Constructing a Solid Data Structure for an Archaeological Site

Brian Bontempo, Ph.D.

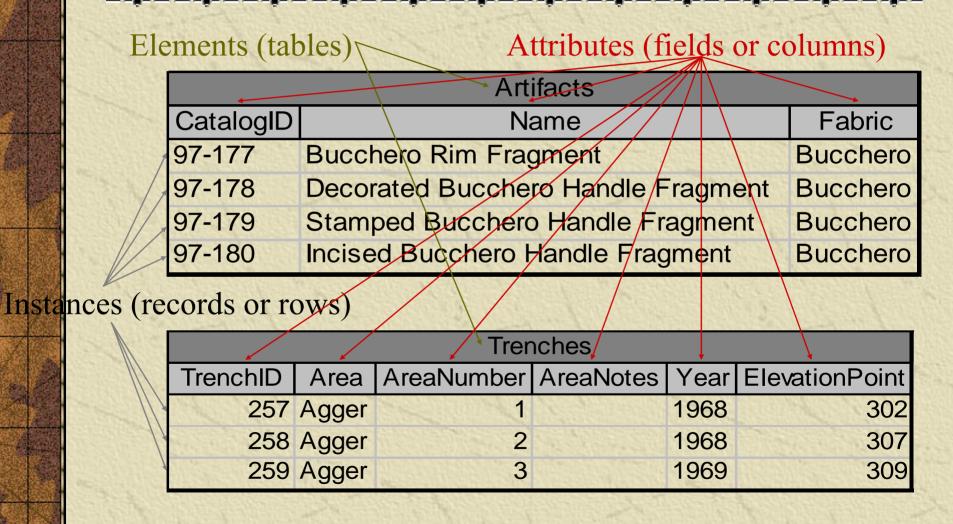
Topics

** Purposes of a Site Information System
** Relational Database Technology
** Building a Solid Data Structure
** A Tour of the Murlo Information System

Purposes of a Site Information System ***** Enter Information ***** Store Information ***** Manipulate Information •Query Sort Group ***** Analyze Information ***** Publish Information

Relational Database Technology * Minimizes redundant data ***** Minimizes empty data ***** Minimizes the space and processing required to manipulate data ***** Allows for accurate aggregation * Provides a link from a single datum point to a plethora of related information

Parts of a Data Structure



Steps to Building a Solid Data Structure

K Identifying the Elements Identifying the Tables ***** Defining the Instances of Each Element Defining the Records of the Tables **K** Identifying the Attributes of Each Element Identifying the Fields of Each Table **Relating the Elements** Building Table Relationships

Identification of Elements

***** Artifacts **Fragments *** Trenches 🗮 Loci 田 E

* Trench Books
* Excavators
* Conservators
* Catalogers
* Photographs

Definition of an Instance

- Databases can easily combine elements. They CANNOT break up elements into parts.
- Set up clear operational definitions.
- Document and disseminate the definitions.
- ***** Stick to these definitions.
- When errors occur, don't change the definition; fix the error.

Identifying Attributes (Fields)

* Artifacts (Dynamic)

- Description
 - Name
 - Dimensions
 - Condition
 - Fabric
 - Color (Munsell)
 - Description
- Publication ReferencesPhotos

* Fragments (Static)

- Context
 - Excavation Date
 - Trench
 - Coordinates
 - Depth
 - Locus
- Site Reference
 - Trench Book
 - Page
 - Find
- Description

Types of Data Relationships
* 1 to 1 (Might not be a relationship)
* 1 to Many
* Many to 1
* Many to Many (Yuk!)

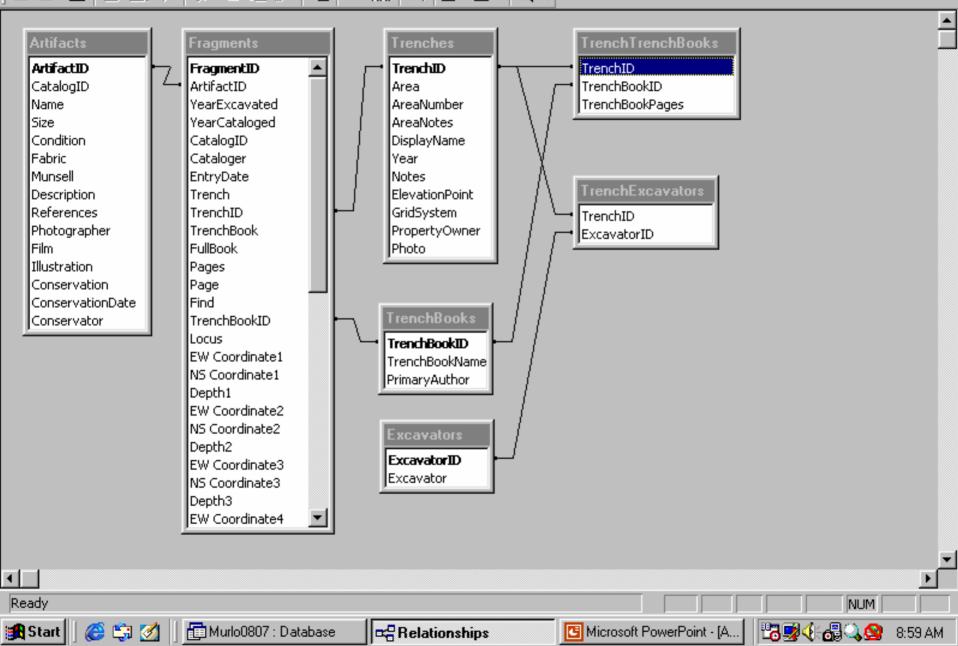
Relationships Between Elements # Artifacts(1) • Fragments(∞) Trench Books(1) • Fragments(∞) Trenches(1) • Fragments(∞) Trenches(1) • $Loci(\infty)$ \mathbb{X} Trenches(∞) –Trench Books(∞) \mathbf{X} Trenches(∞) –Excavators(∞)

Microsoft Access - [Relationships]



🖙 File Edit View Relationships Tools Window Help

🗅 😅 🖬 🧔 💖 🕺 🖻 💼 🚿 😘 📅 🛗 🗙 🕞 🛅 • 🔞 -



The Future of the Murlo **Information System *** Complete Data Entry of Finds Scan all Photos ***** Scan all Trench Books ***** Develop Graphical User Interfaces Develop 3D Site Plan ***** Develop Search Engine * Publish Catalog to the Web

