

Métodos Computacionales para Políticas Públicas (MCPP) – Semana 13

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2019 – II

La semana pasada

Análisis de texto

Hoy (esta semana)

1. Tableau

<https://www.tableau.com/>

2. QGIS

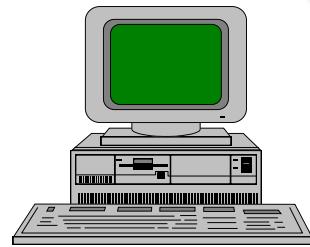
<http://www.qgis.org/en/site/forusers/books/index.html>

http://www.qgistutorials.com/en/docs/learning_resources.html

Repositorio MCPP.

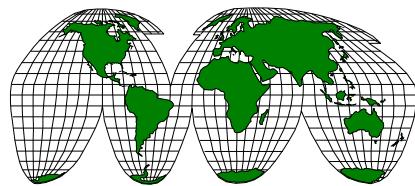
GIS: Geographic Information System

Information System



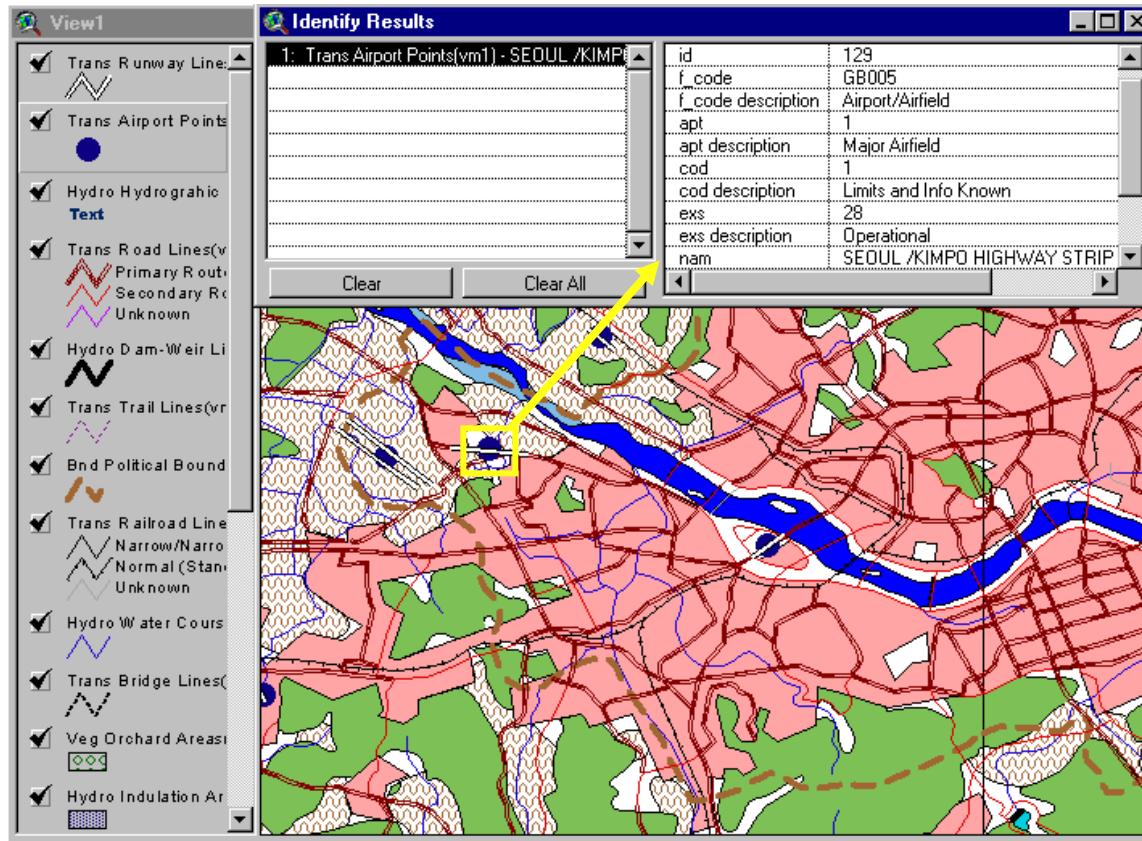
+

Geographic Position



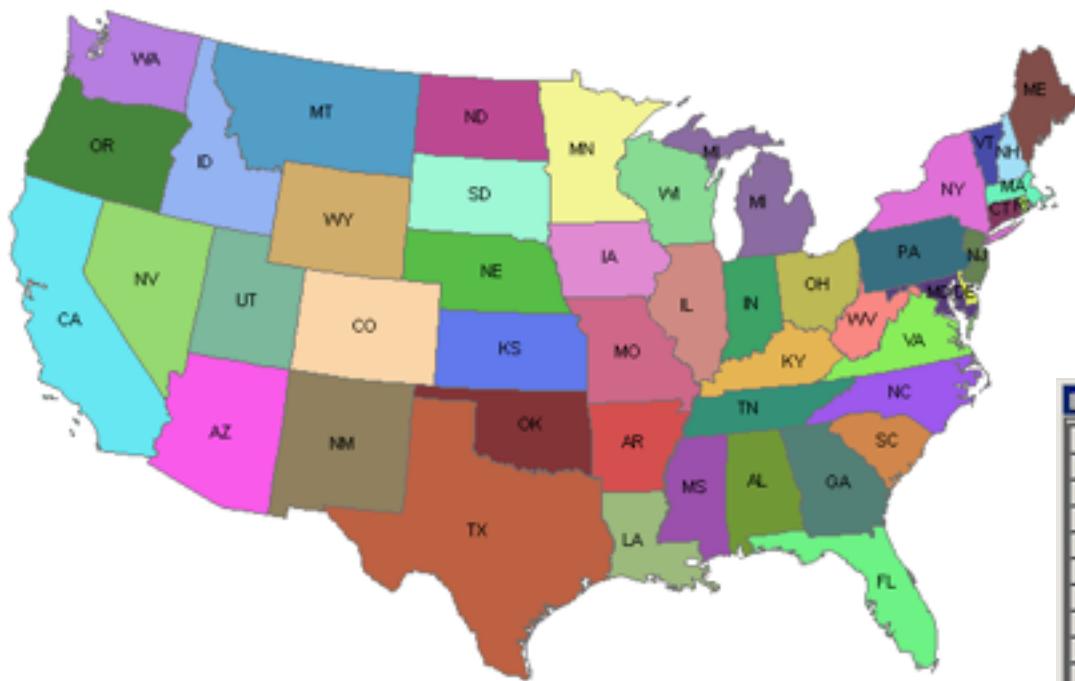
GIS es un sistema basado en computación, que almacena capas con información geográfica y la vincula con datos (tablas). Permite un amplio rango de procesamiento de información: manipulación, análisis, modelación y, por supuesto, producción de mapas para visualización.

