
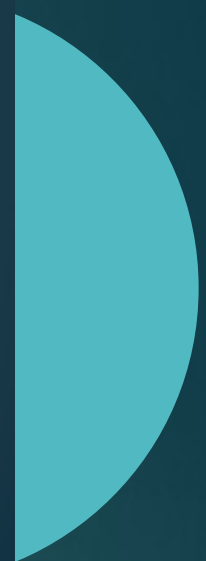
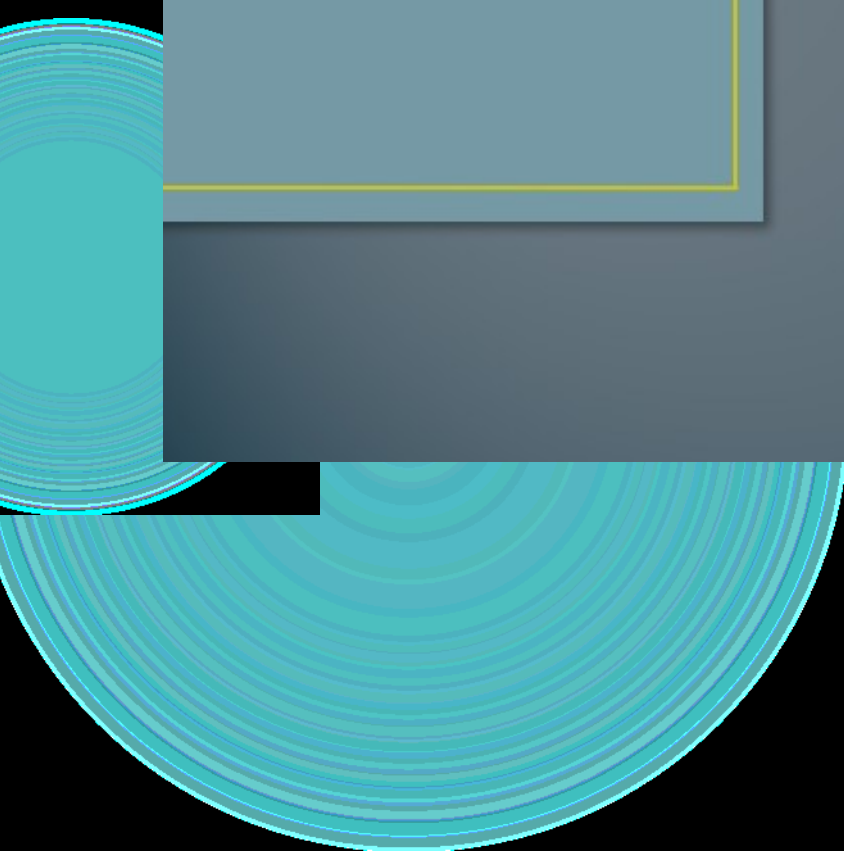


Úkol

zdrojov...

- Stačí odovzdat' obrázok/odkaz + nejaké info (dohromady v ZIP)
- Deadline: 22  2021 12:00



Obsah Pridať text Aktualizovať obsah Vložiť vysvetlivku Nasledujúca poznámka pod čiarou Zobraziť poznámky Vložiť poznámku pod čiarou Poznámky pod čiarou Undo Insert Bibliography Open Mendeley Inteligentné vyhľadávanie Vložiť citáciu Bibliografia Spravovať zdroje Štýl: APA Vložiť zoznam obrázkov Aktualizovať tabuľku Vložiť popis Křížový odkaz Vložiť register Aktualizovať register Označiť položku Označiť citáciu Vložiť zoznam citácií Aktualizovať tabuľku

- American Psychological Association 7th edition - Filip Leitner
- American Psychological Association 7th edition - Filip Leitner
- Chicago Manual of Style 17th edition (author-date)
- Cite Them Right 10th edition - Harvard
- IEEE
- ISO-690 (author-date, Slovak)
- ISO-690 (author-date, Slovak) - Filip Leitner**
- Modern Humanities Research Association 3rd edition (note with bibliography)
- Modern Language Association 8th edition
- Nature
- More Styles...

