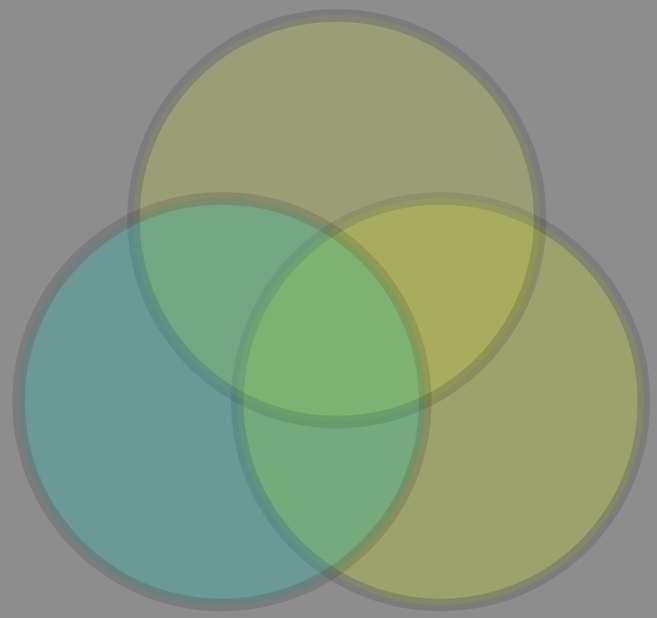
SHP, SHX, DBF, KML등 GIS 용어 개념 정리

맵핑스터디



Infographic Design 2016
Bae Yeowoon

SHP, SHX, DBF, KML

Data Journalism 2016

Bae Yeowoon

SHP, SHX, DBF, KML

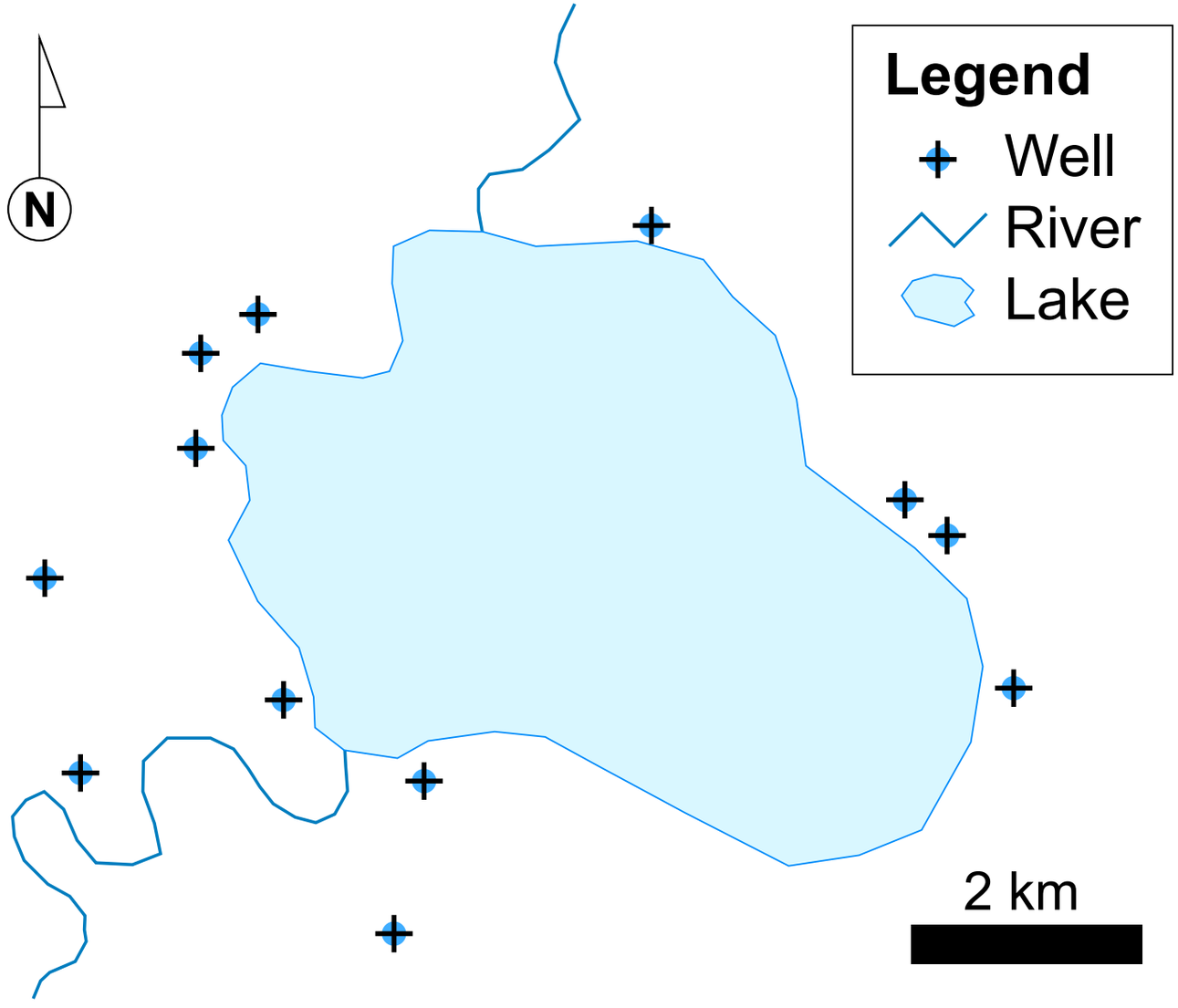
용어정의와 활용

김정호의 입장에서
지도를 만든다고 생각해봤음

- 행정구역 경계
- 산, 강, 하천 등을 표시
- 성, 관문 등 인공물 경계 등
- 거기에 자연, 행정구역명, 인공물 이름 등에 대한 속성값 (attribution)
- 그 속성의 값 (ex. 남대문 높이 = 몇 척)

SHP, SHX, DBF, KML

용어정의와 활용



오늘날 별반 다를 것이 없음
디지털에서도 모든 것들이 내포됨

→ 어디에? Shapefile

Shapefile을 알자

The shapefile format is a popular geospatial **vector** data format for geographic information system (GIS) software. It is developed and regulated by Esri as a (mostly) open specification for data interoperability among Esri and other GIS software products. The shapefile format can spatially describe vector features: **points, lines, and polygons**, representing, for example, water wells, rivers, and lakes. Each item usually has **attributes** that describe it, such as name or temperature.

