

ACS-1803

Introduction to Information Systems

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Functional Area Systems – Accounting Information Systems

Lecture Outline 4, Part 2

Functional Area Information Systems

| Functional Area | Information System | Examples of Typical Systems |
|---------------------------|---|---|
| Accounting and Finance | Systems used for managing, controlling, and auditing the financial resources of the organization | <ul style="list-style-type: none"> ■ Inventory management ■ Accounts payable ■ Expense accounts ■ Cash management ■ Payroll processing |
| Human Resources | Systems used for managing, controlling, and auditing the human resources of the organization | <ul style="list-style-type: none"> ■ Recruiting and hiring ■ Education and training ■ Benefits management ■ Employee termination ■ Workforce planning |
| Marketing | Systems used for managing new product development, distribution, pricing, promotional effectiveness, and sales forecasting of the products and services offered by the organization | <ul style="list-style-type: none"> ■ Market research and analysis ■ New product development ■ Promotion and advertising ■ Pricing and sales analysis ■ Product location analysis |
| Production and Operations | Systems used for managing, controlling, and auditing the production and operations resources of the organization | <ul style="list-style-type: none"> ■ Inventory management ■ Cost and quality tracking ■ Materials and resource planning ■ Customer service tracking ■ Customer problem tracking ■ Job costing ■ Resource utilization |

Accounting Information Systems (AIS)

- Journalizing
- Posting to Ledgers
- Prepare Trial Balance
- Prepare Financial Statements