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Úvod

Kompozice
práce

Typografické
zásady

Pravopisná
korektura

Grafická
prezentace

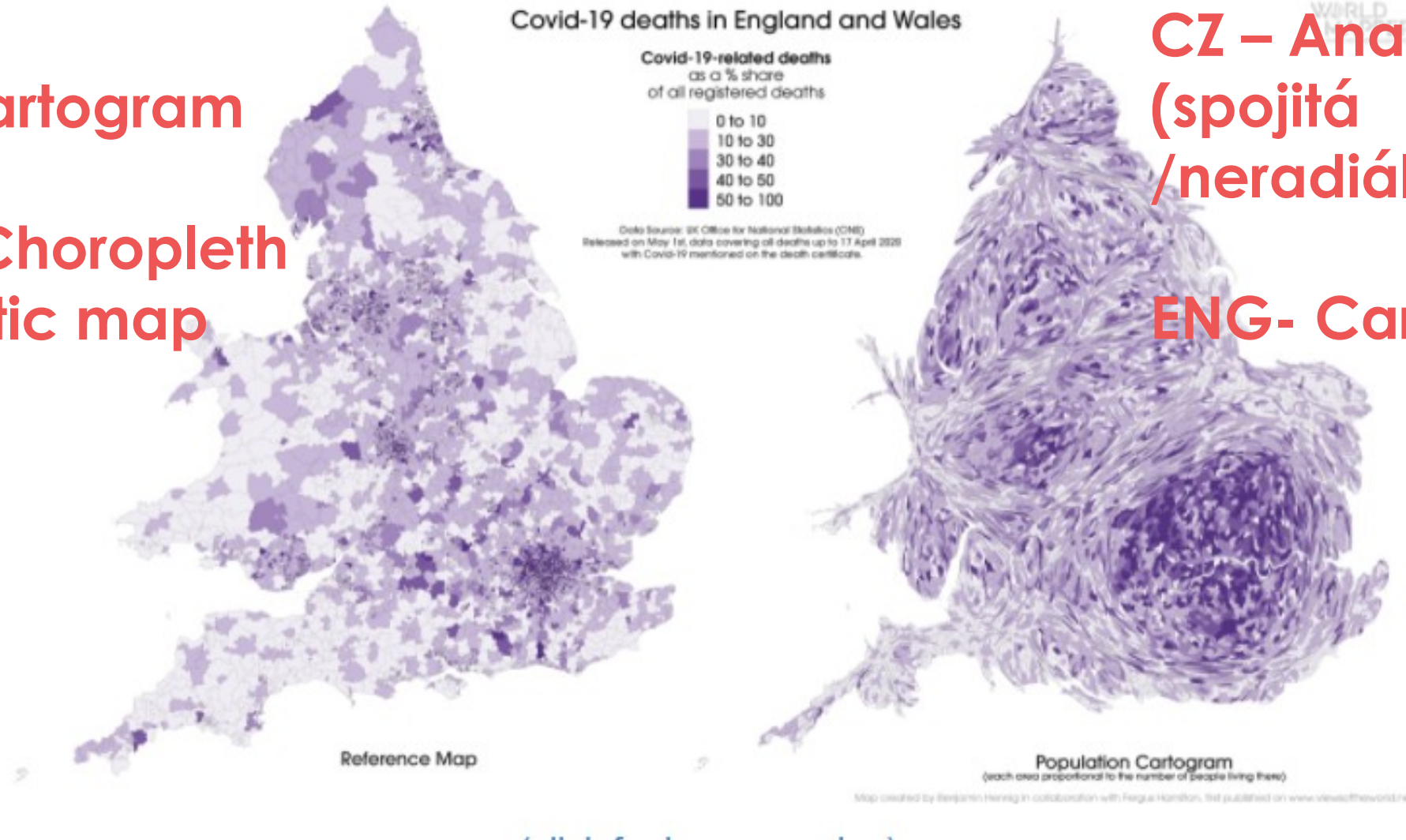
BAKALÁŘSKÁ A DIPLOMOVÁ PRÁCE

Pokyny pro jednotnou úpravu bakalářských a diplomových prací
z geografie a kartografie