중요한건 shapefile은 벡터 형식이며 점, 선, 도형으로 표현된다
또한 그 속성을 지니고 있음

SHP, SHX, DBF, KML

용어정의와 활용

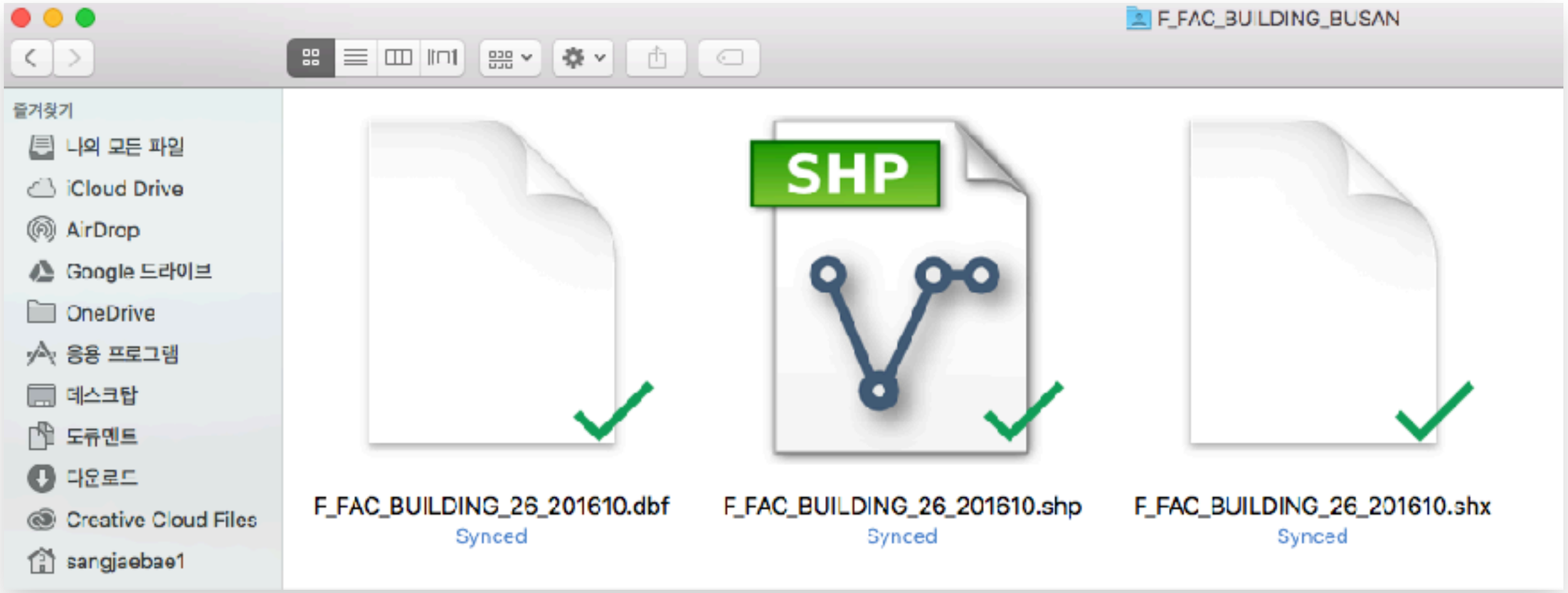
오해

The term "shapefile" is quite common, but is **misleading** since the **format consists of a collection of files** with a common filename prefix, stored in the same directory. The three mandatory files have filename extensions **.shp, .shx, and .dbf.**

shapefile을 하나의 파일 포맷이라고 생각하지만
사실, 3개의 확장 포맷을 통틀어 shapefile이라고 하며
shp, shx, dbf가 해당 포맷을 뜻함

