

A.I.S. Class 14: Outline

- Identifying Attributes
- Learning Objectives for Chapter 3
- Chapter 3 Quiz
- Database Foundations
- Group Work for Chapter 3
- ACCESS Classes
- Mid-Term Examination Review

Identifying Attributes

■ Cash Account

- ★ Cash Account Number
- ★ Cash Account Name / Description
- ★ Bank Name
- ★ Bank Account Number
- ★ Balance ?

These items are each stored once per record

Identifying Attributes

■ Purchase Order

- ★ Purchase Order #
- ★ Purchase Order Date
- ★ Purchase Order Clerk
- ★ Requisition #
- ★ Vendor #
- ★ Target Delivery Date

These items are each stored once per record

- ★ {Raw Materials #, Quantity, Price}

These sets of three items are each stored multiple times per record

Identifying Attributes

■ Shipper

- ★ Shipper #
- ★ Shipper Name
- ★ Shipper Address Line 1
- ★ Shipper Address Line 2
- ★ Shipper City
- ★ Shipper State
- ★ Shipper Zip
- ★ Shipper Telephone Number
- ★ Shipper Contact Person Name

These items are each stored once per record

– note that there are two distinct address lines, each stored once

Identifying Attributes

■ Shipper

- * Shipper #
- * Shipper Name
- * {Shipper Address Line}
- * Shipper City
- * Shipper State
- * Shipper Zip
- * Shipper Telephone Number
- * Shipper Contact Person Name

These items are each stored once per record

– except that there may be an unknown number of address lines

Identifying Attributes

■ Shipper

- * Shipper #
- * Shipper Name
- * Shipper Address
- * Shipper City
- * Shipper State
- * Shipper Zip
- * Shipper Telephone Number
- * Shipper Contact Person Name

These items are each stored once per record

Learning Objectives for Chapter 3

■ Important topics covered include:

- ◆ Differences between double-entry bookkeeping and database accounting systems
- ◆ Advantages and disadvantages of database accounting systems
- ◆ Business activity classifications
- ◆ Transaction cycles
- ◆ The relationship between accounting systems and database systems
- ◆ A brief history leading to the development of database management systems (DBMS's)
- ◆ Functions of database management systems

Learning Objectives for Chapter 3

- ◆ Theory and application of relational database management systems (RDBMS's)
- ◆ The structure of database objects to capture accounting events
- ◆ The importance of normalizing tables
- ◆ Performing database selections, projections, and joins
- ◆ How accountants use the REA model when designing accounting databases

Chapter 3 Quiz

?

Accounting Databases in Transaction Cycles

■ Advantages of Database Accounting Systems

- ★ Reduce data storage costs
- ★ Eliminate data redundancy
- ★ Eliminate data inconsistencies
- ★ Avoid duplicate processing
- ★ Facilitate add, delete, and update maintenance tasks
- ★ Make data independent of applications
- ★ Centralize data management
- ★ Centralize data security

Accounting Databases in Transaction Cycles

■ Advantages of Database Accounting Systems

- ★ Make report modifications and updates easier
- ★ Provide *ad hoc* query capabilities
- ★ Facilitate cross-functional data analysis
- ★ Permit multiple users simultaneous data access

Accounting Databases in Transaction Cycles

■ Disadvantages of Database Accounting Systems

- ★ Greater hardware requirements
- ★ Database software itself
- ★ Employing a database administrator
- ★ System operation becomes critical
- ★ Incorrect data entry corrupts many users' work
- ★ Territorial disputes over data ownership

Accounting Databases in Transaction Cycles

■ Service Firms

- ★ Income and expenses

■ Merchandising Firms

- ★ Income, cost of goods sold, and expenses

■ Manufacturing Firms

- ★ Income, cost of goods sold, cost of goods manufactured, and expenses

Transaction Cycles

■ Revenue

★ Events

- ◆ Customer orders
- ◆ Sales
- ◆ Customer payments

Transaction Cycles

■ Revenue

★ Reports

- ◆ Sales orders
- ◆ Invoices
- ◆ Shipping documents
- ◆ Remittance advices
- ◆ Cash receipts summaries
- ◆ Sales analyses
- ◆ Balances owed by customers

Transaction Cycles

■ Revenue

★ Tables

- ◆ Cash receipt
- ◆ Customer
- ◆ Finished goods inventory
- ◆ Sales
- ◆ Sales order
- ◆ Salesperson

Transaction Cycles

■ Purchase

★ Events

- ◆ Purchase orders
- ◆ Receipt of goods ordered
- ◆ Payments to vendors

Transaction Cycles

■ Purchase

★ Reports

- ◆ Backorder reports
- ◆ Balances owed to vendors
- ◆ Checks
- ◆ Goods received summaries
- ◆ Purchase orders
- ◆ Purchase summaries
- ◆ Receiving reports

Transaction Cycles

■ Purchase

★ Tables

- ◆ Cash disbursement
- ◆ Purchase orders
- ◆ Raw materials inventory
- ◆ Raw materials inventory receipt
- ◆ Vendor

Transaction Cycles

■ Payroll

★ Events

- ◆ Employees earn pay
- ◆ Payment to employees
- ◆ Payment of payroll taxes, etc

Transaction Cycles

■ Payroll

★ Reports

- ◆ Checks
- ◆ Employee commission reports
- ◆ Employee earnings records
- ◆ Employee time reports
- ◆ Payroll registers

Transaction Cycles

■ Payroll

★ Tables

- ◆ Cash disbursement
- ◆ Employee
- ◆ Time worked

Transaction Cycles

■ Production

★ Events

- ◆ Materials inventory costs flow into production
- ◆ Labor costs flow into production
- ◆ Overhead costs flow into production
- ◆ Total production costs flow into finished goods inventory

Transaction Cycles

■ Production

★ Reports

- ◆ Bills of materials
- ◆ Job cost reports

Transaction Cycles

■ Production

★ Tables

- ◆ Finished goods inventory
- ◆ Job
- ◆ Raw materials inventory
- ◆ Time worked

Database Foundations

■ Functions of a DBMS

- ★ Efficient data maintenance
- ★ User-accessible catalog
 - ◆ the data dictionary is itself a database file accessible by the user
- ★ Concurrency control
 - ◆ proper lock-out of multiple users
- ★ Transaction support
 - ◆ an entire transaction is processed, or none of it is (in the event of a system failure)
- ★ Recovery services
- ★ Security and authorization services
- ★ Integrity facilities
 - ◆ conditions or restrictions on valid data in database

Database Foundations

■ Terminology

- ★ Relation, tuple, attribute
- ★ Table, row, column
- ★ File, record, field

Database Foundations

- Other main topics already covered
 - ★ Historical v. Modern information systems
 - ★ Advantages and disadvantages of DBMS
 - ★ RDBMS terminology
 - ★ Database Normalization
 - ★ Entity-Relationship Models

Database Foundations

■ SQL

★ *Select*

- ◆ Determines which rows are included in dynasets

★ *Project*

- ◆ Determines which columns are included in dynasets

★ *Join*

- ◆ Combines data from different tables

Database Foundations

- Equijoins (p. 144)
- Outer Joins (p. 144)
- Recursive relations (p. 150)

Group Work for Chapter 3

■ Discussion Questions 1, 2

ACCESS Classes

- The next three classes, on October 26, 31 & November 2, will all be held in Levin Lab 003
- From now on, there is no purpose in reading the ACCESS textbook by itself – it is vital you read at the computer, and follow the exercises with the keystrokes given
- If you have not done this, you will find the Lab classes a waste of your time, and may wish to consider how best to use your limited time . . .

Mid-Term Examination Review