MUNI
SCI

CZ – Kartogram

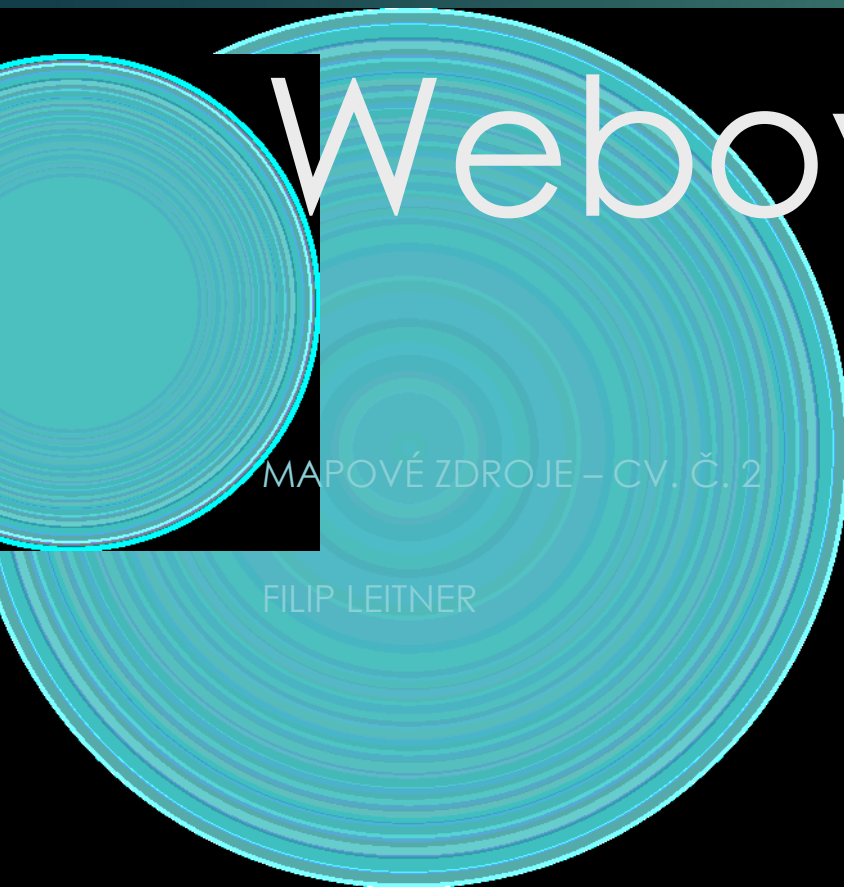
ENG- Choropleth thematic map



CZ – Anamorfóza (spojitá /neradiálna)

ENG- Cartogram

15.9	Úvod + Propaganda
22.9	Webové mapové služby
29.9	ČOSI, asi mapovňa
6.10	Prezentácie (3)
13.10	Prezentácie (3)
20.10	Prezentácie (3)
27.10	Prezentácie (3)
3.11	Prezentácie (zvyšok)
10.11	The 2030 Agenda for Sustainable Development
17.11	Sviatok
24.11	Otvorené dáta
1.12	Krátke uvedenie témy/dát na cv 3
8.12	Prezentácia cv 3
15.12	



Webové služby



MAPOVÉ ZDROJE – CV. Č. 2

FILIP LEITNER



Webové služby

- ▶ Nástroje umožňujúce prístup k priestorovým dátam prostredníctvom štandardizovaného webového rozhrania

- ▶ Aktuálnosť
- ▶ Dostupnosť
- ▶ Dohľadateľnosť

- ▶ Rozhranie medzi klientom a serverom

- ▶ Komunikácia prebieha za pomoci predefinovaných operácií

Pozor na:

- ▶ zlučovanie nezlučiteľných dát
- ▶ nesúlad mierok
- ▶ rozdielny časový rozsah mapových serverů