SHP, SHX, DBF, KML

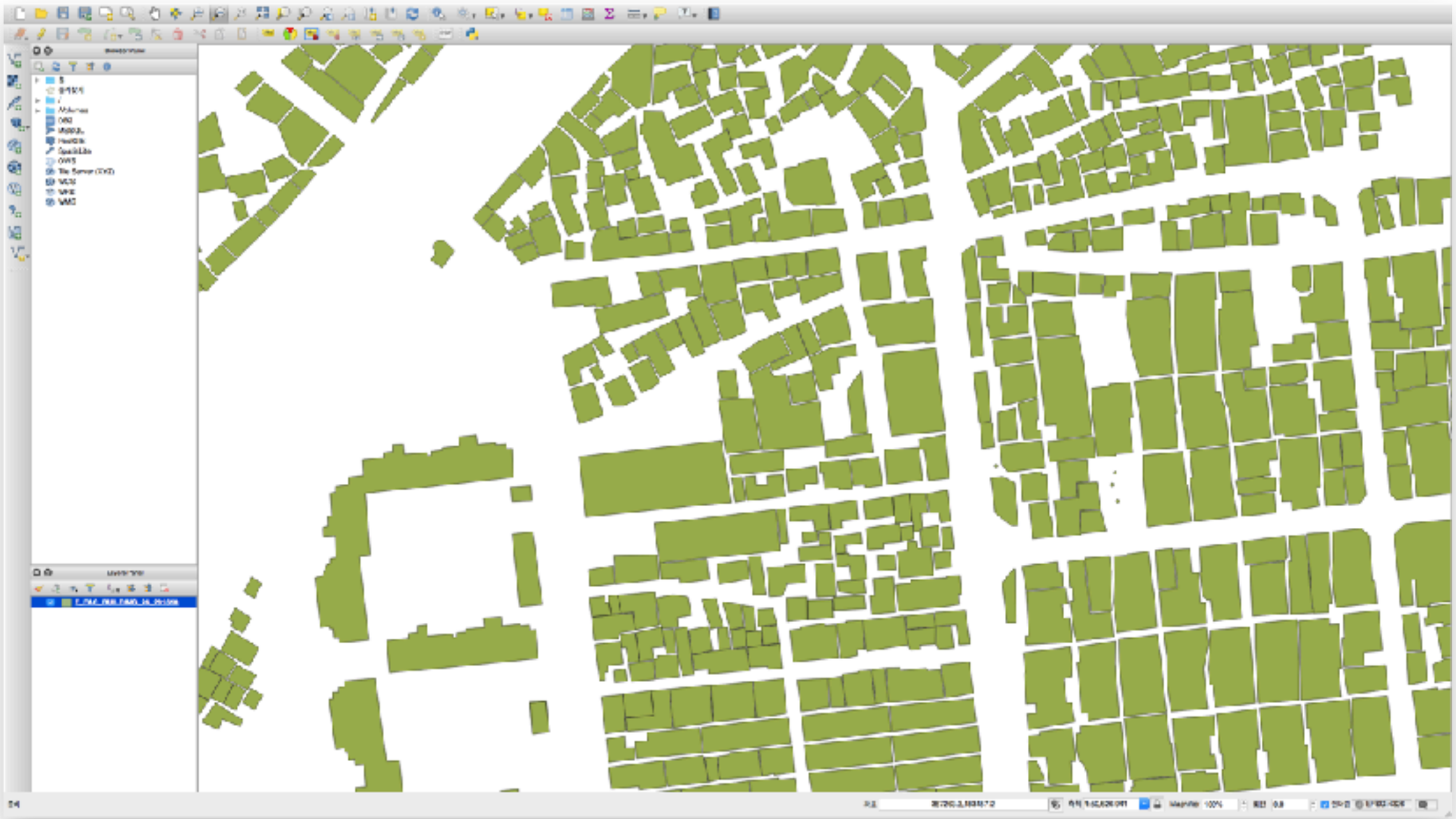
용어정의와 활용



국가공간정보포털 오픈마켓에서 건물통합정보_마스터_부산광역시 데이터 다운로드
폴더를 열어보면 앞서 언급했듯이 shp, shx, dbf로 구성된 것을 확인할 수 있었음
shp는 QGIS바로 실행