Functional Area Information Systems

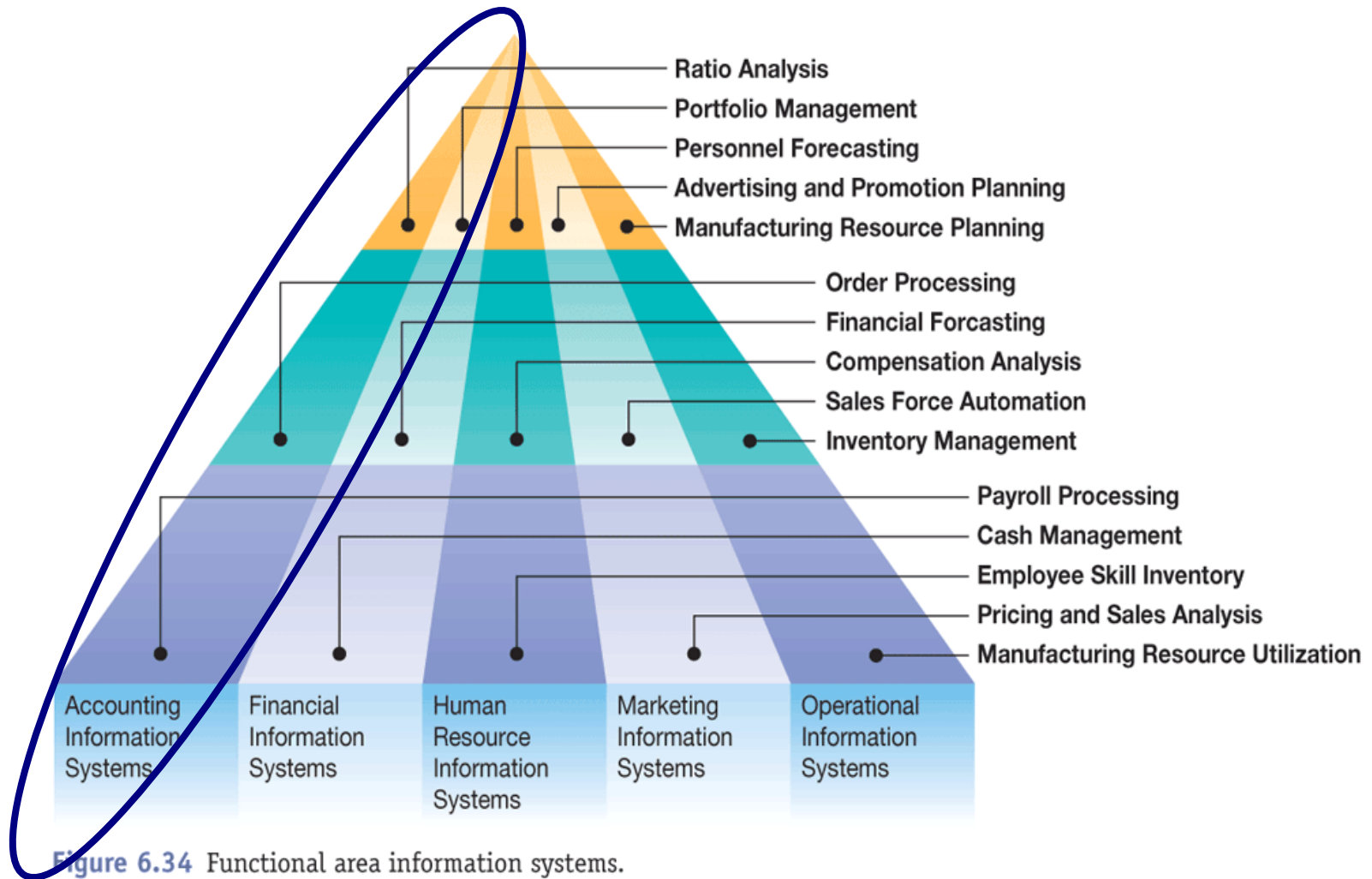


Figure 6.34 Functional area information systems.

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Functional Area Information Systems: Accounting

- ▶ **Accounting Information System (AIS)** integrates, monitors/ documents information from different aspects of the business operations that have to do with:
 - ▶ accountability for the assets/liabilities of the enterprise
 - ▶ the determination of the results of operations that ultimately leads to the computation of comprehensive income,
 - ▶ the financial reporting aspects of business operations.
- ▶ Evidence of financial transactions must be, in the end, contained in one main accounting system that is capable of producing (at least) two (2) main financial statements that are required for a business: (1) the balance sheet and (2) the income statement.



Types of Information

Types of information needed for decisions:

- ▶ Some is financial
- ▶ Some is nonfinancial
- ▶ Some comes from internal sources
- ▶ Some comes from external sources

An effective AIS needs to be able to integrate information of different types and from different sources.

The Three Basic Functions Performed by an AIS

1. To collect and store data about the organization's business activities and transactions efficiently and effectively.
2. To provide management with information useful for decision making.
3. To provide adequate internal controls



1. Collect and Store Data

To collect and store data about the organization's business activities and transactions efficiently and effectively:

- ▶ Capture transaction data on source documents.
- ▶ Record transaction data in journals, which present a chronological record of what occurred.
- ▶ Post data from journals to ledgers, which sort data by account type.



2. Provide Management Information

To provide management with information useful for decision making:

- ▶ In manual systems, this information is provided in the form of reports that fall into two main categories:
 - financial statements
 - managerial reports



3. Provide Adequate Internal Controls

To provide adequate internal controls:

- ▶ Ensure that the information produced by the system is reliable.
- ▶ Ensure that business activities are performed efficiently and in accordance with management's objectives.
- ▶ Safeguard organizational assets.

Basic Accounting Terminology

- Event
- Transaction
- Account
- Control Account
- Ledger
- Subsidiary Ledger
- Journal
- Posting
- Trial Balance
- Adjusting Entries
- Financial Statements
- Closing Entries

Debits and Credits

- An **Account** shows the effect of transactions on a given asset, liability, equity, revenue, or expense account.
- **Double-entry** accounting system (two-sided effect).
- Recording done by debiting at least one account and crediting another.
- **DEBITS must equal CREDITS.**

Debits and Credits

Account



- An arrangement that shows the effect of transactions on an account.
- Debit = “Left”
- Credit = “Right”

