoPackage mosaic plugin
- GeoTIFF - Tagged Image File Format with Geographic information
- ImageMosaic - Image mosaicking plugin
- WorldImage - A raster file accompanied by a spatial data file

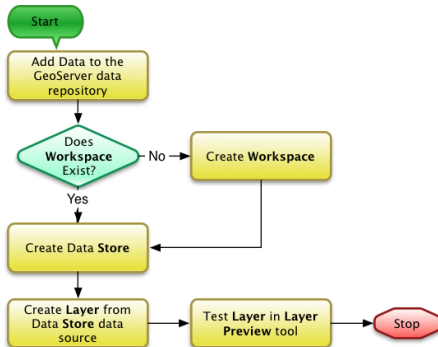
Other Data Sources

Geoserver

- Pracovat budeme na:
<http://zelda.sci.muni.cz:8080/geoserver/>
- login: student, heslo: student
- Anonymný režim

Geoserver

- “Štruktúra“
 - Workspace
 - Store
 - Layer



http://kkb-classes.s3.amazonaws.com/2013/GEOGx85/web/2013-Spring-InternetMapping-011_slides.htm#17

Další možnosti

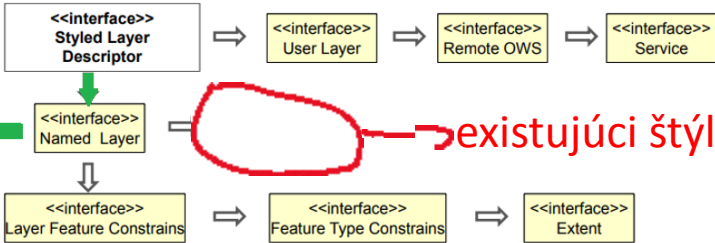
- MapServer
- Mapnik,
- TileStache

[OpenMapTiles](#) – vektorové
dlaždice

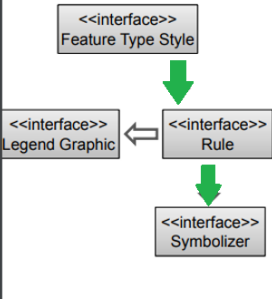
SLD

- Styled layer
- descriptor Založeno
- na XML [Standard](#)
- [OGC](#)
- <https://docs.geoserver.org/latest/en/user/styling/index.html#styling>
- [SLD Cookbook](#)

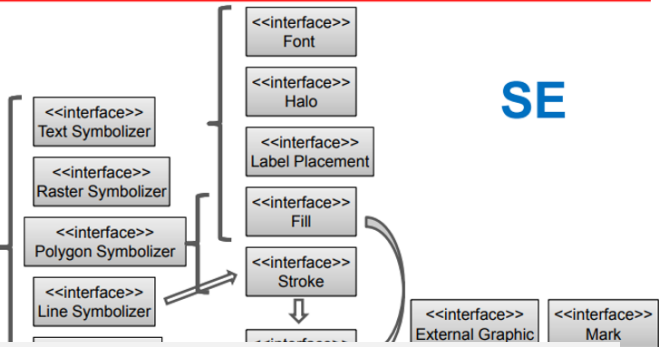
SLD



existující štýl



SE



GeoServer supports the use of a [StyledLayerDescriptor](#) document containing a **single <NamedLayer> element, which contains a single <UserStyle> element** to specify the styling.

SLD symbolizers

Rules contain **Symbolizers** to specify how features are styled. There are 5 types of symbolizers:

- `PointSymbolizer`, which styles features as **points**
- `LineSymbolizer`, which styles features as **lines**
- `PolygonSymbolizer`, which styles features as **polygons**
- `TextSymbolizer`, which styles **text labels** for features
- `RasterSymbolizer`, which styles **raster coverages**

Ako na to? Dokumentácia. Napr.