GIS: Geographic Information System



GIS vincula características gráficas (**features**) a datos almacenados en tablas (**attributes**).

GIS: Geographic Information System



Características (*features*):

Representación gráfica espacial de una característica física “real”.

Atributos:

Datos no-espaciales que describen los *features*

Attributes of States_Table						
ABBR	NAME	AREA	SUB_REGI_1	POP1990	POP2000_1	
HI	Hawaii	6428.217	Pacific	1108229	1184688	
WA	Washington	67566.127	Pacific	4066692	5835089	
MT	Montana	147043.116	Mtn	799065	885795	
ME	Maine	32495.312	N Eng	1227928	1257219	
ND	North Dakota	70700.125	WN Cen	638800	631032	
SD	South Dakota	77116.862	WN Cen	696004	734993	
WY	Wyoming	97813.807	Mtn	453588	479673	
WI	Wisconsin	56050.459	E N Cen	4891769	5277833	
ID	Idaho	83570.06	Mtn	1006749	1273309	
VT	Vermont	9614.299	N Eng	562758	596714	
MN	Minnesota	84383.092	WN Cen	4375099	4820250	
OR	Oregon	96954.726	Pacific	2842321	3356108	
NH	New Hampshire	9265.988	N Eng	1109252	1215100	
IA	Iowa	56271.701	WN Cen	2776755	2877060	
MA	Massachusetts	8118.475	N Eng	6016425	6206482	
NE	Nebraska	77353.859	WN Cen	1578385	1672199	
NY	New York	48623.846	Mid Atl	17990455	18223519	
PA	Pennsylvania	45301.263	Mid Atl	11881643	11986139	
CT	Connecticut	4975.458	N Eng	3287116	3289062	
RJ	Rhode Island	1088.882	N Eng	1003464	9920111	
NJ	New Jersey	7545.009	Mid Atl	7730188	8192396	
DE	Delaware	924.059	Mid Atl	4244201	4277044	

GIS: Geographic Information System



Attributes of States_Table						
ABBR	NAME	AREA	Sub Region	POP1990	POP2000	
IL	Illinois	56339.364	E N Cen	11430602	12187552	
DC	District of Columbia	68.342	S Atl	606900	513618	
DE	Delaware	2012.514	S Atl	666168	762227	
WV	West Virginia	24229.8	S Atl	1793477	1804812	
MD	Maryland	9996.506	S Atl	4781468	5212902	
CO	Colorado	104091.253	Mtn	3294394	4139027	
KY	Kentucky	40409.048	E S Cen	3685296	3988695	
KS	Kansas	82278.968	W N Cen	2477574	2672387	
VA	Virginia	39978.562	S Atl	6167358	6945067	
MO	Missouri	69704.423	W N Cen	5117073	5502243	
AZ	Arizona	114000.36	Mtn	3665226	4094006	
OK	Oklahoma	69898.272	W S Cen	3145585	3383158	
NC	North Carolina	49364.622	S Atl	6626637	7762819	
TN	Tennessee	42143.33	E S Cen	4877185	5539577	
TX	Texas	264710.982	W S Cen	16986510	20398490	
NM	New Mexico	121591.701	Mtn	1515069	1759021	
AL	Alabama	51655.693	E S Cen	4040587	4395481	
MS	Mississippi	47664.922	E S Cen	2573216	2788415	
GA	Georgia	58830.269	S Atl	6478216	7950119	
SC	South Carolina	30950.951	S Atl	3486703	3935123	
AR	Arkansas	53178.652	W S Cen	2350725	2566930	
LA	Louisiana	46738.807	W S Cen	4219973	4386033	
FL	Florida	56616.254	S Atl	12937926	15341165	

Selección de datos por atributos

GIS: Geographic Information System

Por categoría (región)

Attributes of States_Table					
ABBR	NAME	AREA	Sub Region	POP1990	POP2000
HI	Hawaii	8428.217	Pacific	1108229	1184688
WA	Washington	167586.125	Pacific	4966692	5835089
MT	Montana	167043.159	Mtn	799085	888795
ME	Maine	32495.312	N Eng	1227828	1257219
ND	North Dakota	70700.125	W N Cen	638800	631032
SD	South Dakota	77116.662	W N Cen	698604	734993
WY	Wyoming	97913.667	Mtn	453988	479673
WI	Wisconsin	56050.453	E N Cen	4891789	5277833
ID	Idaho	83570.06	Mtn	1006749	1273309
VT	Vermont	9814.259	N Eng	562158	586714
MN	Minnesota	84383.092	W N Cen	4375099	4820250
OR	Oregon	98954.726	Pacific	2842321	3358108
NH	New Hampshire	9265.999	N Eng	1109252	1215100
IA	Iowa	56271.701	W N Cen	2776785	2877060
MA	Massachusetts	8118.475	N Eng	6016425	6206482
NE	Nebraska	77353.859	W N Cen	1578985	1672199