An Account can be illustrated in a T-Account form.



| Account Name | |
|--------------|--------------|
| Debit / Dr. | Credit / Cr. |
| | |
| | |
| | |

Debits and Credits

If Debit entries are **greater than** Credit entries, the account will have a debit balance.

| Account Name | | |
|----------------|-----------------|----------------|
| Debit / Dr. | Credit / Cr. | |
| Transaction #1 | \$10,000 | Transaction #2 |
| Transaction #3 | 8,000 | |
| Balance | \$15,000 | |

Debits and Credits

If Credit entries are **greater than** Debit entries, the account will have a credit balance.



| | Account Name | | |
|----------------|--------------|----------------|----------------|
| | Debit / Dr. | Credit / Cr. | |
| Transaction #1 | \$10,000 | \$3,000 | Transaction #2 |
| | | 8,000 | Transaction #3 |
| Balance | | \$1,000 | |

Debits and Credits



Normal
Balance
Debit

Normal
Balance
Credit

Liabilities



| Debit / Dr. | Credit / Cr. |
|---|---|
|  |  |
| | Normal Balance |

Assets

| Debit / Dr. | Credit / Cr. |
|---|---|
|  |  |
| Normal Balance | |



Chapter
3-23

Expense

| Debit / Dr. | Credit / Cr. |
|---|---|
|  |  |
| Normal Balance | |



Chapter
3-27

Equity

| Debit / Dr. | Credit / Cr. |
|---|---|
|  |  |
| | Normal Balance |

Chapter
3-25

Revenue

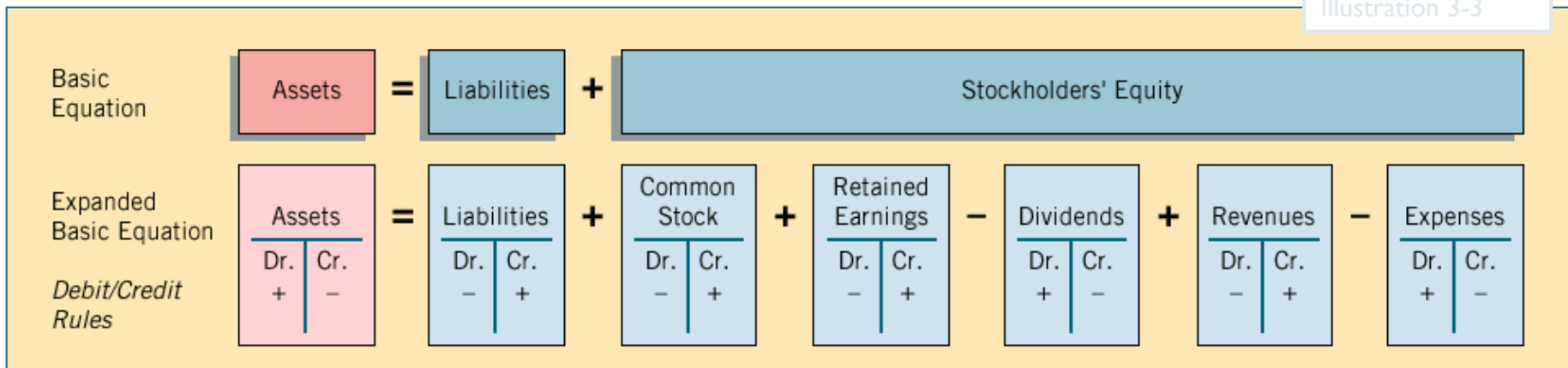
| Debit / Dr. | Credit / Cr. |
|---|---|
|  |  |
| | Normal Balance |

Chapter
3-26

Basic Accounting Equation

Relationship among the assets, liabilities and stockholders' equity of a business:

Illustration 3-3



The equation must be in balance after every transaction. For every **Debit** there must be a **Credit**.



