Accounting Information Systems
INFO 7225 | Spring 2022
Module 3 | Part a | Introduction & DFDs

Professor Shi
College of Engineering
Northeastern University

Week 11 (Sat., 4/9) to Week 14 (Sat., 4/30)	4	**Module 3: Accounting Information Systems (AISs)** 1. AISs and the Accountant 2. Accounting on the Internet 3. Information Technology and AISs 4. Accounting and Data Analytics; 5. Integrated Accounting and Enterprise Software 6. Internal Control Systems and Risk Management 7. Computer Controls for Organizations and AISs 8. Documenting Accounting Information Systems 9. Developing and Implementing Effective AISs	**Textbook 3**: Topics 1-7: Chapters 1 – 7 Topics 8 & 9: Chapters 12 & 13	1. Homework assignment 3 2. **Quiz 3** (covering chapters 1 to 7 3. **Quiz 4** (covering chapters 12 and 13)

a. Introduction | Document flow diagram
b. Document flowcharts & system flowcharts
c. Process diagrams/maps
d. Decision tables & decision trees

- ✓ Read the chapters specified in the reading assignment;
- ✓ You will be tested on the important concepts and key terms from the reading assignment in Quiz 3 and Quiz 4.
- ✓ Class sessions: mainly for examples, problem solving, and case studies

Chapter 1
Accounting Information Systems and the Accountant

After studying this chapter, you will be able to:

1. *Describe* the significant impact of information technology (IT) on the accounting profession and *explain* why you need to study accounting information systems.
2. *Identify* career opportunities that combine accounting and IT knowledge and skills.
3. *Explain* how IT influences accounting systems.
4. *Give examples of* how financial reporting is changing with advances in IT.
5. *Give examples of* how accountants use business intelligence for decision-making.
6. *Identify* what is new in the area of accounting information systems.
7. *Distinguish* between terms such as “systems,” “information systems,” “information technology,” and “accounting information systems.”

KEY TERMS YOU SHOULD KNOW

accounting information systems (AISs)

activity-based costing (ABC) systems

audit trail

balanced scorecard

big data

business intelligence

Certified Fraud Examiner (CFE)

Certified Information Systems Auditors (CISAs)

Certified Information Technology Professional (CITP)

cloud computing

Corporate Responsibility Reporting

Be able to pick the right answer from a multiple-choice–format question.

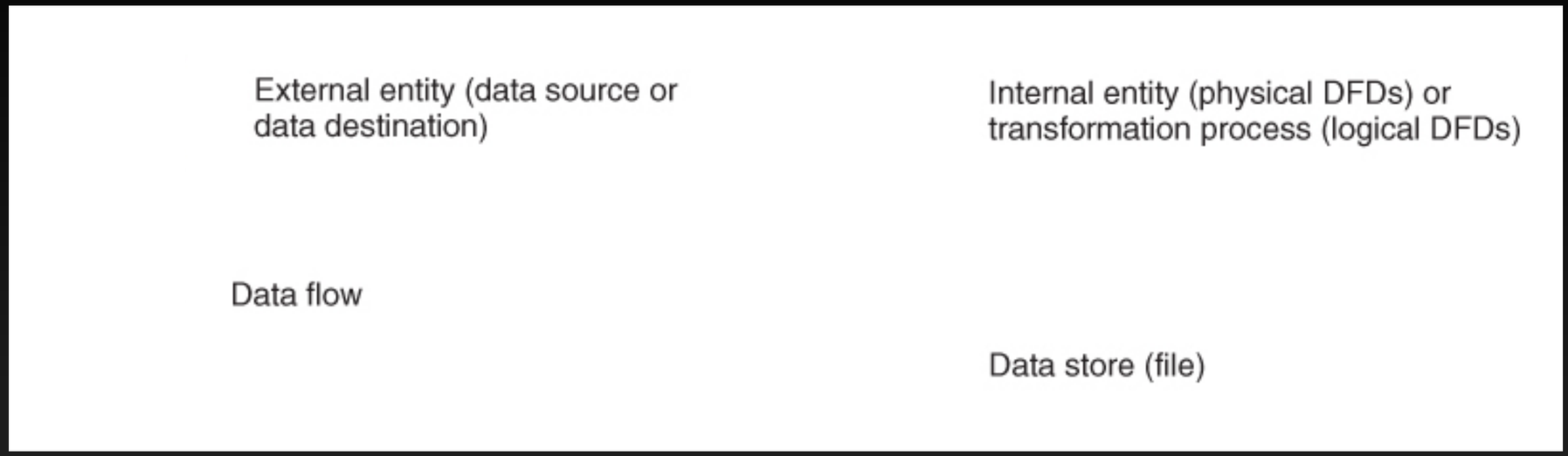
Chapter 12
Documenting Accounting Information Systems