Por cantidades (población)

Attributes of States_Table					
ABBR	NAME	AREA	Sub Region	POP1990	POP2000
AL	Alabama	51655.693	E S Cen	4040587	4395481
AK	Alaska	579209.190	Pacific	550043	624521
AZ	Arizona	114000.36	Mtn	3665239	4894206
AR	Arkansas	53178.652	W S Cen	2350725	2566938
CA	California	158096.791	Pacific	29760021	33603430
CO	Colorado	104091.253	Mtn	3294394	4139027
CT	Connecticut	4875.488	N Eng	3281116	3289062
DE	Delaware	2012.514	S Atl	686168	762227
DC	District of Columbia	88.342	S Atl	606900	513618
FL	Florida	56616.254	S Atl	12937126	15341185
GA	Georgia	58830.269	S Atl	6478216	7950119
HI	Hawaii	8428.217	Pacific	1108229	1184688
ID	Idaho	73570.06	Mtn	1006749	1273309
IL	Illinois	58339.384	E N Cen	11430602	12187552
IN	Indiana	36182.311	E N Cen	5544159	5879351
IA	Iowa	56271.701	W N Cen	2776785	2877060



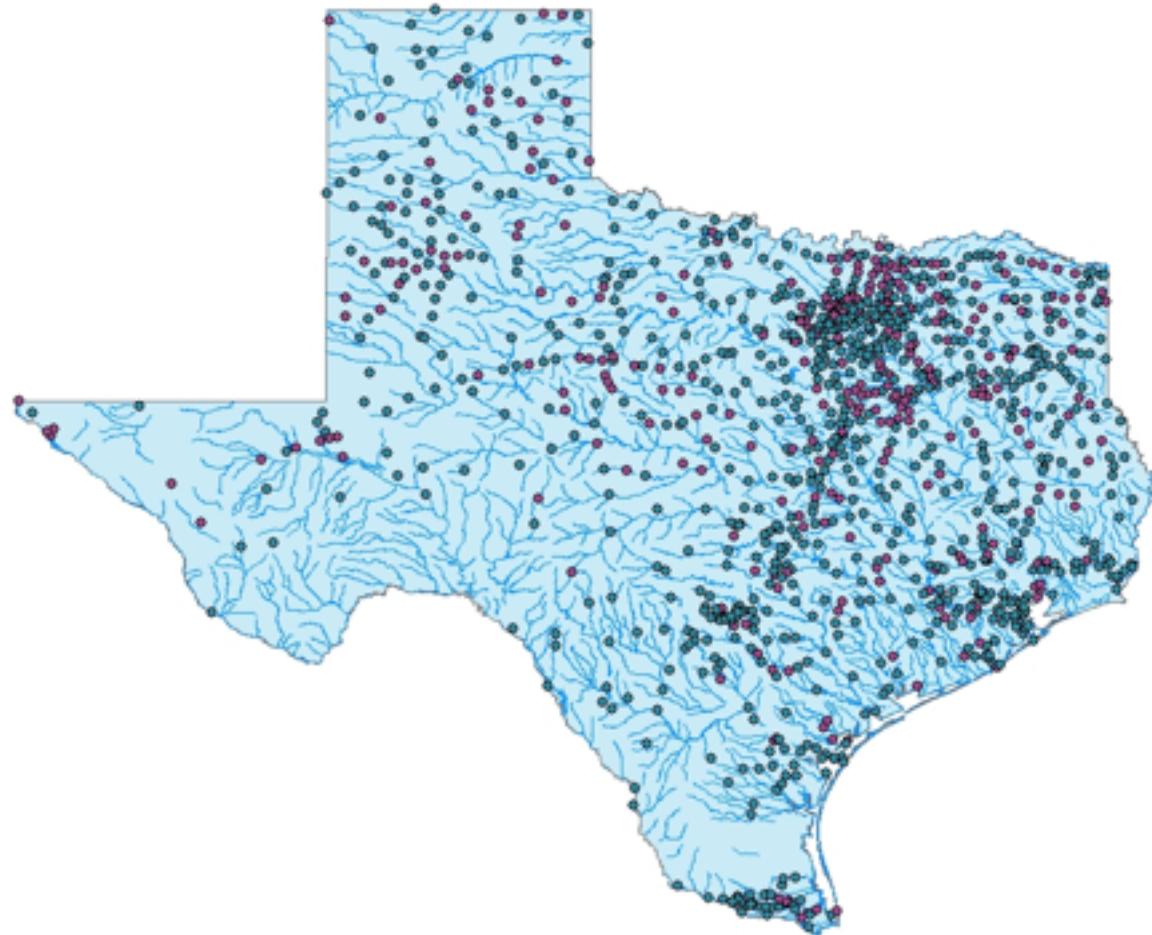
Representación (mediante símbolos) de datos por atributos

GIS: Geographic Information System

Datos vectoriales

(*vector data*):

- Puntos



GIS: Geographic Information System

Datos vectoriales

(*vector data*):

- Puntos
- Líneas



GIS: Geographic Information System

Datos vectoriales

(*vector data*):