Data Processing Cycle: Data Input

- ▶ Historically, most businesses used paper *source documents* to collect data and then transferred that data into a computer.
- ▶ Today, most data are recorded directly through data entry screens.



Record Transaction Data in Journals

- ▶ After transaction data have been captured on source documents, the next step is to record the data in a journal.
- ▶ A journal entry is made for each transaction showing the accounts and amounts to be debited and credited.
- ▶ The general journal records infrequent or nonroutine transactions.
- ▶ Specialized journals simplify the process of recording large numbers of repetitive transactions.



The AIS Processing Cycle

- ▶ The AIS processing cycle consists of four major steps:
 1. Journalizing
 2. Post Transactions to Ledgers
 3. Preparing a Trial Balance
 4. Preparing Financial Statements

1. Journalizing

General Journal – a chronological record of transactions.

Journal Entries are recorded in the General Journal.

General Journal

| Date | Account Title | Ref. | Debit | Credit |
|--------|---------------|------|---------|---------|
| Jan. 3 | Cash | 100 | 100,000 | |
| | Common stock | 300 | | 100,000 |
| | | | | |
| 10 | Building | 130 | 150,000 | |
| | Note payable | 220 | | 150,000 |
| | | | | |

2. Post Transactions to Ledgers

Posting – the process of transferring amounts from the journal to the General Ledger accounts.

| General Journal | | | | GJI |
|-----------------|---------------|------|---------|---------|
| Date | Account Title | Ref. | Debit | Credit |
| Jan. 3 | Cash | 100 | 100,000 | |
| | Common stock | | | 100,000 |
| | | | | |

| General Ledger | | | | | |
|----------------|---------------|------|---------------|--------|---------|
| Cash | | | Acct. No. 100 | | |
| Date | Explanation | Ref. | Debit | Credit | Balance |
| Jan. 3 | Sale of stock | GJI | 100,000 | | 100,000 |
| | | | | | |
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2. Post Transactions to Ledgers

► Ledger – example:

GENERAL LEDGER

ACCOUNT: Accounts Receivable

Account Number: 120

| Date | Description | Post Ref | Debit | Credit | Balance |
|----------|------------------|----------|----------|----------|-----------|
| 01/01/05 | | | | | 42,069.00 |
| 01/03/05 | Sales | S03 | 1,300.00 | | 43,369.00 |
| 01/13/05 | Cash collections | CR09 | | 4,600.00 | 38,769.00 |
| 01/23/05 | Sales | S04 | 5,600.00 | | 44,369.00 |

2. Post Transactions to Ledgers

▶ General Ledger

- ▶ The *general ledger* is the *summary level* information for all accounts. Detail information is not kept in this account.
- ▶ *Example:* Suppose XYZ Co. has three customers. Anthony Adams owes XYZ \$100. Bill Brown owes \$200. And Cory Campbell owes XYZ \$300. The balance in accounts receivable in the general ledger will be \$600, but you will not be able to tell how much individual customers owe by looking at that account. The detail isn't there.



2. Post Transactions to Ledgers

- ▶ **Subsidiary ledger**
- ▶ The subsidiary ledgers contain the detail accounts associated with the related general ledger account. The accounts receivable subsidiary ledger will contain three separate t-accounts— one for Anthony Adams, one for Bill Brown, and one for Cory Campbell.
- ▶ e.g.
 - accounts receivable
 - inventory
 - accounts payable

2. Post Transactions to Ledgers

Relationship between General and Subsidiary ledger

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER

Aaron Co.

| Date | Ref. | Debit | Credit | Balance |
|-----------------------|------|-------|--------|----------------|
| 2005 Jan. 10 19 | | 6,000 | 4,000 | 6,000 2,000 |

Branden Inc.

| Date | Ref. | Debit | Credit | Balance |
|-----------------------|------|-------|--------|--------------|
| 2005 Jan. 12 21 | | 3,000 | 3,000 | 3,000 —0— |

Caron Co.

| Date | Ref. | Debit | Credit | Balance |
|-----------------------|------|-------|--------|----------------|
| 2005 Jan. 20 29 | | 3,000 | 1,000 | 3,000 2,000 |

GENERAL LEDGER

Accounts Receivable

| Date | Ref. | Debit | Credit | Balance |
|-----------------------|------|--------|--------|-----------------|
| 2005 Jan. 31 31 | | 12,000 | 8,000 | 12,000 4,000 |

The subsidiary ledger is separate from the general ledger.