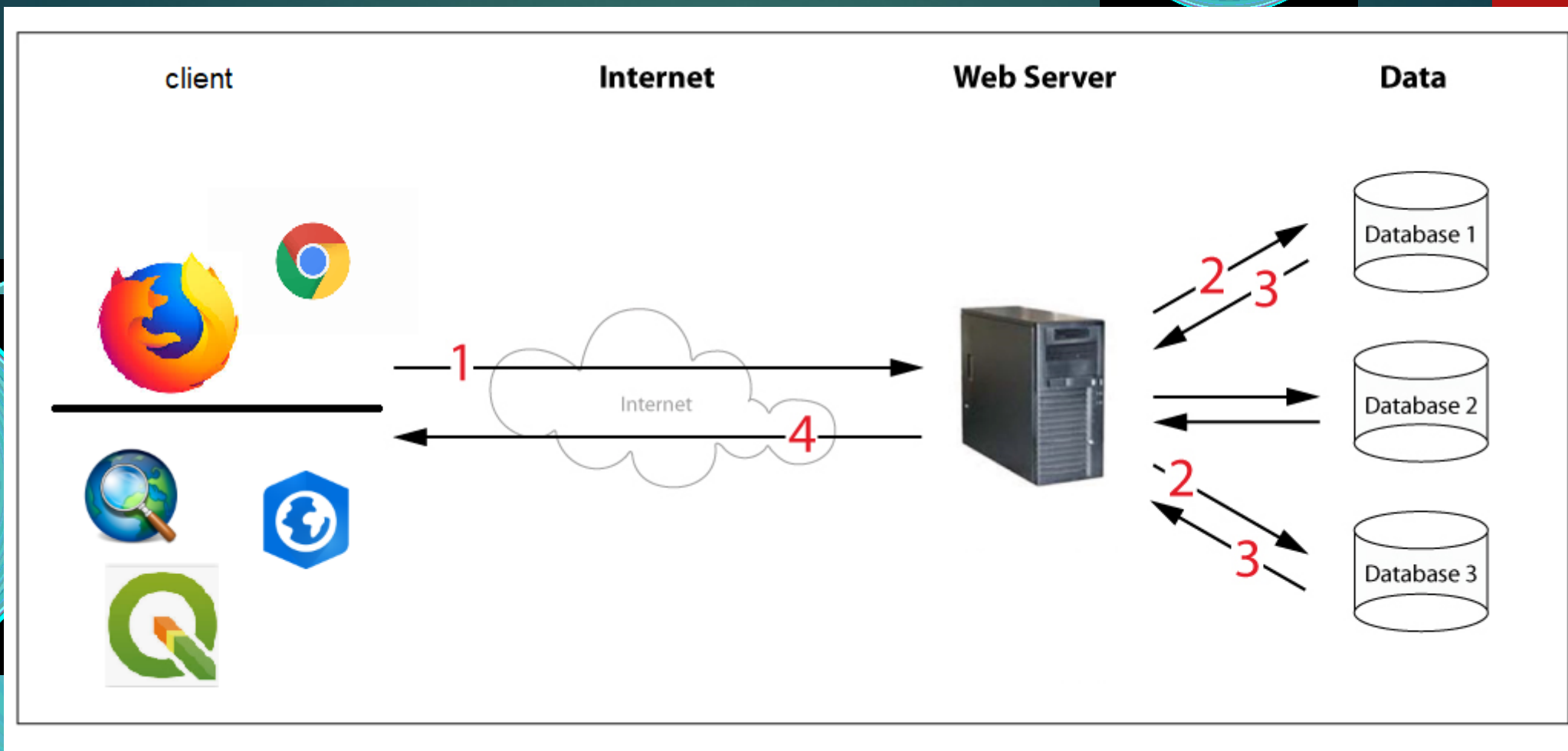
Nástroje umožňujúce prístup k priestorovým dátam prostredníctvom štandardizovaného webového rozhrania

▶ **Open Geospatial Consortium (OGC)** web service

- ▶ organisation focused on developing and defining open standards for the geospatial community to allow interoperability between various software, and data services

- ▶ Umožňuje využiteľnosť naprieč platformami, jednotu naprieč sektormi
- ▶ Výrazne zjednodušuje implementáciu
- ▶ The problem is not necessarily that the geographic information has not been captured, but accessing and combining geographic information from different sources in a timely manner.

Nástroje umožňujúce prístup k priestorovým dátam prostredníctvom štandardizovaného webového rozhrania



https://geoportal.cuzk.cz/WMTS_ORTOFOTO_900913/WMTService.aspx?layer=orto&style=default&tilematrixset=googlemapscompatibleext2%3Aepsg%3A3857&Service=WMTS&Request=GetTile&Version=1.0.0&Format=image%2Fpng&TileMatrix=17&TileCol=71578&TileRow=44899

WMS getMap

- ▶ url + parametre
- ▶ [https://geoportal.cuzk.cz/WMS_ZM25_PUB/service.svc/get?](https://geoportal.cuzk.cz/WMS_ZM25_PUB/service.svc/get?SERVICE=WMS&VERSION=1.3.0&REQUEST=GetMap&FORMAT=image%2Fpng&TRANSPARENT=true&LAYERS=GR_ZM25&STYLES=default&WIDTH=256&HEIGHT=256&CRS=EPSG%3A3857&BBOX=1721973.373208452%2C6261721.357121639%2C1878516.407136493%2C6418264.39104968)
- ▶ SERVICE=WMS&
- ▶ VERSION=1.3.0&
- ▶ REQUEST=GetMap&
- ▶ FORMAT=image%2Fpng&
- ▶ TRANSPARENT=true&
- ▶ LAYERS=GR_ZM25&STYLES=default&
- ▶ WIDTH=256&HEIGHT=256&
- ▶ CRS=EPSG%3A3857&
- ▶ BBOX=1721973.373208452%2C6261721.357121639%2C1878516.407136493%2C6418264.39104968

https://geoportal.cuzk.cz/WMS_ZM25_PUB/service.svc/get?SERVICE=WMS&VERSION=1.3.0&REQUEST=GetMap&FORMAT=image%2Fpng&TRANSPARENT=true&LAYERS=GR_ZM25&STYLES=default&WIDTH=256&HEIGHT=256&CRS=EPSG%3A3857&BBOX=1721973.373208452%2C6261721.357121639%2C1878516.407136493%2C6418264.39104968