After studying this chapter, you will be able to:

1. *Explain* why documenting an accounting information system (AIS) is important.
2. *Draw* simple data flow diagrams and document flowcharts, and explain how they describe the flow of data in AISs.
3. *Draw* simple system flowcharts and process maps, and interpret these diagrams.
4. *Explain* how program flowcharts, decision tables, and decision trees help document AISs.
5. *List* software available for documenting AISs and helping companies comply with the Sarbanes–Oxley Act and Auditing Standard 2201.
6. *Explain* the importance of end-user documentation.

Four Primary Documentation Tools

FIGURE 12-2. Symbols for data flow diagrams (DFDs)



- ✓ The term "external entity" means an entity outside _____ _____, not necessary an entity that external to _____.
- ✓ Data flow lines are lines with arrows that indicate the _____ that data flow in the system.
  - ➡ For this reason, every data source symbol will have one or more data flow lines leading _____ from it, and every data destination symbol will have one or more data flow lines leading _____ it.
  - ➡ For clarity, you should label each data flow line to indicate exactly _____ are flowing along it.
- ✓ A circle or "bubble" in a DFD indicates a system entity or process that _____. (Some authors prefer to use squares with rounded corners for this symbol.)
  - ➡ In **physical DFDs**, the label inside a bubble typically contains the title of the person performing a task - for example, "cashier".
  - ➡ In **logical DFDs**, the label inside the bubble describes a _____ - for example, "process cash receipts".