<https://docs.geoserver.org/latest/en/user/styling/sld/reference/linesymbolizer.html#syntax>

Struktura SLD

```
<StyledLayerDescriptor>
  <NamedLayer>
    <UserStyle>
      <FeatureTypeStyle>
        <Rule>
          <PointSymbolizer>
          <LineSymbolizer>
          <PolygonSymbolizer>
          <TextSymbolizer>
          ...
        </Rule>
      </FeatureTypeStyle>
    </UserStyle>
  </NamedLayer>
</StyledLayerDescriptor>
```

CSS

- CSS už znáte!
- V Geoserveru dostupné jako
- rozšíření CSS → SLD
- <https://docs.geoserver.org/latest/en/user/styling/css/tutorial.html>

SLD Property	CSS Equivalent	Description
Fill	background-color	Sets the fill color of polygons (like <code>PolygonSymbolizer</code> fill color).
Stroke	border-color	Sets the outline color of polygons, or the color of lines in <code>LineSymbolizer</code> .
Stroke-width	border-width	Sets the width of the outline (polygon) or line.
Stroke-opacity	opacity	Sets the opacity level for the stroke (border/line). Values range from 0 (transparent) to 1 (opaque).
Fill-opacity	opacity	Sets the opacity of the fill color for polygons.
Stroke-dasharray	border-style	Defines a dashed pattern for lines, similar to <code>dashed</code> or <code>dotted</code> styles in CSS.
Font-family	font-family	Sets the font family for text in <code>TextSymbolizer</code> , similar to <code>font-family</code> in CSS.
Font-size	font-size	Sets the text size for labels, similar to <code>font-size</code> in CSS.
Font-weight	font-weight	Sets the font weight (e.g., <code>bold</code>) for text labels.
Font-style	font-style	Sets the font style (e.g., <code>italic</code>) for text labels.
Label	content	Specifies the label content in <code>TextSymbolizer</code> , similar to the <code>content</code> property in CSS (though the label content itself is often derived from attributes).
Halo	text-shadow	Creates a background color around text to improve readability, similar to a shadow effect.
Halo-radius	text-shadow offset	Sets the radius of the halo around text, mimicking a shadow offset.
Rotation	transform: rotate()	Rotates symbols or text by a specified angle, similar to CSS transformations.
Displacement	margin / padding	Moves symbols or text from their default position, similar to adjusting <code>margin</code> or <code>padding</code> in CSS.

Body

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<StyledLayerDescriptor version="1.0.0" xsi:schemaLocation="http://www.opengis.net/sld
  StyledLayerDescriptor.xsd" xmlns="http://www.opengis.net/sld"
  xmlns:ogc="http://www.opengis.net/ogc"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <NamedLayer>
    <Name>Simple Point</Name>
    <UserStyle>
      <Title>SLD Cook Book: Simple Point</Title>
      <FeatureTypeStyle>
        <Rule>
          <PointSymbolizer>
            <Graphic>
              <Mark>
                <WellKnownName>circle</WellKnownName>
                <Fill>
                  <CssParameter name="fill">#FF0000</CssParameter>
                </Fill>
              </Mark>
              <Size>6</Size>
            </Graphic>
          </PointSymbolizer>
        </Rule>
      </FeatureTypeStyle>
    </UserStyle>
  </NamedLayer>
</StyledLayerDescriptor>
```

Body

```
* {  
  mark: symbol('circle');  
  mark-size: 6;  
}  
  
:mark {  
  fill: #FF0000;  
}
```

Linie

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<StyledLayerDescriptor version="1.0.0" xsi:schemaLocation="http://www.opengis.net/sld
  StyledLayerDescriptor.xsd" xmlns="http://www.opengis.net/sld"
  xmlns:ogc="http://www.opengis.net/ogc"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <NamedLayer>
    <Name>Simple Line</Name>
    <UserStyle>
      <Title>SLD Cook Book: Simple Line</Title>
      <FeatureTypeStyle>
        <Rule>
          <LineSymbolizer>
            <Stroke>
              <CssParameter name="stroke">#000000</CssParameter>
              <CssParameter name="stroke-width">3</CssParameter>
            </Stroke>
          </LineSymbolizer>
        </Rule>
      </FeatureTypeStyle>
    </UserStyle>
  </NamedLayer>
</StyledLayerDescriptor>
```