Accounts Receivable is a control account.

2. Post Transactions to Ledgers

- Ledgers are used to summarize the financial status, including the current balance, of individual accounts.
- The general ledger contains summary-level data for every asset, liability, equity, revenue, and expense account of an organization.
- A **subsidiary ledger** records all the detailed data for any general ledger account that has many individual subaccounts.
- What are some commonly used subsidiary ledgers?
 - **accounts receivable**
 - **inventory**
 - **accounts payable**
- What is the general ledger account corresponding to a subsidiary ledger called?
 - **control account**
- A control account contains the total amount for all individual accounts in the subsidiary ledger.

2. Post Transactions to Ledgers

| Accounts Receivable Subsidiary Ledger | | | | | Control Account | | | | |
|--|------|-------|--------|---------|-------------------------|------|-------|--------|---------|
| C. Daley AR1 | | | | | Accounts Receivable 110 | | | | |
| Date | Ref. | Debit | Credit | Balance | Date | Ref. | Debit | Credit | Balance |
| 20X1 | | | | | 20X1 | | | | |
| Mar. 18 | | 200 | | 200 | Mar. 31 | | 4,900 | | 4,900 |
| B. Johnson AR2 | | | | | | | | | |
| Date | Ref. | Debit | Credit | Balance | | | | | |
| 20X1 | | | | | | | | | |
| Mar. 22 | | 700 | | 700 | | | | | |
| L. Jones AR3 | | | | | | | | | |
| Date | Ref. | Debit | Credit | Balance | | | | | |
| 20X1 | | | | | | | | | |
| Mar. 15 | | 500 | | 500 | | | | | |
| P. O'Reilly AR4 | | | | | | | | | |
| Date | Ref. | Debit | Credit | Balance | | | | | |
| 20X1 | | | | | | | | | |
| Mar. 5 | | 1,500 | | 1,500 | | | | | |
| Mar. 29 | | 1,000 | | 2,500 | | | | | |
| T. Smith AR5 | | | | | | | | | |
| Date | Ref. | Debit | Credit | Balance | | | | | |
| 20X1 | | | | | | | | | |
| Mar. 1 | | 1,000 | | 1,000 | | | | | |
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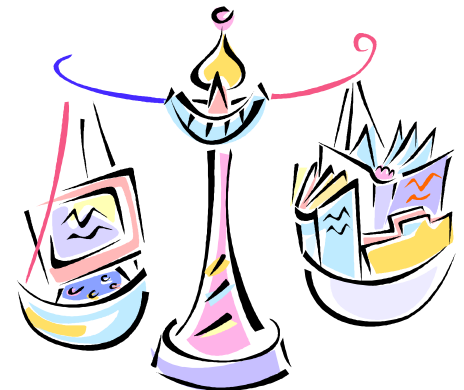
What is the Chart of Accounts?

| Financial Statement | Section | Asset or Liability | Account Code |
|---------------------|-----------------------|-------------------------------|--------------|
| Balance Sheet | Tangible Assets | Fixed Assets | 100 |
| | | Accumulated Depreciation | 110 |
| | Current Assets | Inventory | 200 |
| | | Accounts Receivable (control) | 250 |
| | | Bank | 300 |
| | | Cash | 350 |
| | Current Liabilities | Accounts Payable (control) | 400 |
| | | Payroll Taxes - Employees | 450 |
| | | Payroll Taxes - Employers | 500 |
| | | Sales Tax | 550 |
| | Long Term Liabilities | Bank Loan | 600 |
| | | Mortgage | 650 |
| | Financing | Owners Equity | 700 |
| | | Retained Earnings | 750 |

- ▶ The chart of accounts is a list of all general ledger accounts used by an organization.
- ▶ It is important that the chart of accounts contains sufficient detail to meet the information needs of the organization.