Parameter	Required?	Description
<code>service</code>	Yes	Service name. Value is <code>WMS</code> .
<code>version</code>	Yes	Service version. Value is one of <code>1.0.0</code> , <code>1.1.0</code> , <code>1.1.1</code> , <code>1.3.0</code> .
<code>request</code>	Yes	Operation name. Value is <code>GetMap</code> .
<code>layers</code>	Yes	Layers to display on map. Value is a comma-separated list of layer names.
<code>styles</code>	Yes	Styles in which layers are to be rendered. Value is a comma-separated list of style names, or empty if default styling is required. Style names may be empty in the list, to use default layer styling.
<code>srs</code> or <code>crs</code>	Yes	Spatial Reference System for map output. Value is in form <code>EPSG:nnn</code> . <code>crs</code> is the parameter key used in WMS 1.3.0.
<code>bbox</code>	Yes	Bounding box for map extent. Value is <code>minx,miny,maxx,maxy</code> in units of the SRS.
<code>width</code>	Yes	Width of map output, in pixels.
<code>height</code>	Yes	Height of map output, in pixels.
<code>format</code>	Yes	Format for the map output. See WMS output formats for supported values.
<code>transparent</code>	No	Whether the map background should be transparent. Values are <code>true</code> or <code>false</code> . Default is <code>false</code> .
<code>bgcolor</code>	No	Background color for the map image. Value is in the form <code>RRGGBB</code> . Default is <code>FFFFFF</code> (white).
<code>exceptions</code>	No	Format in which to report exceptions. Default value is <code>application/vnd.ogc.se_xml</code> .
<code>time</code>	No	Time value or range for map data. See Time Support in GeoServer WMS for more information.

CRS=EPSG%3A3857&BBOX=1721973.373208452%2C6261721.357121639%2C1878516.407136493%2C6418264.39104968

Základní webové služby v oblasti geoinformatiky

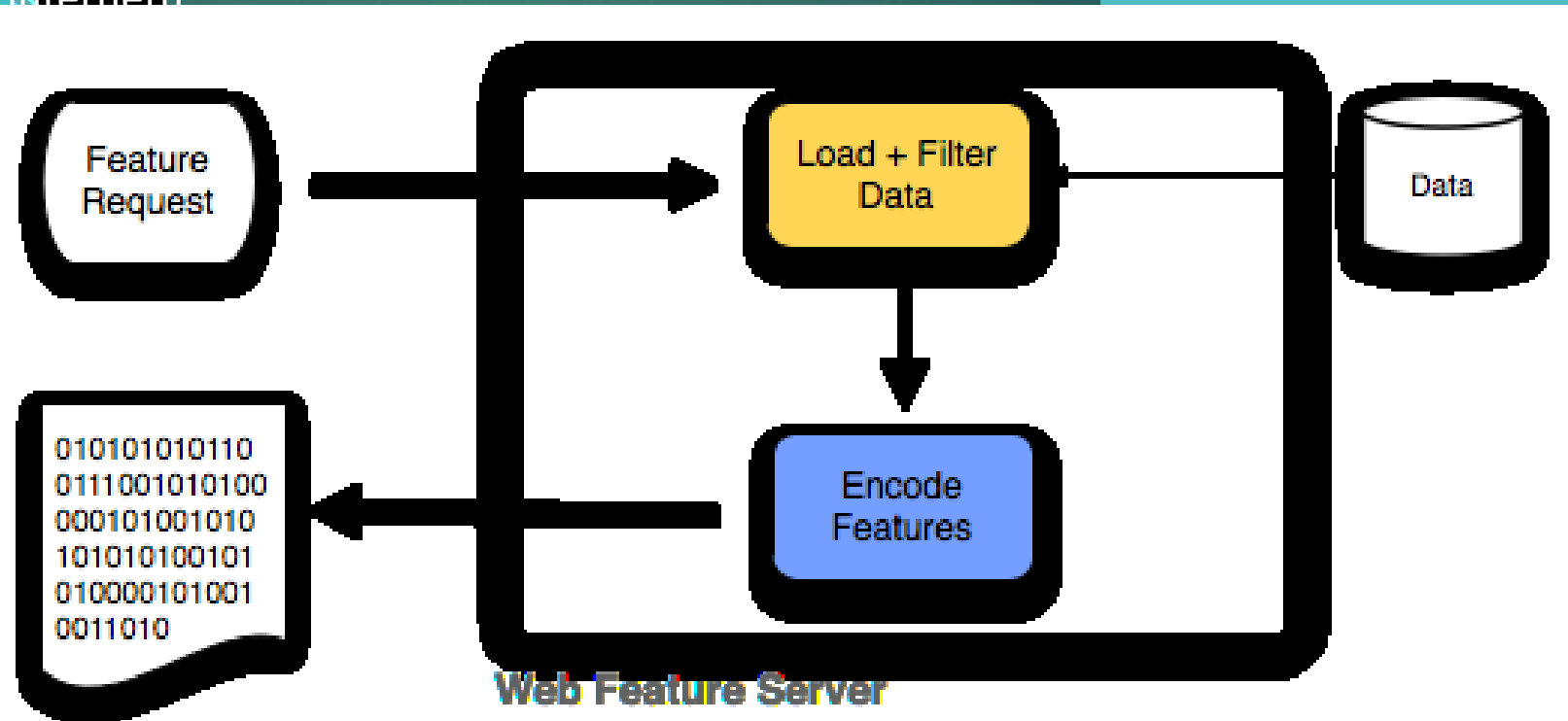
- vyhledávání (prostorových) dat a služeb (CSW)
- zobrazení náhledu na prostorová data (WMS)
- přístup k datům (WFS, WCS, SOS)
- procesní služby včetně transformačních (WCTS, WPS)
- ...

