**Chapter 2 Modeling Data in the Organization**

**Chapter Overview**

The purpose of this chapter is to present a detailed description of the entity-relationship model and the use of this tool within the context of conceptual data modeling. This chapter presents the basic entity-relationship (or E-R) model. Advanced features of conceptual data modeling will follow in Chapter 3.

**Chapter Objectives**

1. Emphasize the importance of understanding organizational data, and convince your students that unless they can represent data unambiguously at the conceptual level, they cannot implement a database that will effectively serve the needs of various organizational stakeholder groups.

2. Present the E-R model as a conceptual data model that can be used to capture the structure and much, although not all, of the semantics (or meaning) of data.

3. Apply E-R modeling concepts to several practical examples including the Pine Valley Furniture Company case.

**Key Terms**

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| Associative entity | Entity-relationship model  (E-R model) | Relationship type |
| Attribute | Required attribute |
| Binary relationship | Entity type | Simple (or atomic) attribute |
| Business rule | Fact | Strong entity type |
| Cardinality constraint | Identifier | Term |
| Composite attribute | Identifying owner | Ternary relationship |
| Composite identifier | Identifying relationship | Time stamp |
| Degree | Maximum cardinality | Unary relationship |
| Derived attribute | Minimum cardinality | Weak entity type |
| Entity | Multivalued attribute |  |
| Entity instance | Optional attribute |  |
| Entity-relationship diagram  (E-R diagram) | Relationship instance |  |