3. Preparing Trial Balance

- ▶ A list of the individual accounts with their balances taken from the ledger
- ▶ If the information is incorrectly journalized or posted, the trial balance will not be correct
- ▶ Computational errors
 - ▶ Transposition or slide errors
 - ▶ Posting errors



3. Trial Balance

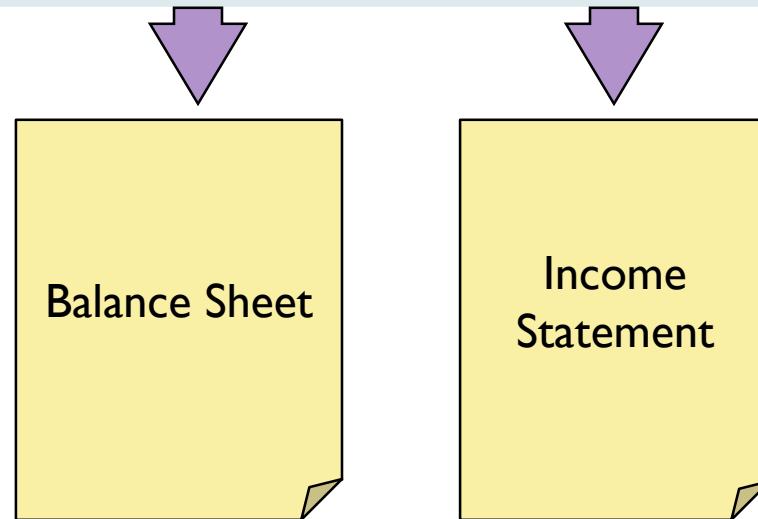
Trial Balance – a list of each account and its balance; used to prove equality of debit and credit balances.

| Acct. No. | Account | Debit | Credit |
|-----------|---------------------|-------------------|-------------------|
| 100 | Cash | \$ 140,000 | |
| 105 | Accounts receivable | 35,000 | |
| 110 | Inventory | 30,000 | |
| 130 | Building | 150,000 | |
| 200 | Accounts payable | | \$ 60,000 |
| 220 | Note payable | | 150,000 |
| 300 | Common stock | | 100,000 |
| 330 | Retained earnings | | |
| 400 | Sales | | 75,000 |
| 500 | Cost of goods sold | 30,000 | |
| | | <u>\$ 385,000</u> | <u>\$ 385,000</u> |

The Trial Balance lists the accounts in the same order as in the ledger.

4. Preparing Financial Statements

Financial Statements are prepared directly from the Adjusted Trial Balance.



The **Balance Sheet** is a report that shows what the company owns (Assets) and how it got the money for what it owns (Liabilities i.e. borrowing/owing) plus Stockholders' Equity (i.e. Investments, Retained Earnings) at a single moment in time. The **Income Statement** is a report that shows the company's revenues and expenses during a particular period in time.

4. Preparing Financial Statements

Assume the following Adjusted Trial Balance

Balance Sheet

| Adjusted Trial Balance | Debit | Credit |
|------------------------|-------------------|-------------------|
| Cash | \$ 140,000 | |
| Accounts receivable | 35,000 | |
| Building | 190,000 | |
| Note payable | | \$ 150,000 |
| Common stock | | 100,000 |
| Retained earnings | | 38,000 |
| Dividends declared | 10,000 | |
| Sales | | 185,000 |
| Interest income | | 17,000 |
| Cost of goods sold | 47,000 | |
| Salary expense | 25,000 | |
| Depreciation expense | 43,000 | |
| | <u>\$ 490,000</u> | <u>\$ 490,000</u> |