WFS – Web feature service

- ▶ zdieľanie vektorových geografických dát
- ▶ Na rozdiel od WMS,WMTS poskytuje priamo dáta – najčastejšie v formáte GML ...geoJSON v závislosti od serveru

▶ relatívne pomalá – závisí na type výstupného formátu, priestorovom rozsahu, počte prvkov, rýchlosti internetu

▶ Zobrazenie je v



WFS – Web feature service

- ▶ Dostupnosť operácií v závislosti na type služby
 - ▶ Simple
 - ▶ GetCapabilities – informácie o službe a jej obsahu, možnostiach
 - ▶ GetFeature - dáta
 - ▶ DescribeFeatureType – popis dát (atribúty a pod.)

GetFeature request parameters

Parameter	Remarks
REQUEST (M)	Name of WFS request type; must be GetFeature for a WFS GetFeature operation
SERVICE (M)	Service type; must be WFS for all WFS operations
TYPENAME (M)	A list of feature type names to query
BBOX (O)	Used to limit the returned features in only those that are not disjoint with a bounding box defined by BBOX; mutually exclusive with FILTER and FEATUREID. TYPENAME is a prerequisite.
FEATUREID (O)	A list of feature instances to be fetched by a WFS identified by the feature instances feature identifiers; mutually exclusive with FILTER and BBOX. >TYPENAME is a prerequisite
FILTER (O)	A filter specification describes a set of features to operate upon. The filter is defined as specified in the OGC Filter Encoding Specification. If the FILTER parameter is used, one filter must be specified for each feature type listed in the TYPENAME parameter. Individual filters encoded in the FILTER parameter are enclosed in parentheses "(" and ")". TYPENAME is a prerequisite.
MAXFEATURES (O)	A positive integer indicating the maximum number of features that should be returned by a WFS to a request.
OUTPUTFORMAT (O)	The output format used to describe feature data returned by WFS; the default value is GML2.
PROPERTYNAME (O)	A list of properties may be specified for each feature type that is being queried. (Refer to the OGC WFS Specification Section 13.2.2 on how to form lists of parameters). A 1:1 relationship exists between each element in a FEATUREID or TYPENAME list and the PROPERTYNAME list. The absence of a value indicates that all properties should be fetched.
VERSION (O)	Request version number; the WFS Connector supports only WFS version 1.0.0

- ▶ ListStoredQueries, DescribeStoredQueries, GetPropertyValue, GetFeatureWithLock, LockFeature, Transaction, CreateStoredQuery, DropStoredQuery

Filtrování

Filter Encoding

► Prostorové

```
<ogc:Filter>
  <ogc:Within>
    <ogc:PropertyName>SHAPE</ogc:PropertyName>
    <gml:Envelope>
      <gml:lowerCorner>48.4744444 12.7083628</gml:lowerCorner>
      <gml:upperCorner>49.4017450 14.8397106</gml:upperCorner>
    </gml:Envelope>
  </ogc:Within>
</ogc:Filter>
```