SHP, SHX, DBF, KML

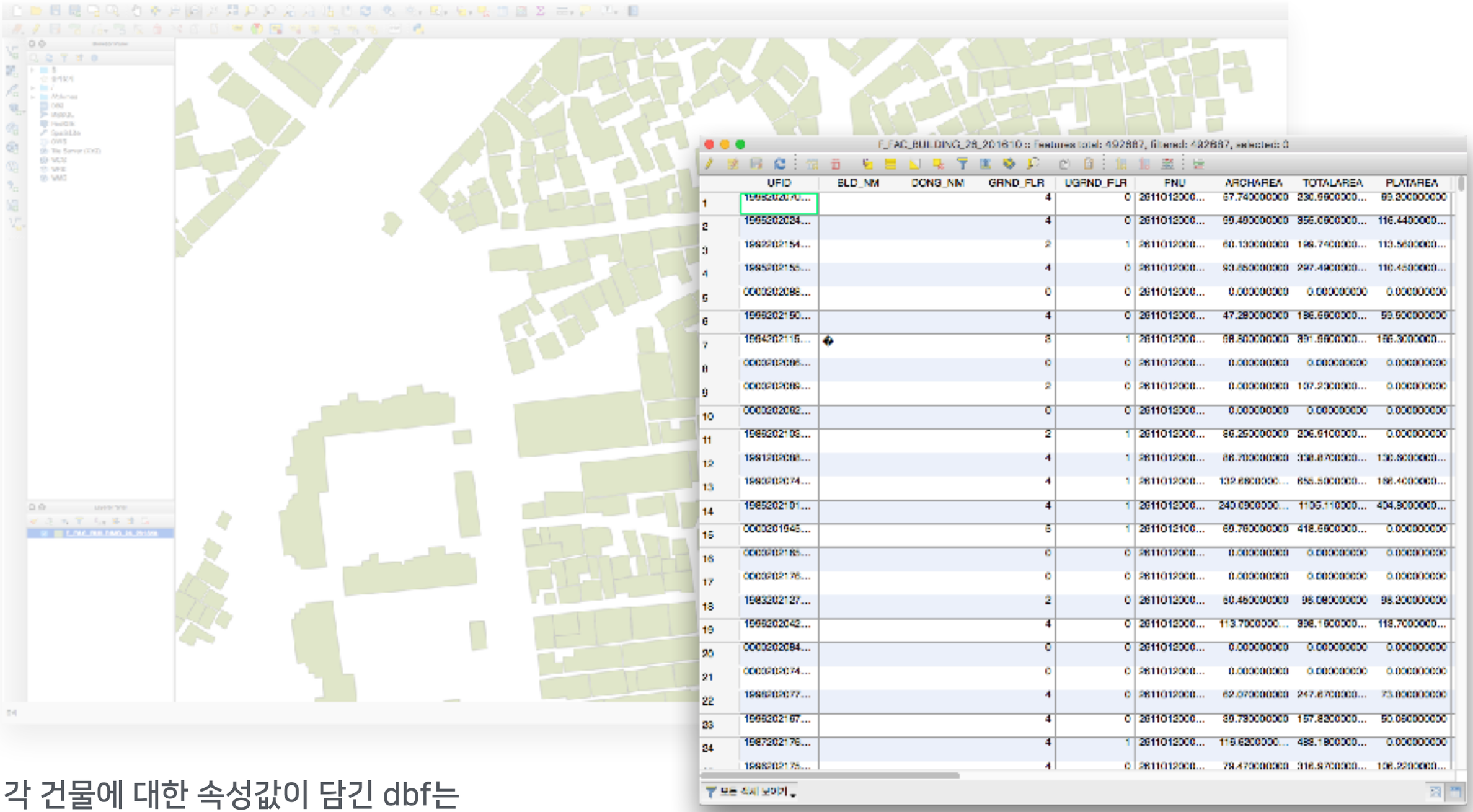
용어정의와 활용



벡터 형식의 건물들이 세밀하게 그려져있음

SHP, SHX, DBF, KML

용어정의와 활용



각 건물에 대한 속성값이 담긴 dbf는
테이블 형식(tidy data)으로 생겼음

shp, shx = data (공간 데이터)

