

GEOL 452/552 - GIS for Geoscientists I

Lecture 13 - Chapter 6

- Review of spatial joining (voting cards)
- Multi-step class exercise (Ch6b_class_ex folder)
- Lab: Finish Ch 6 tutorial and HW 6

1

Find the **wrong** statement about spatial joins

When requesting summary statistic(s) (e.g. SUM), **all** numeric fields are calculated

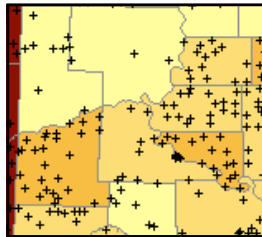
All summarized joins will append a **COUNT**_field

All distance joins will append a **Distance** field

The type and number of features of the joined layer is given by the **source** layer

2

Which county has the most cities (and how many)?
Which is the right strategy?
(look at the table on p. 158)



D: Cities, S: Counties
Summarized Inside Join

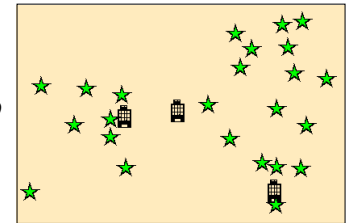
D: Cities, S: Counties
Simple Distance Join

D: Counties, S: Cities
Summarized Inside Join

D: Counties, S: Cities
Simple Inside Join

3

Looking at each hotel, which star is the closest to any hotel?
Which is the right strategy?



D: Hotels, S: Stars
Simple Inside Join

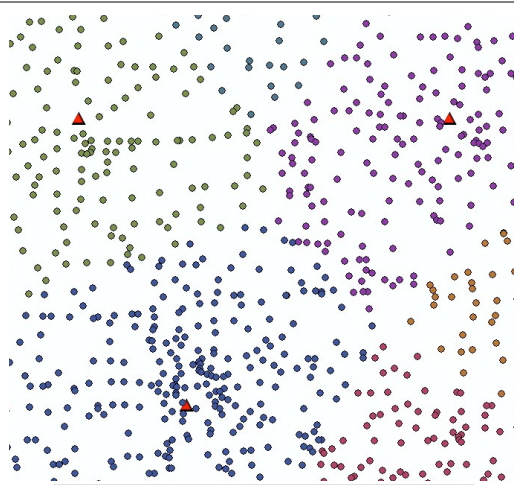
D: Hotels, S: Stars
Simple Distance Join

D: Stars, S: Hotels
Summarized Inside Join

D: Stars, S: Hotels
Simple Distance Join

4

Color each city according to the closest red triangle (each city has to know: which is my closest Triangle!)



D: cities, S: Triangles
Summarized Distance Join

D: Triangles, S: cities
Summarized Inside Join

D: cities, S: Triangles
Summarized Inside Join

D: Triangles, S: cities
Simple Distance Join

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Multi-step Class Exercise

- Copy follow_along_data/Ch6B_class_ex open mxd file inside
- If you can think of an interesting problem involving this data and queries (attr. and/or spatial), Summarize, Statistics or Spatial join - let me know!
- Warm up:
- How many people lived near the Mississippi in 2009?
- near = in a county adjacent to (touching) line
- Update counties with 2009 population data
- stand-alone table: US_county2009_population.dbf

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counties Year 2000 Counties population data layer (already georeferenced)

FID	Shape	NAME	STATE_NAME	POP1990	POP2000
2269	Polygon	Abbeville	South Carolina	23862	24783
2798	Polygon	Acadia	Louisiana	55882	58093
1559	Polygon	Accomack	Virginia	31703	32095
509	Polygon	Ada	Idaho	205775	291195
225	Polygon	Adair	Missouri	24577	24135
774	Polygon	Adair	Iowa	8409	8023
1743	Polygon	Adair	Kentucky	15360	16477
1971	Polygon	Adair	Oklahoma	18421	20732
110	Polygon	Adams	Washington	13603	15218
179	Polygon	Adams	North Dakota	3174	2592
264	Polygon	Adams	Mississippi	35356	33324
349	Polygon	Adams	Idaho	3254	3782

OID	STNAME	CTYNAME	POP2009	Name_only
2287	South Car	Abbeville County	25099	Abbeville
1094	Louisiana	Acadia Parish	60095	Acadia
2791	Virginia	Accomack County	38452	Accomack
522	Idaho	Ada County	384656	Ada
760	Iowa	Adair County	7350	Adair
964	Kentucky	Adair County	18029	Adair
1454	Missouri	Adair County	25135	Adair
2102	Oklahoma	Adair County	21857	Adair
215	Colorado	Adams County	440994	Adams
523	Idaho	Adams County	3520	Adams
566	Illinois	Adams County	67054	Adams
686	Indiana	Adams County	34258	Adams
761	Iowa	Adams County	3930	Adams
1372	Mississippi	Adams County	30722	Adams
1625	Nebraska	Adams County	33324	Adams
1961	North Dako	Adams County	2236	Adams
2014	Ohio	Adams County	26043	Adams
2027	Pennsylvania	Adams County	46000	Adams

US_county2009_population: data (NOT georeferenced, stand-alone table)

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- What kind of join?
- (Why do we get less counties after the join?)
- How to select Mississippi in rivers layer (use SYSTEM)
- What kind of selection query?
- Create a new layer (called Miss. System)

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- What's the total length of all rivers belonging to the Mississippi System?
- What's the total and average number of people in counties intersection the Mississippi System?
- Do we use a Spatial join or spatial query?
- How to symbolize each Miss. river segment with the total number of people living in counties along it?

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Optional:

- Anything else interesting? Any requests?
- Get the cities that are closer to the Mississippi (rivers, this time use NAME) than to any other river
- What kind of spatial join? inside/distance ?simple/summarize ?
- What the result's geometry? Destination layer?
- How to symbolize the result?
- What's the average elevation of these cities?

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Wrap up

- Today: finish Ch 6 tutorial, HW 6
- For next lecture:
send me at least one question for Midterm preparation (I will do HW 4, ex 5 and 6)
email me or put in Bb Discussion Midterm review topics
- next Tuesday (Oct. 18): Midterm (be on time!)

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