Balance Sheet

Assets

| | |
|---------------------|-------------------|
| Cash | \$ 140,000 |
| Accounts receivable | 35,000 |
| Building | 190,000 |
| Total assets | <u>\$ 365,000</u> |

Liabilities

| | |
|--------------|---------|
| Note payable | 150,000 |
|--------------|---------|

Stockholders' equity

| | |
|----------------------|-------------------|
| Common stock | 100,000 |
| Retained earnings | 115,000 |
| Total liab. & equity | <u>\$ 365,000</u> |

4. Preparing Financial Statements

Assume the following Adjusted Trial Balance

Income Statement

| Adjusted Trial Balance | Debit | Credit |
|------------------------|-------------------|-------------------|
| Cash | \$ 140,000 | |
| Accounts receivable | 35,000 | |
| Building | 190,000 | |
| Note payable | | \$ 150,000 |
| Common stock | | 100,000 |
| Retained earnings | | 38,000 |
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| | <u>\$ 490,000</u> | <u>\$ 490,000</u> |

Income Statement

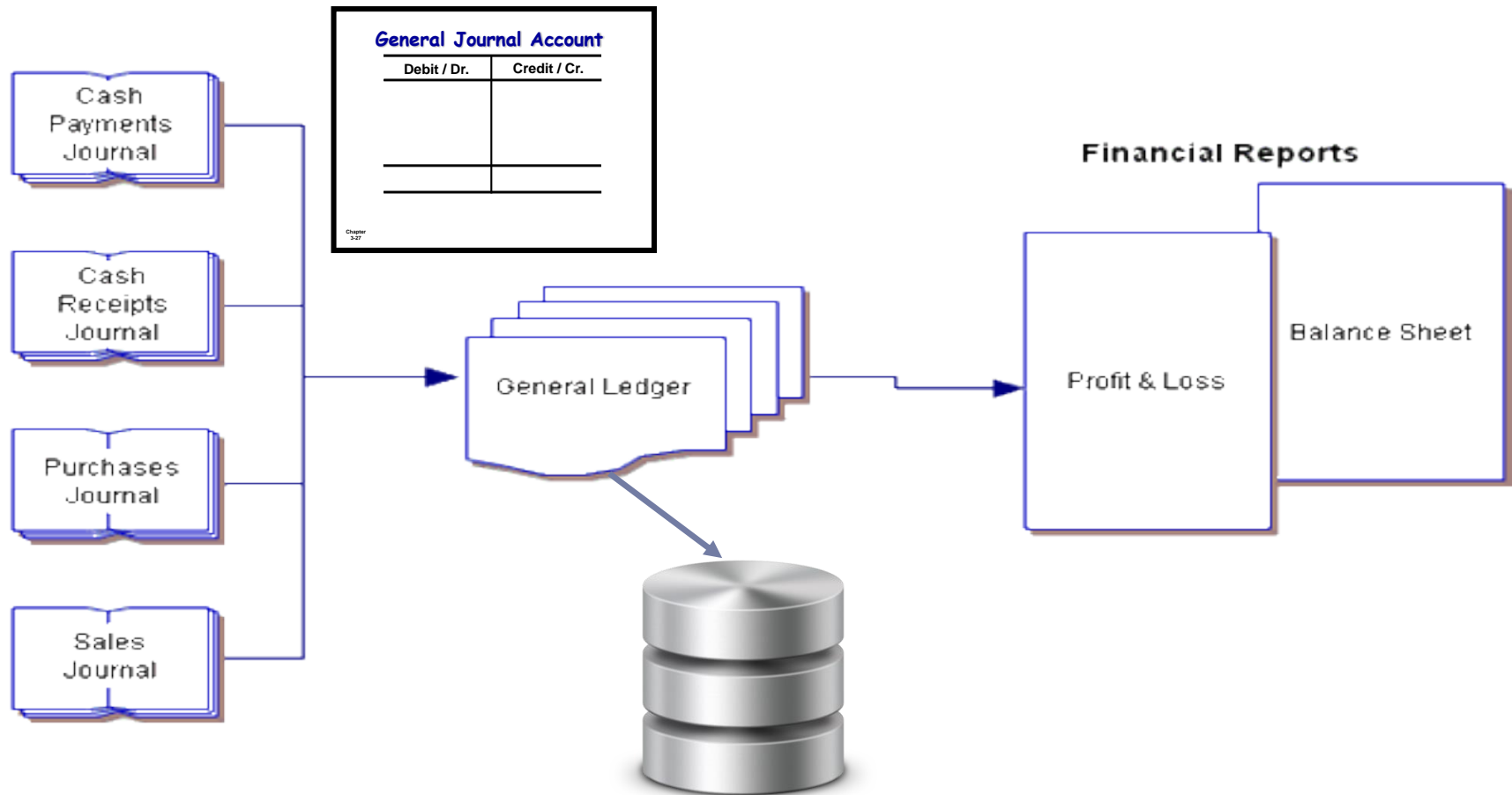
Revenues:

| | |
|-----------------|----------------|
| Sales | \$ 185,000 |
| Interest income | 17,000 |
| Total revenue | <u>202,000</u> |

Expenses:

| | |
|----------------------|------------------|
| Cost of goods sold | 47,000 |
| Salary expense | 25,000 |
| Depreciation expense | 43,000 |
| Total expenses | <u>115,000</u> |
| Net income | <u>\$ 87,000</u> |

Accounting Information System



The General Ledger is a component of Financial Accounting Software and exists in the form of an electronic database.



Accounting Information System

A computerized General Ledger may operate on its own, with no connections to any subsystems; it may be (installed) on its own, but connected to other subsystems such as Order Entry, Accounts Receivable, etc., which are also installed as separate modules; or,

We might have a G/L system which is internally integrated with the other closely related subsystems. In the last case, the entire, integrated system is installed at once.

Two very popular computerized accounting systems are **SAGE 50** (*formally Simply Accounting*) and **SAGE 300 ERP** (*formally ACCPAC*).



Accounting Information System

SAGE Simply Accounting

- Features Overview
- Intelligence Demo
- Dashboard

This is an integrated accounting package for small to medium businesses, usually with only one division. Because it is smaller, and relatively inexpensive, it is an integrated package with a General Ledger, Order Entry (basic), A/R, Invoicing, and also Purchasing, A/P, Inventory, and Payroll.

Accounting Information System

SAGE Aaccpac ERP

- SAGE Accpac 6.0 Overview
- SAGE Accpac End-to-End

—
This is usually for mid to larger sized businesses. The General Ledger System stands on its own. One can also purchase an Accounts Receivable System, and Accounts Payable System, and Inventory System etc.. One can connect them all, to create an integrated system.

Accounting Information System

There are two main preparatory steps in using accounting software after it is removed from the box (on a CD).

1. Installing the system: (a *computing* function). Copying the software to the computer's hard disk and getting it ready to run.
2. Initializing the system: (an *accounting* function). Entering specifics on the Company into the system so as to make it ready for day-to day use. This would involve: entering particulars on the Company (e.g. name address) and most importantly, identifying each account (card) by name and by code number for all the Company's assets, liabilities, equities, revenues, and expenses. The latter is called *establishing the Chart of Accounts*.



Accounting Information System

- The system balances have to be entered for each account (unless the business is starting ‘from scratch’ on the date of initialization).
- If the General Ledger is to be connected to other subsystems, the current status of receivables, payables, inventory, etc, will have to be entered into such systems.

Note: when a business says it has a “computerized accounting system”, it may be talking of only the computerized General Ledger or an integrated Accounting Information System (AIS), with the General Ledger at the centre (see conceptual model diagram).

Cross-Organizational Functional Accounting Information System (AIS)