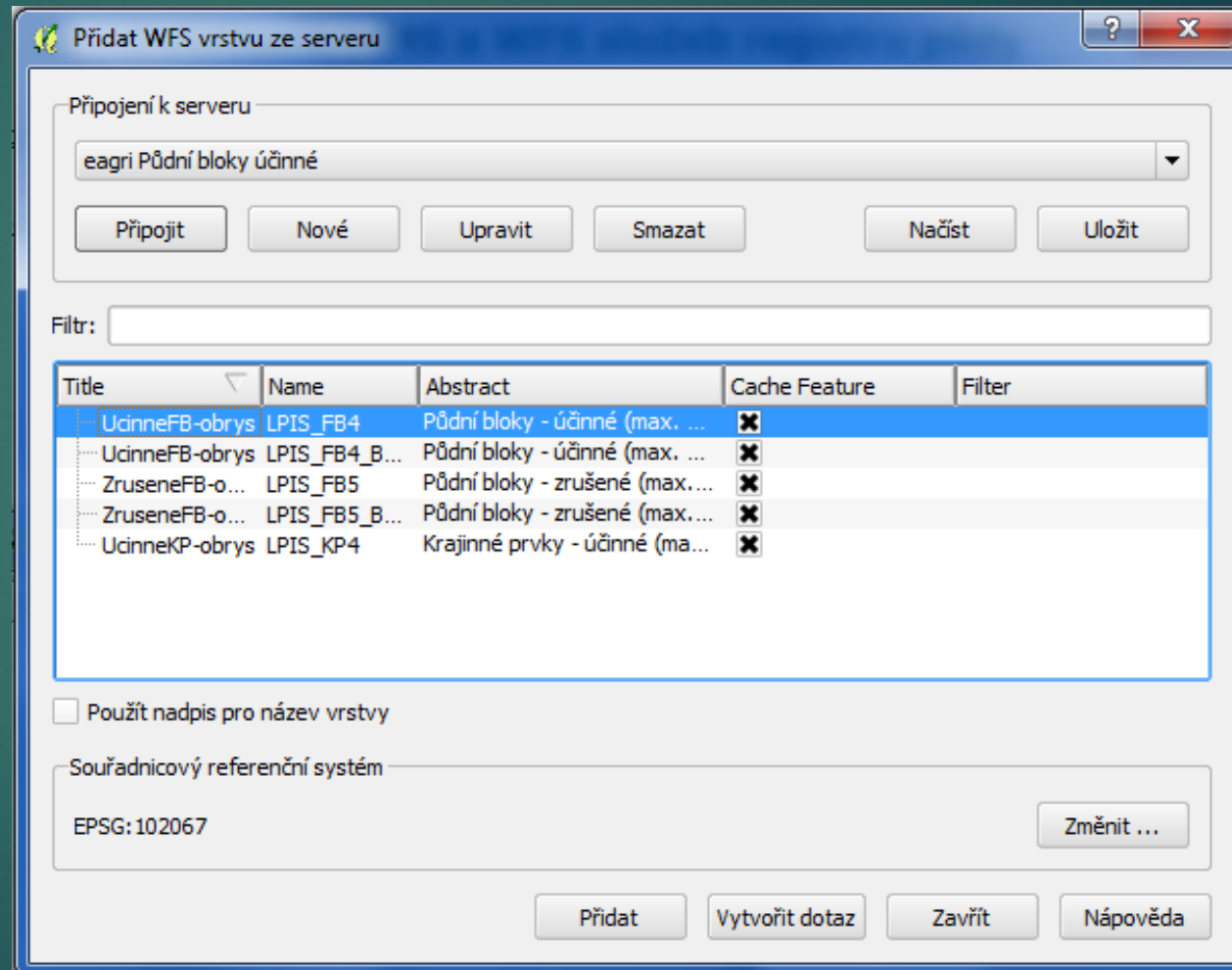
► Atributové

```
<ogc:Filter>
  <ogc:PropertyIsLike wildCard="%" singleChar="?" escapeChar="!">
    <ogc:PropertyName>NAZEV</ogc:PropertyName>
    <ogc:Literal>Český kras</ogc:Literal>
  </ogc:PropertyIsLike>
</ogc:Filter>
```

Feature Set	Feature
Spatial Capabilities	
	Equals
	Disjoint
	Touches
	Within
	Overlaps
	Crosses
	Intersects
	Contains
	DWithin
	BBOX
Scalar Capabilities	
Logical Operators	
	And
	Or
	Not
Comparison Operators	
	PropertyIsEqualTo (=)
	PropertyIsNotEqualTo (<>)
	PropertyIsLessThan (<)
	PropertyIsGreaterThan (>)
	PropertyIsLessThanOrEqualTo (<=)
	PropertyIsGreaterThanOrEqualTo (>=)
	PropertyIsLike
	PropertyIsBetween (range)

WFS – Web feature service

► GetCapabilities



WFS – Web feature service

► GetFeature

The screenshot displays the QGIS 2.0.1-Dufour interface. The main map window shows a pink polygonal feature. The layer list on the left includes 'olomoucky_kraj', 'pud_bloky_wfs_sample', and several 'LPIS' layers. The 'Identifikovat výsledky' (Identify Results) window is open, showing a table of attributes for the selected feature.