dbf = information (속성 정보)

그럼 geojson과 topojson은 뭐지?

Data Journalism 2016
Bae Yeowoon

SHP, SHX, DBF, KML

용어정의와 활용

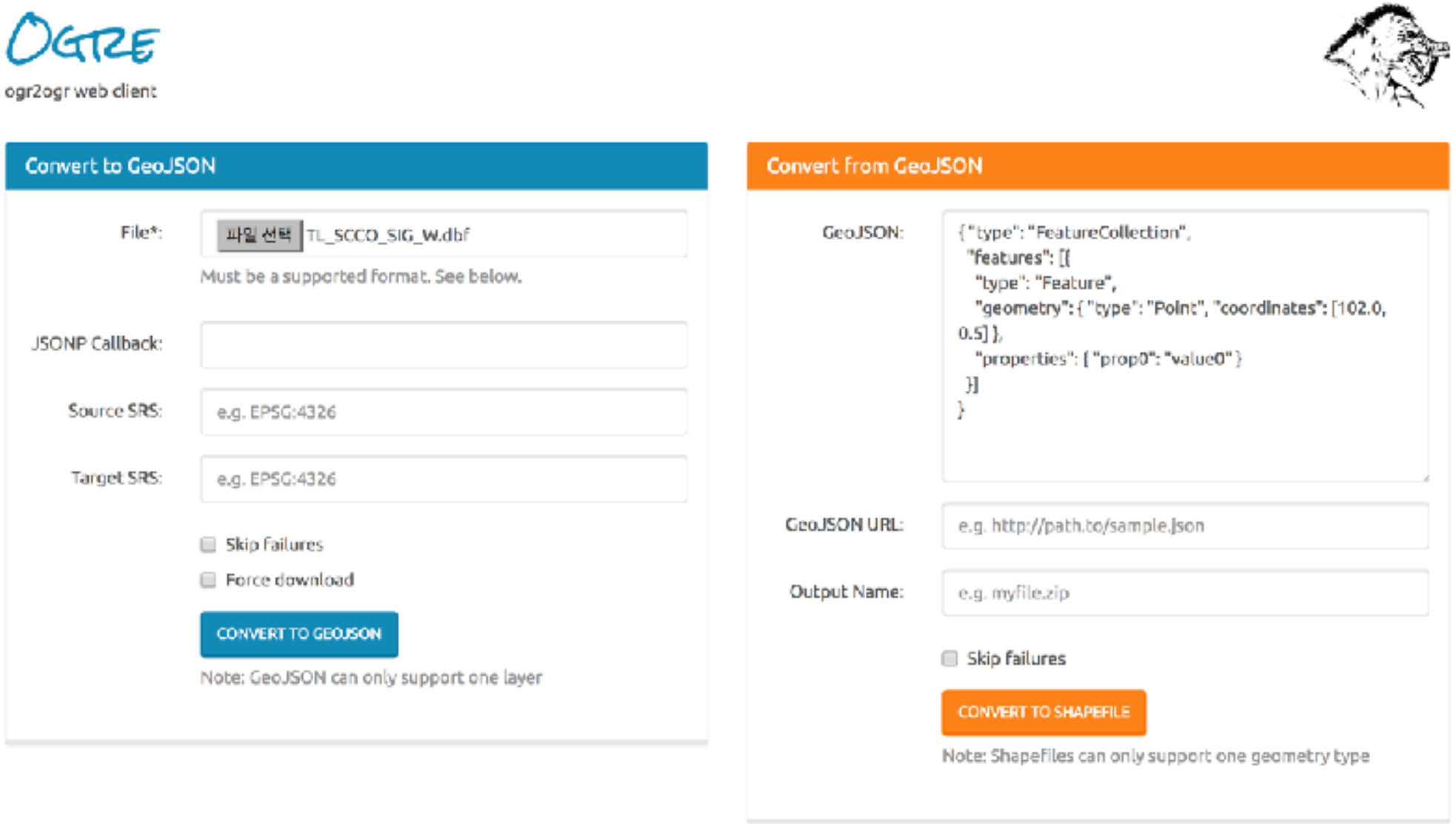
QGIS에서는 shapefile을
분석 혹은 특정 위치(공간)편집으로 활용