- Puntos
- Líneas
- Polígonos



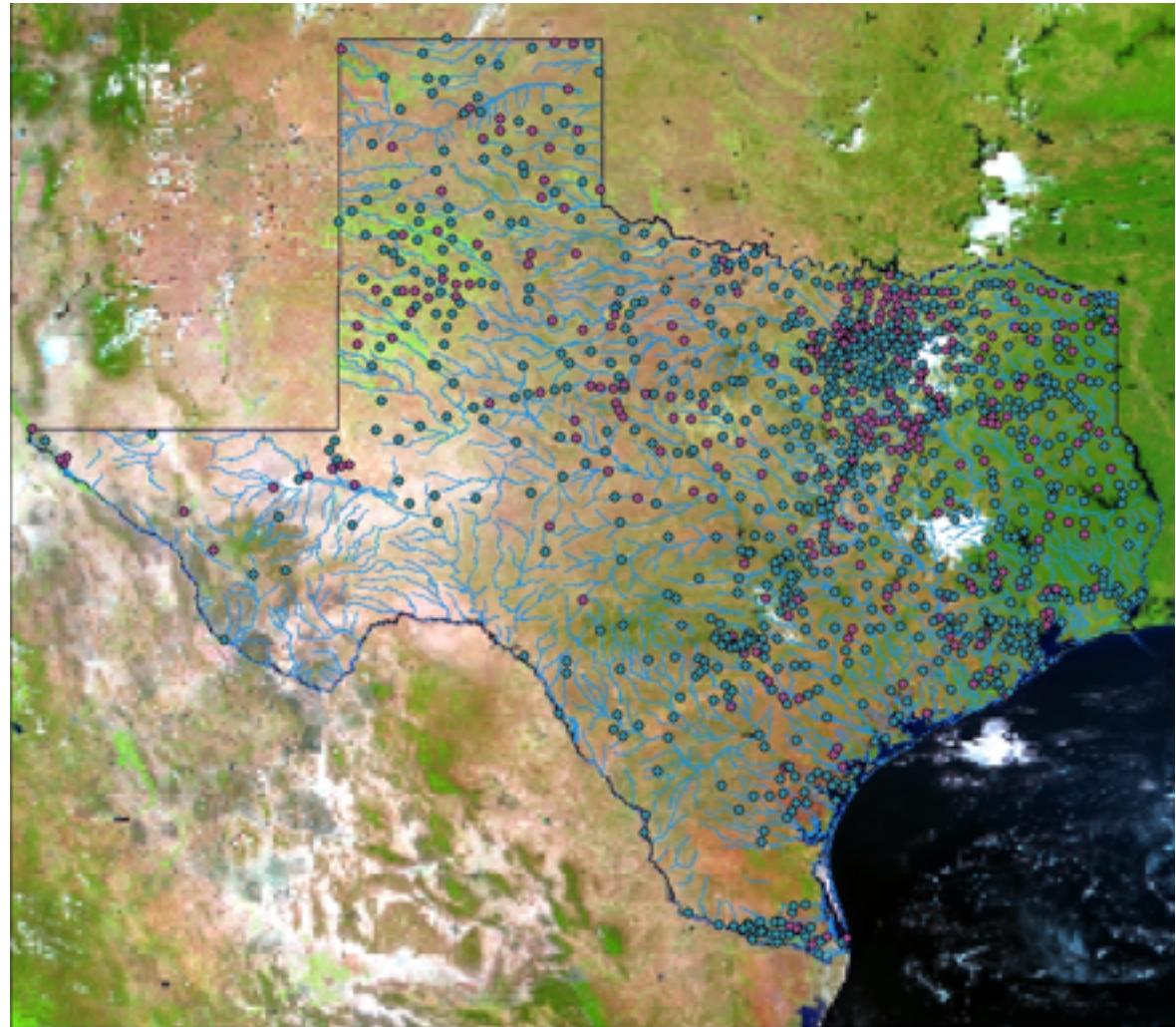
GIS: Geographic Information System

Datos vectoriales
(vector data):

- Puntos
- Líneas
- Polígonos

Datos ráster
(raster data):

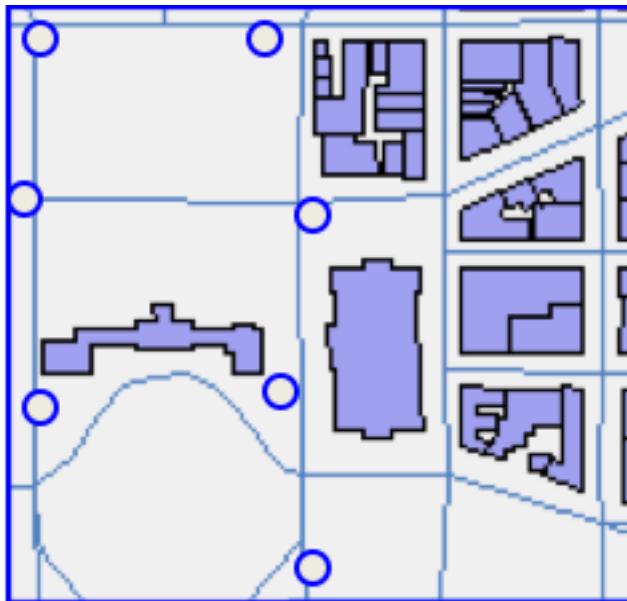
- Pixeles



GIS: Geographic Information System

Datos vectoriales *(vector data)*:

Usa puntos, líneas y polígonos para representar características de la superficies, como calles, edificaciones, trazado de ríos, etc. Ideal para representaciones de elementos discretos.



