

# Manipulation and analysis functions

## 2. Manipulation function of attribute data

### 2.1 Editing graphic attributes

Subtitles may be assigned or changed. Useful for thematics.

Title may be changed.

Map display on / off may be selected.

Locatability may be toggled on / off.

Legend entry may be toggled on / off.

Feature Record Selector

Style	Title	Subtitle	Display	Locatable	Entry
	GADSEN_Area		On		<input checked="" type="checkbox"/>
	kgl01089		On		<input checked="" type="checkbox"/>
	lnh01089		On		<input checked="" type="checkbox"/>
	sdu01089		On		<input checked="" type="checkbox"/>
	lrt01089		On		<input checked="" type="checkbox"/>
	vtd01089		On		<input checked="" type="checkbox"/>

Source: ArcView Tiger Data.kgl01089

Buttons: Add, Style..., Delete, Scale..., OK, Cancel, Apply

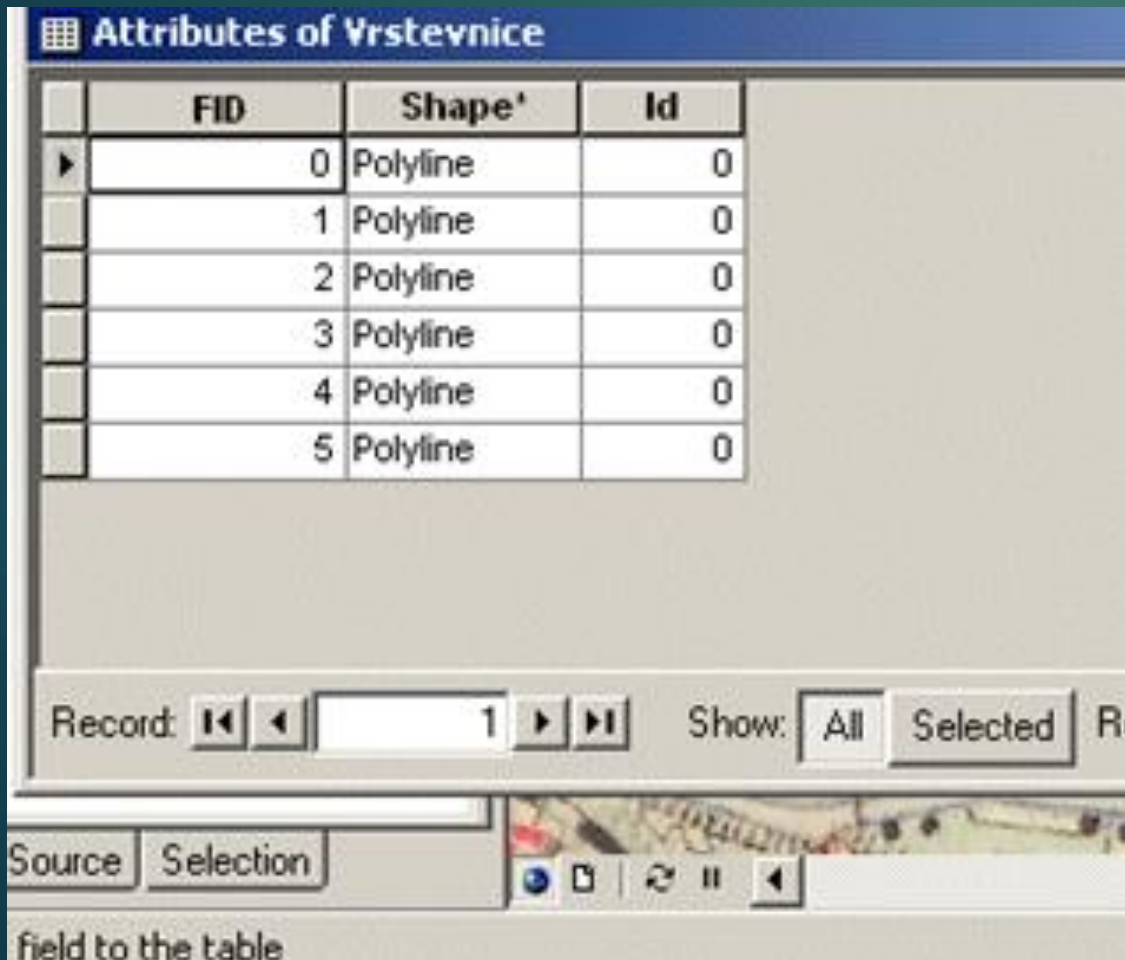
Priority controls:

The source warehouse and originating feature class name

# Maintenance and analysis of attribute data

## 2. Manipulation function of attribute data

### 2.2 Adding an Attribute



### Inserting an attribute column - Add Field

must be entered

1. attribute name - watch out for diacritics!