그럼 웹과 모바일에 데이터시각화를 하려면?
Shp 파일포맷은 웹에서 인식하지 못함!!

웹의 형식에 맞는 파일포맷이 필요 = json or xml
javaScript는 json이 적절

SHP, SHX, DBF, KML

용어정의와 활용



많은 free-converter가 있으므로 활용하면 된다

https://ogre.adc4gis.com/

SHP, SHX, DBF, KML

용어정의와 활용

SIG_CD / SIG_KOR_NM / SIG_ENG_NM / ESRI_PK / SHAPE_AREA / SHAPE_LEN

총 6개의 변수

TL_SCCO_SIG_W :: Features total: 25, filtered: 25, selected:

	SIG_CD	SIG_KOR_NM	SIG_ENG_NM	ESRI_PK	SHAPE_AREA	SHAPE_LEN
1	11320		Dobong-gu	0	0.002109905…	0.239901251…
2	11380		Eunpyeong-gu	1	0.003040616…	0.327143037…
3	11230	뺣	Dongdaemu…	2	0.001453162…	0.182837041…
4	11590	\	Dongjak-gu	3	0.001669980…	0.237795665…
5	11545	õ	Geumcheon-…	4	0.001325485…	0.211649446…
6	11530	ɑ	Guro-gu	5	0.002046824…	0.347567970…
7	11110	ɑ	Jongno-gu	6	0.002447514…	0.290100465…
8	11305	ɐ	Gangbuk-gu	7	0.002411793…	0.267441132…
9	11260	ƨ	Jungnang-gu	8	0.001892675…	0.184716018…
10	11680		Gangnam-gu	9	0.004027015…	0.348411974…
11	11500		Gangseo-gu	10	0.004227041…	0.435694326…

SHP, SHX, DBF, KML

용어정의와 활용

SIG_CD / SIG_KOR_NM / SIG_ENG_NM / ESRI_PK / SHAPE_AREA / SHAPE_LEN

총 6개의 변수


```
{"type":"FeatureCollection","features":
[{"type":"Feature","properties":
{"SIG_CD":"11320","SIG_KOR_NM":"도봉구","SIG_ENG_NM":"Dobong
gu","ESRI_PK":0,"SHAPE_AREA":0.00211,"SHAPE_LEN":0.239901}
metry":null},{"type":"Feature","properties":
```