Datos ráster *(raster data)*:

Compuesto de un continuo de pixeles que representan características de las superficies, como elevación, pendiente, población o imágenes. Ideal para representaciones de elementos continuos.

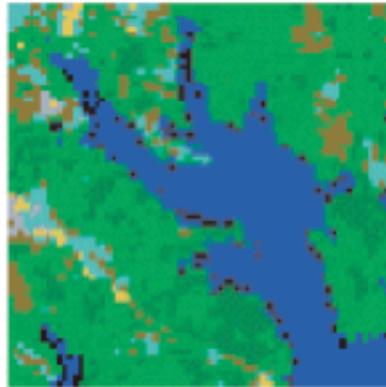


GIS: Geographic Information System

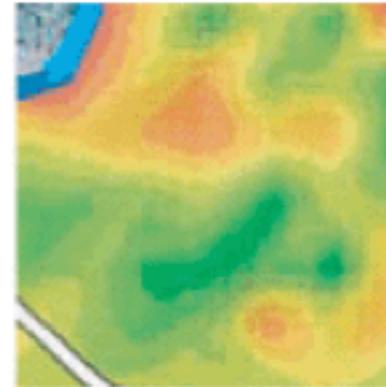
Datos ráster (*raster data*): más ejemplos



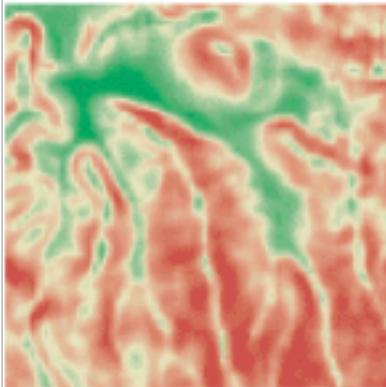
Orthophoto



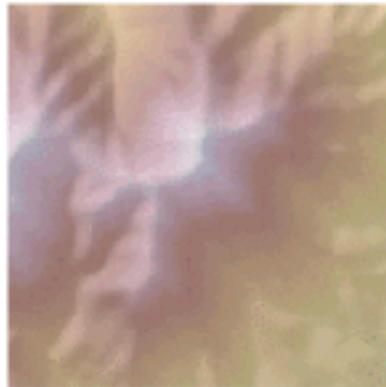
Land Use



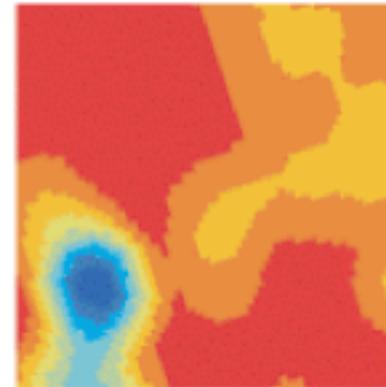
Concentration



Slope



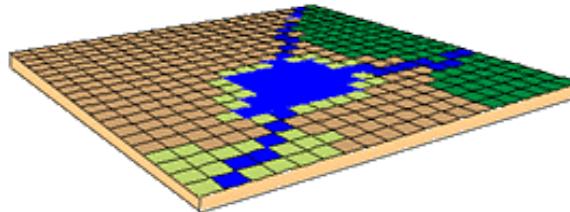
Elevation



Population

GIS: Geographic Information System

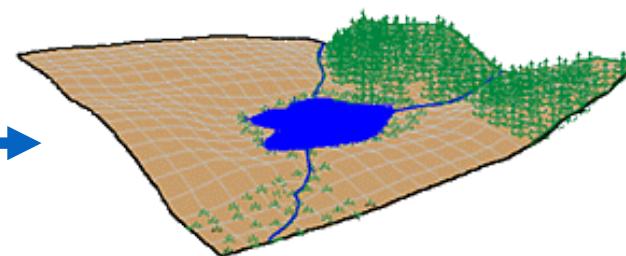
- RASTER



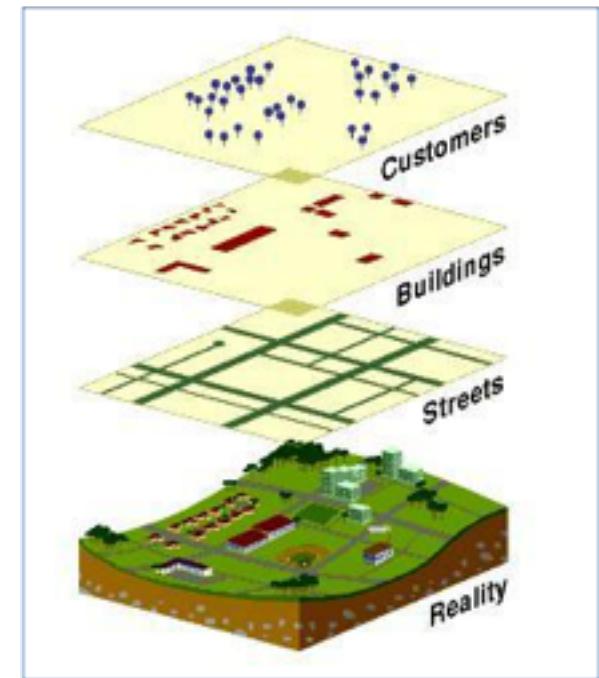
- VECTOR



- Real World



Data Model of Reality



Representación de elementos espaciales

GIS: Geographic Information System

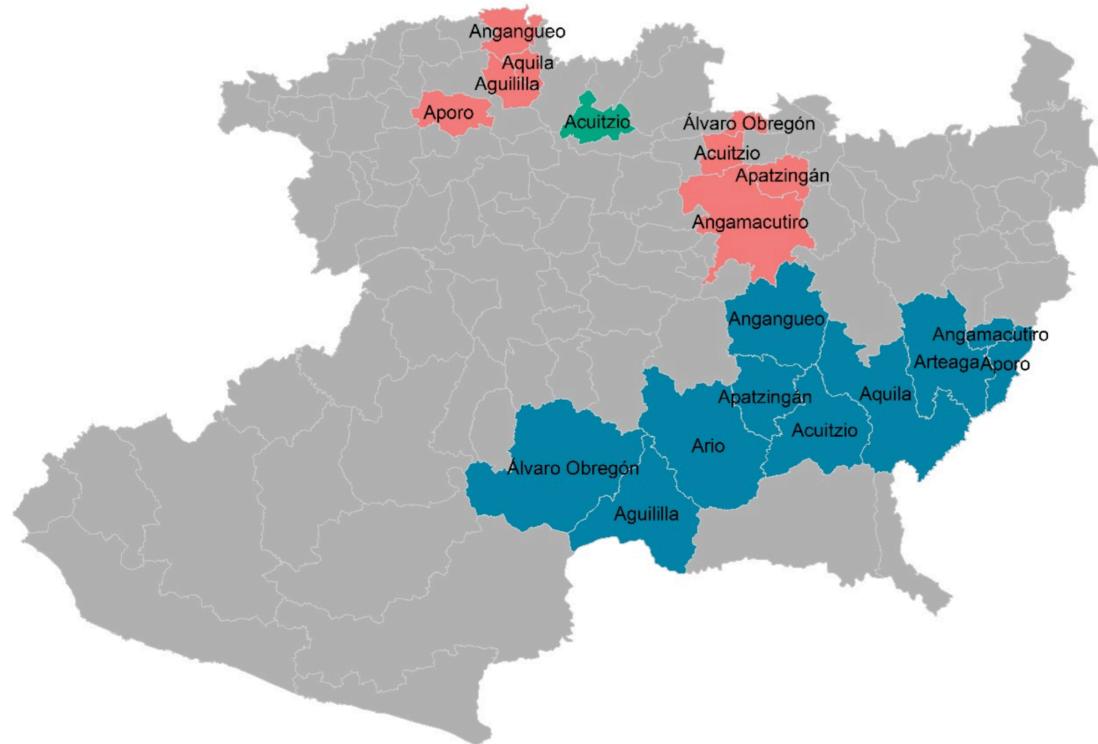
Michoacán State in Mexico



Ejemplos

GIS: Geographic Information System

Poverty clusters in Michoacán



Legend

- ◆ High-high poverty cluster
- ◆ High-low poverty cluster
- ◆ Low-low poverty cluster