Linie

```
* {  
  stroke: #000000;  
  stroke-width: 3;  
}
```


Polygony

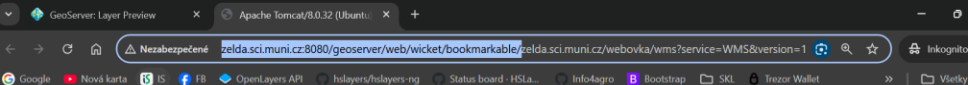
```
<?xml version="1.0" encoding="ISO-8859-1"?>
<StyledLayerDescriptor version="1.0.0" xsi:schemaLocation="http://www.opengis.net/sld
  StyledLayerDescriptor.xsd" xmlns="http://www.opengis.net/sld"
  xmlns:ogc="http://www.opengis.net/ogc"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <NamedLayer>
    <Name>Simple polygon</Name>
    <UserStyle>
      <Title>SLD Cook Book: Simple polygon</Title>
      <FeatureTypeStyle>
        <Rule>
          <PolygonSymbolizer>
            <Fill>
              <CssParameter name="fill">#000080</CssParameter>
            </Fill>
          </PolygonSymbolizer>
        </Rule>
      </FeatureTypeStyle>
    </UserStyle>
  </NamedLayer>
</StyledLayerDescriptor>
```

Polygon

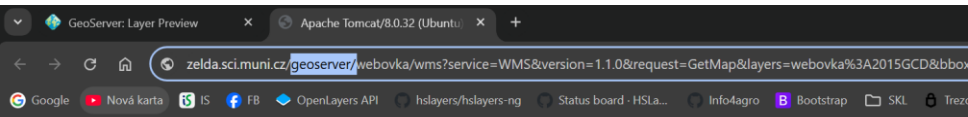
```
* {  
  fill: #000080;  
}
```


AKO NA LAYER PREVIEW

Vymazať začiatok vygenerovanej url až po „zelda“

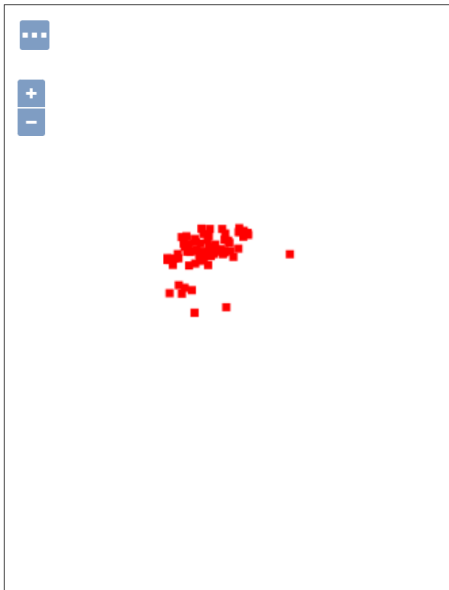


Doplniť geoserver/



HTTP Status 404 -





Jak dál?

- [Dokumentace](#)
- [Geoserver SLD](#)
- [Cookbook](#)
- <https://medium.com/>
<https://bost.ocks.org/mike/>

Procvičová

- Publikujte vrstvu ciest Nigérie (zložka [451242-Leitner_Filip/](#))
 - Nastavte východzí štýl WMS služby, ktorý bude pozostávať z
 - Šírka línie = 5px
 - Farba línie = #4934eb
 - Typ línie = čiarkovaná (dash)
 - Vzor čiarkovania 5px čiara, 2px medzera

Ptejte se

kdykoli

v

kdekoli

v

jakkoliv

co nejdřív...