2. data type

3rd domain - not required

# Maintenance and analysis of **attribute** data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

## Editing function

– using the SQL language, which is part of the database itself

1. **Functions to calculate new attributes** – from existing attribute values
  - a. **mathematical operations** – arithmetic, trigonometric and exponential functions
  - b. **logical operations** – numeric and Boolean algebra operators (yes/no)
  - c. **statistical operations** – sum, maximum, minimum, average, ...

# Maintenance and analysis of attribute data

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### 2.3 Editing new attributes, linking tables

## Editing function

2. Function to link tables – ( join ) via one attribute common to both tables

**Join**

Left side of join: trt01089

Right side of join: CENSUS90

Available attributes:

KEY	MALE
RECORD_ID	PERSONS
STATE90	RENT_MEDIAN
SUMLEV	TRACKNAME
TRACT90	TRACT

Selected attribute pairs:

TRACT90/TRACT

Type of join:

Inner  Right outer  Left outer  Full outer

Output join as query:

Query name: Join of trt01089 and CENSUS90

Description:

Display join in map window

Map window name: Madison County

Style:

Display join in data window

Data window name: DataWindow1

OK Cancel

# Maintenance and analysis of **attribute** data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

## Connections (see database theory)

combines together a large number of tables

- ▶ **external** ( **outer join** )
  - ▶ left
  - ▶ just
  - ▶ fully
- ▶ **internal** ( **inner join** )
- ▶ **cross** ( **cross join** ) – *Cartesian operation*

# Maintenance and analysis of attribute data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

**Outer link left** – to **all records of the left table** records from the right table are searched - for A4, the value of B4 is not in relation Y , i.e. NULL

Session X (=class)

attribute_A	attribute_B
A1	B1
A2	B1
A3	B2
A4	B4

Session Y (Class)

attribute_B	attribute_C
B1	C22
B2	C23
B3	C24

attribute_A	attribute_B	attribute_C
A1	B1	C22
A2	B1	C22
A3	B2	C23
A4	B4	NULL

# Maintenance and analysis of attribute data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

**Outer connection right** – for all records of the right table, records from the left table are searched, for A4 the value of B4 is not in the Y session

Session X

attribute_A	attribute_B
A1	B1
A2	B1
A3	B2
A4	B4

Session Y

attribute_B	attribute_C
B1	C22
B2	C23
B3	C24

attribute_A	attribute_B	attribute_C
A1	B1	C22
A2	B1	C22
A3	B2	C23
NULL	B3	C24



# Maintenance and analysis of attribute data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

**Outer join full** – are used all records of both tables , NULL is inserted for the missing attribute

Session X

attribute_A	attribute_B
A1	B1
A2	B1
A3	B2
A4	B4

Session Y

attribute_B	attribute_C
B1	C22
B2	C23
B3	C24

attribute_A	attribute_B	attribute_C
A1	B1	C22
A2	B1	C22
A3	B2	C23
A4	B4	NULL
NULL	B3	C24



# Maintenance and analysis of attribute data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

**internal** ( inner join ) **connection** – records for common items are joined ( attribute\_B ), and only if there are entries in both tables, the other entries in the tables are not

Session X

attribute_A	attribute_B
A1	B1
A2	B1
A3	B2
A4	B4

Session Y

attribute_B	attribute_C
B1	C22
B2	C23
B3	C24

attribute_A	attribute_B	attribute_C
A1	B1	C22
A2	B1	C22
A3	B2	C23

# Maintenance and analysis of attribute data

## 2. Manipulation function of attribute data

### 2.3 Editing new attributes, linking tables

Cross connection ( cross join ) – is actually a Cartesian product

( m records x n records)

entries for **B3** and **B4** are **unused** because **there is no** :

attribute **A** for **B3** and attribute **C** for **B4**

a connection occurs via **a common attribute** and this attribute is no longer **transmitted**

Session XX      Session YY

attribute_A	attribute_B
A1	B1
A2	B1
A3	B2
A4	B4

attribute_B	attribute_C
B1	C22
B2	C23
B3	C24

attribute_A
A1
A2
A3

attribute_C
C22
C23

attribute_A	attribute_C
A1	C22
A1	C23
A2	C22
A2	C23
A3	C22
A3	C23

# Manipulation and analysis functions

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### 2.4 Thematic maps

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S jednotlivou atributovou hodnotou můžeme mapovat prvky jednotlivou barvou. Je to vhodné pro soubory dat s menším počtem hodnot.

Výběr barev je široký. Označení v legendě může ukázat buď hodnoty ve sloupcích nebo popis podle přání.