SHP, SHX, DBF, KML

용어정의와 활용

shp to geojson

F_FAC_BUILDING_26_201610.json × Package Control Messages ×


```
{"type":"GeometryCollection","geometries":[
{"type":"Polygon","coordinates":[[[384406.6663542697,180560.75602503493],[384411.5945480354,180554.47103276476],[3
{"type":"Polygon","coordinates":[[[384365.06381845474,180665.3279296495],[384358.3674320448,180661.95143942535],[3
{"type":"Polygon","coordinates":[[[384497.7088764552,180530.06115197577],[384490.2623988148,180528.16052611545],[3
{"type":"Polygon","coordinates":[[[384499.8552755248,180513.8141439706],[384498.89258510526,180507.4408674352],[38
{"type":"Polygon","coordinates":[[[384420.97627923544,180568.17782269046],[384418.8900755951,180572.40857812017],[
{"type":"Polygon","coordinates":[[[384493.42833982036,180483.51635422558],[384486.82305231504,180479.09104496986],
{"type":"Polygon","coordinates":[[[384462.0921207899,180499.79856622592],[384460.27924180496,180495.8997637406],[3
{"type":"Polygon","coordinates":[[[384420.0782152703,180566.5587945506],[384424.47270313,180567.46755372547],[3844
{"type":"Polygon","coordinates":[[[384427.5247472897,180548.47602450475],[384420.3765215948,180551.65453526936],[3
{"type":"Polygon","coordinates":[[[384397.6045370698,180566.04744076543],[384393.24176929984,180573.52451963536],[
{"type":"Polygon","coordinates":[[[384436.5737880552,180545.31567311473],[384446.4288320597,180539.38978151418],[3
{"type":"Polygon","coordinates":[[[384422.9367378354,180514.30274521932],[384431.6575139202,180511.0457445141],[38
{"type":"Polygon","coordinates":[[[384419.63383479975,180469.9489428699],[384413.0465857554,180465.12374939583],[3
{"type":"Polygon","coordinates":[[[384434.0183913801,180533.54708613083],[384450.26886588987,180525.0569552444],[3
{"type":"Polygon","coordinates":[[[384292.65613291506,180470.84416685998],[384292.6472166348,180469.79333662428],[
{"type":"Polygon","coordinates":[[[384499.7490925547,180547.55295543],[384498.5544514349,180549.74033738486],[3844
{"type":"Polygon","coordinates":[[[384510.08695001993,180555.00505666435],[384513.7559005646,180555.66910286061],[
{"type":"Polygon","coordinates":[[[384458.65993856546,180541.75572094508],[384464.15594977513,180544.11748841032],
{"type":"Polygon","coordinates":[[[384377.9534966601,180659.76317425072],[384382.4142028149,180650.89720174484],[3
```