Objekt	Hodnota
0	LPIS_FB4
idPudníhoBloku	8835201
(Akce)	
(Odvozené)	
CTVEREC	700-1050
ICO	44675488
idPudníhoBloku	8835201
idUzivatele	39831
kodCile	1
mapovyList	13-31-04
mapovyList_1_5000	Cesky Brod 3-7
natura2000ptaciLokalita	0,00
natura2000souhrn	0,00
natura2000vyznamneLokalita	0,00
ochrannaPasmaVodníhoZdroje...	0,00
platnyDo	
platnyOd	27.03.12
prumernaNadmorskaVyska	298,77
prumernaSvazitost	3,20
rezimEZ_PO	Konvenční hospodaření
stav	Účinný
STAV_KOD	4
stavajiciKulturaOd	11.10.03
ucinnostOdDleAktualizaceEP	27.03.12
uzemniPrislusnost	AZV Kolín
uzivatel	KAREL DIVÍŠEK
vymera	10,59
vymeraVBilychKarpatech	0,00
vymeraVMCHU	0,00
vymeraVMoravskemKrasu	0,00
vymeraVZCHU	0,00
ZAUDITO	0
zkracenyKod	9501/2

Poskytovatelé WFS

▶ Česko:

- ▶ eAGRI - účinné krajinné a půdní bloky

- ▶ http://eagri.cz/public/web/file/523757/Uzivatelcka_prirucka__Pouziti_WMS_WFS_v1_24_20200311.pdf

- ▶ ČÚZK - správní a katastrální hranice, INSPIRE parcely, adresy a územní správní jednotky

- ▶ [https://geoportal.cuzk.cz/\(S\(fv1imxuk1wqno4qx4r4gw1lz\)\)/Default.aspx?mode=TextMeta&side=wfs.INSPIRE&text=wfs.INSPIRE&head_tab=sekce-03-gp&menu=334](https://geoportal.cuzk.cz/(S(fv1imxuk1wqno4qx4r4gw1lz))/Default.aspx?mode=TextMeta&side=wfs.INSPIRE&text=wfs.INSPIRE&head_tab=sekce-03-gp&menu=334)

- ▶ AOPK ČR

- ▶ https://aopk.mze.cz/publik_syst/ctihtmlpage.php?what=6103&X=X

- ▶ ČGS

- ▶ <http://www.geodata.gov.cz/ranet/mapy/mapy-online/stahovaci-sluzby>

- ▶ Corine Land cover

- ▶ <http://micka.cenia.cz/record/basic/550aab71-c794-4ae1-99bc-15e1c0a80153>

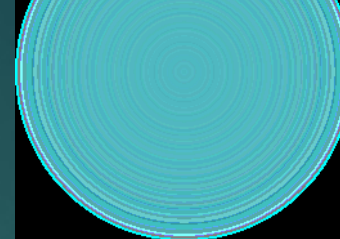
▶ Svět:

- ▶ US Geological Survey - nerostné zdroje USA
- ▶ USDA Forest Service – mapování požárů (USA + Kanada)
- ▶ Sinergise Sentinel Hub – data družic Sentinel (Slovinsko+EU)

Prezentácie

- ▶ <https://docs.google.com/spreadsheets/d/1Sld2-f2-4AX8BRXNBqmPP0QzITwBlxLk+W5UEJUNBlk/edit#gid=0>
- ▶ Po dvojacich
- ▶ Cca 10-15 minút
- ▶ Sfručne, ale pútavo
- ▶ Na záver zhrnutie
 - ▶ O čo ide
 - ▶ Produkty
 - ▶ Výhody, nevýhody
 - ▶ Prínos
 - ▶ Aj.

Každý týždeň 2-3? prezentácie (+1 záložná)
Odovzdať do ISu – stačí aj po odprezentovaní
Použiteľné ako študijný materiál pred skúškou



Ďakujem za pozornosť