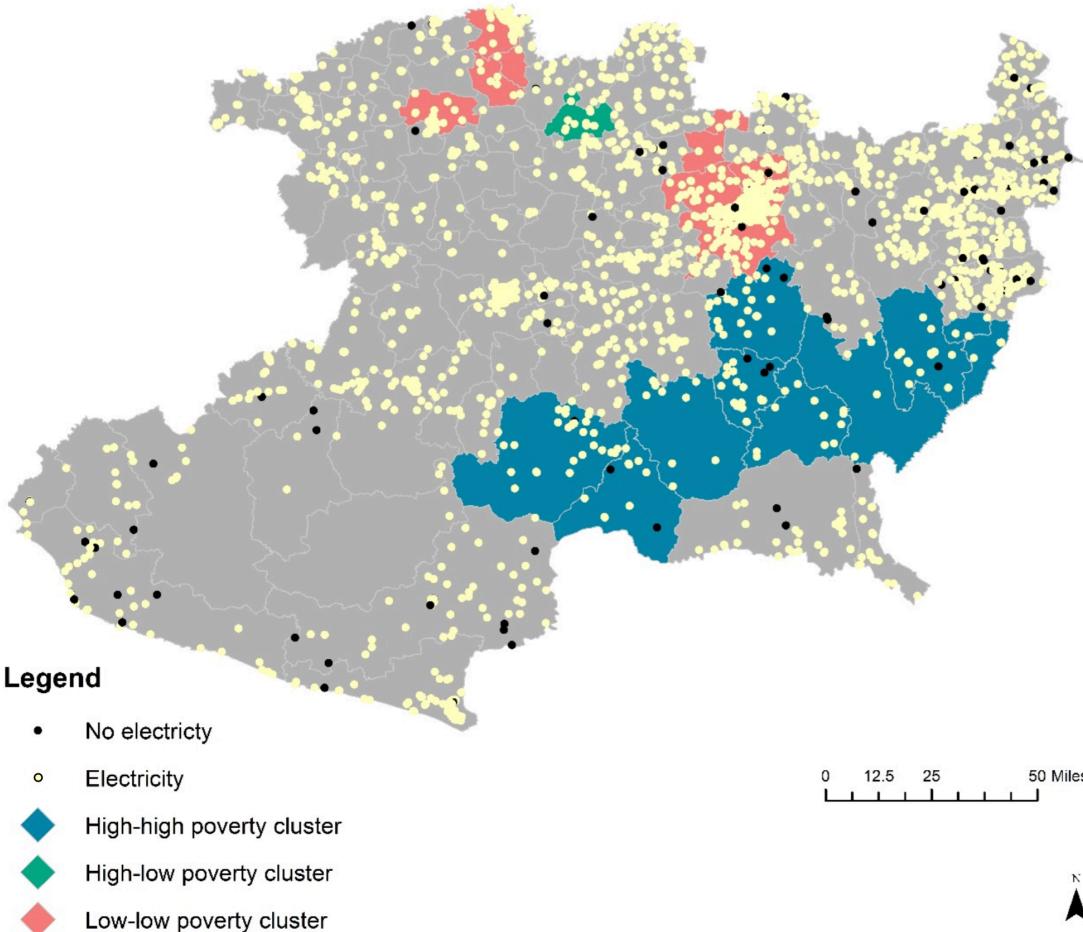
0 12.5 25 50 Miles



Ejemplos

GIS: Geographic Information System

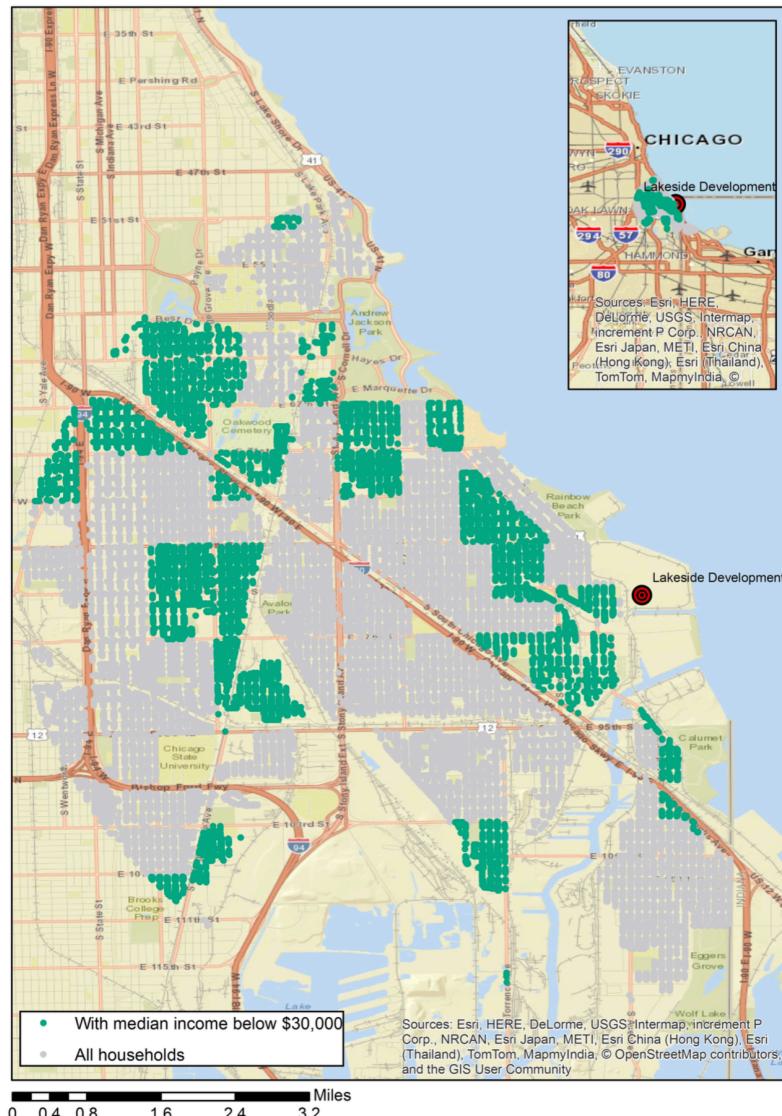
Schools with and without Electricity



Ejemplos

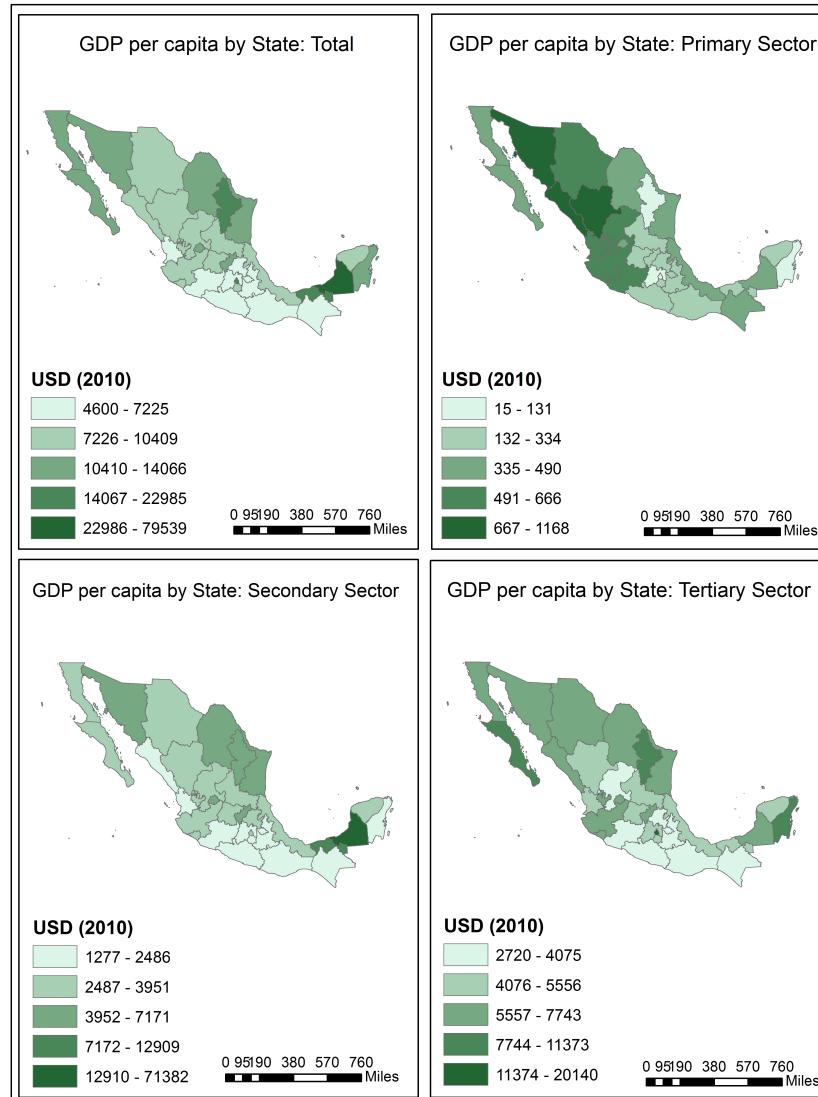
GIS: Geographic Information System

Sample of households within 5 miles of Lakeside development



Ejemplos

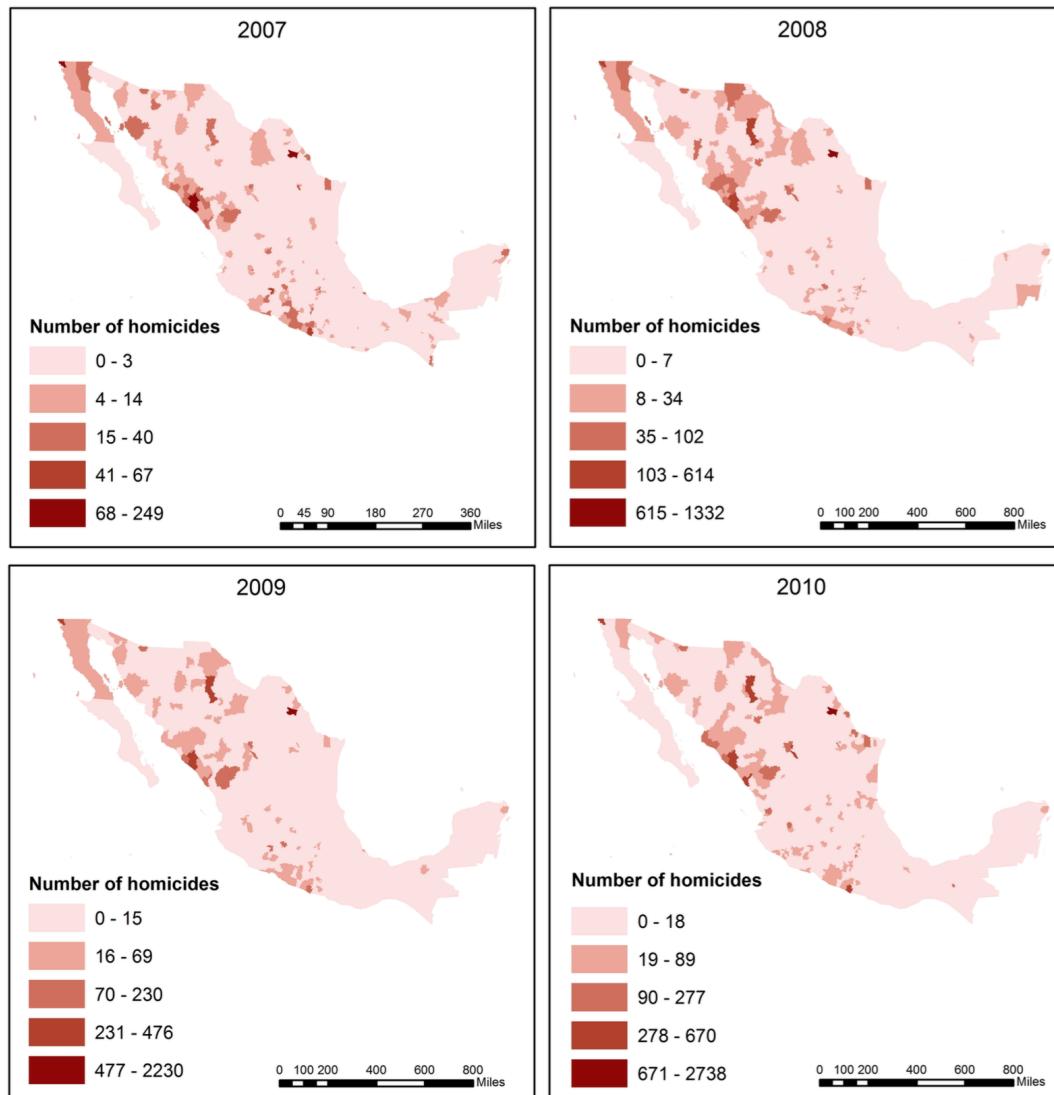
GIS: Geographic Information System



Ejemplos

GIS: Geographic Information System

Number of homicides in Mexico: 2007 – 2010



Ejemplos

Un ejemplo en QGIS

<https://data.cityofchicago.org/Facilities-Geographic-Boundaries/Boundaries-Community-Areas-current-/cauq-8yn6>

<https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present/ijzp-q8t2/data>

<https://data.cityofchicago.org/Health-Human-Services/Census-Data-Selected-socioeconomic-indicators-in-C/kn9c-c2s2>

<https://gis.stackexchange.com/questions/20191/adding-basemaps-from-google-or-bing-in-qgis>

http://www.qgistutorials.com/en/docs/performing_table_joins.html

Tareas

1. Envíe el comentario semanal: *url* disponible en el repositorio del curso.
2. Concéntrese en su proyecto final.