SHP, SHX, DBF, KML

용어정의와 활용

shp to Topojson


```
{"type":"Topology","objects":{"seoul":{"type":"GeometryCollection","bbox":[126.76426640600005,37.4284
"gu":{"type":"GeometryCollection","bbox":[126.76426640600005,37.428455876000044,127.18353760800007,37
{"type":"Polygon","properties":{"SGG_CD":11010,"SIGUNGU_NM":"종로구"},"arcs":[[18,19,20,21,22,23,24,2
{"type":"Polygon","properties":{"SGG_CD":11020,"SIGUNGU_NM":"중구"},"arcs":[[27,28,29,-24,30,-22,31]]
{"type":"Polygon","properties":{"SGG_CD":11030,"SIGUNGU_NM":"용산구"},"arcs":[[32,33,34,35,36,37,38,3
{"type":"Polygon","properties":{"SGG_CD":11040,"SIGUNGU_NM":"성동구"},"arcs":[[40,41,-33,-32,42]]},
{"type":"Polygon","properties":{"SGG_CD":11050,"SIGUNGU_NM":"광진구"},"arcs":[[43,44,45,-41,46,47,2]]
{"type":"Polygon","properties":{"SGG_CD":11060,"SIGUNGU_NM":"동대문구"},"arcs":[[-47,-43,-21,48,-19,4
{"type":"Polygon","properties":{"SGG_CD":11070,"SIGUNGU_NM":"중랑구"},"arcs":[[-48,-51,51,52,1]]},
{"type":"Polygon","properties":{"SGG_CD":11080,"SIGUNGU_NM":"성북구"},"arcs":[[53,54,-52,-50,-27,15]]
{"type":"Polygon","properties":{"SGG_CD":11090,"SIGUNGU_NM":"강북구"},"arcs":[[55,56,-54,16]]},
{"type":"Polygon","properties":{"SGG_CD":11100,"SIGUNGU_NM":"도봉구"},"arcs":[[57,-56,17]]},
{"type":"Polygon","properties":{"SGG_CD":11110,"SIGUNGU_NM":"노원구"},"arcs":[[-53,-55,-57,-58,0]]},
{"type":"Polygon","properties":{"SGG_CD":11120,"SIGUNGU_NM":"은평구"},"arcs":[[-26,58,59,13]]},
{"type":"Polygon","properties":{"SGG_CD":11130,"SIGUNGU_NM":"서대문구"},"arcs":[[-30,60,-59,-25]]},
{"type":"Polygon","properties":{"SGG_CD":11140,"SIGUNGU_NM":"마포구"},"arcs":[[-61,-29,-40,61,-38,62,
{"type":"Polygon","properties":{"SGG_CD":11150,"SIGUNGU_NM":"양천구"},"arcs":[[64,65,10,66]]},
{"type":"Polygon","properties":{"SGG_CD":11160,"SIGUNGU_NM":"강서구"},"arcs":[[-64,67,-67,11]]},
{"type":"Polygon","properties":{"SGG_CD":11170,"SIGUNGU_NM":"구로구"},"arcs":[[68,69,9,-66,70]]},
{"type":"Polygon","properties":{"SGG_CD":11180,"SIGUNGU_NM":"금천구"},"arcs":[[71,8,-70]]},
```

R을 활용한 DBF 편집

Data Journalism 2016

Bae Yeowoon

R을 테스트한 이유

용어정의와 활용

```
#install.packages("foreign")
#library(foreign)

#import dbf to R
mydata <- read.dbf("seoul.dbf", as.is = TRUE)
class(mydata$SIG_KOR_NM
View(mydata)
```

R을 테스트한 이유

용어정의와 활용

Untitled1* | mydata

Filter

	SIG_CD	SIG_KOR_NM	SIG_ENG_NM	ESRI_PK	SHAPE_AREA	SHAPE_LEN
1	11320	<b5><b5><ba><c0><b1><b8>	Dobong-gu	0	0.002109905	0.2399013
2	11380	<c0><ba><c6><f2><b1><b8>	Eunpyeong-gu	1	0.003040617	0.3271430
3	11230	<b5><bf><b4>빨<b1><b8>	Dongdaemun-gu	2	0.001453163	0.1828370
4	11590	<b5><bf><c0>\<b8>	Dongjak-gu	3	0.001669980	0.2377957
5	11545	<b1><dd>ð<b1><b8>	Geumcheon-gu	4	0.001325486	0.2116494
6	11530	<b1><b8><b7>α<b8>	Guro-gu	5	0.002046825	0.3475680
7	11110	<c1><be><b7>α<b8>	Jongno-gu	6	0.002447515	0.2901005
8	11305	<b0><ad><ba>ϱ<b8>	Gangbuk-gu	7	0.002411793	0.2674411
9	11260	<c1>2<fb><b1><b8>	Jungnang-gu	8	0.001892675	0.1847160
10	11680	<b0><ad><b3><b2><b1><b8>	Gangnam-gu	9	0.004027015	0.3484120
11	11500	<b0><ad><bc><ad><b1><b8>	Gangseo-gu	10	0.004227042	0.4356943
12	11140	<c1>̂<b8>	Jung-gu	11	0.001016698	0.1912424
13	11740	<b0><ad><b5><bf><b1><b8>	Gangdong-gu	12	0.002504421	0.2425955
14	11215	<b1><a4><c1><f8><b1><b8>	Gwangjin-gu	13	0.001736505	0.1867324

Showing 1 to 14 of 25 entries

감사합니다

배여운
010.6524.5112
woons.2016@gmail.com

Data Journalism 2016
Bae Yeowoon