FIGURE 12-2. Symbols for data flow diagrams

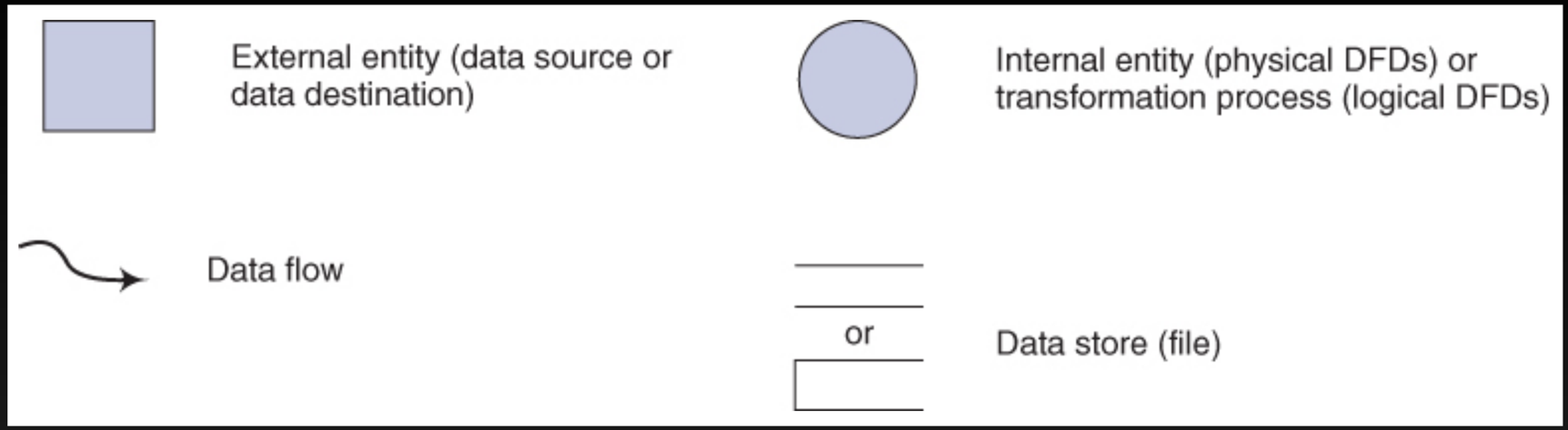
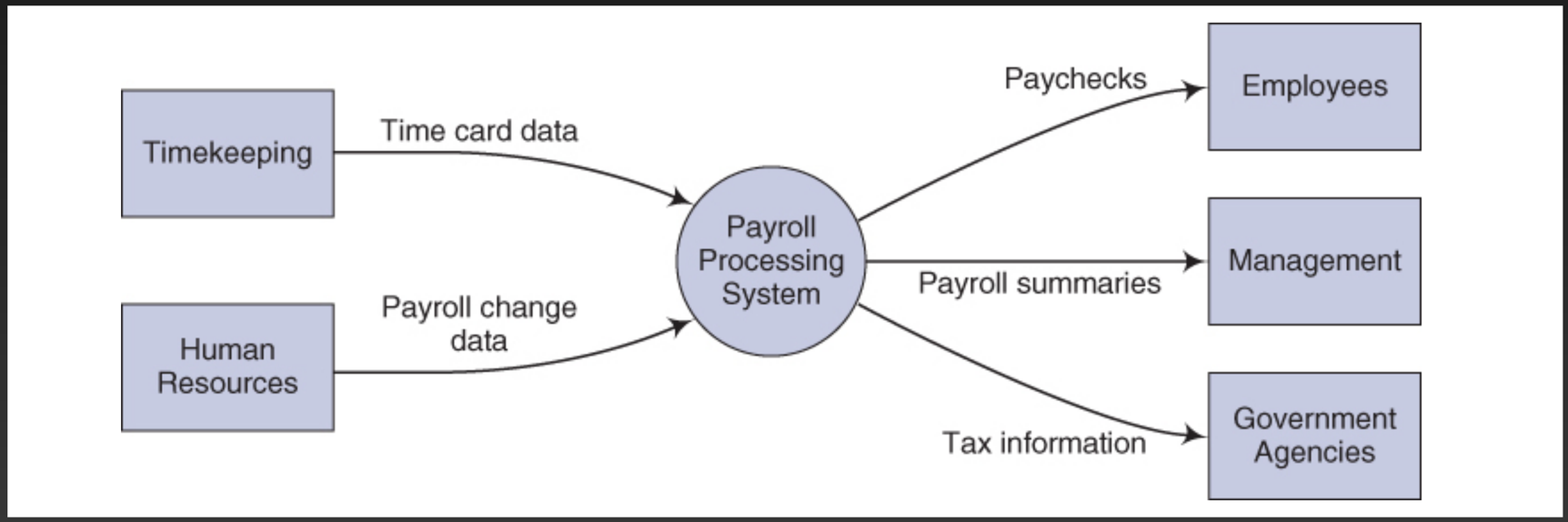
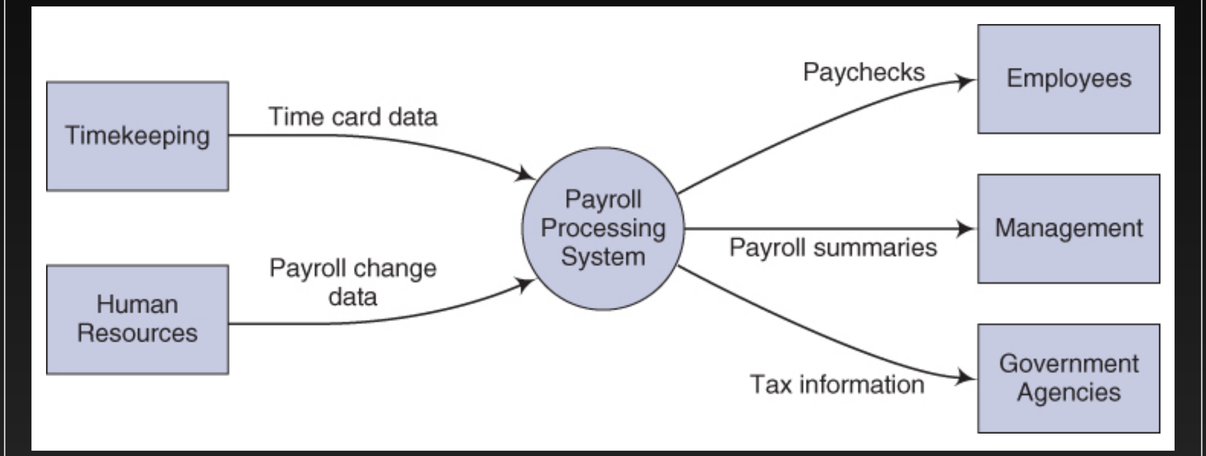


FIGURE 12-3. A context diagram for a payroll processing system



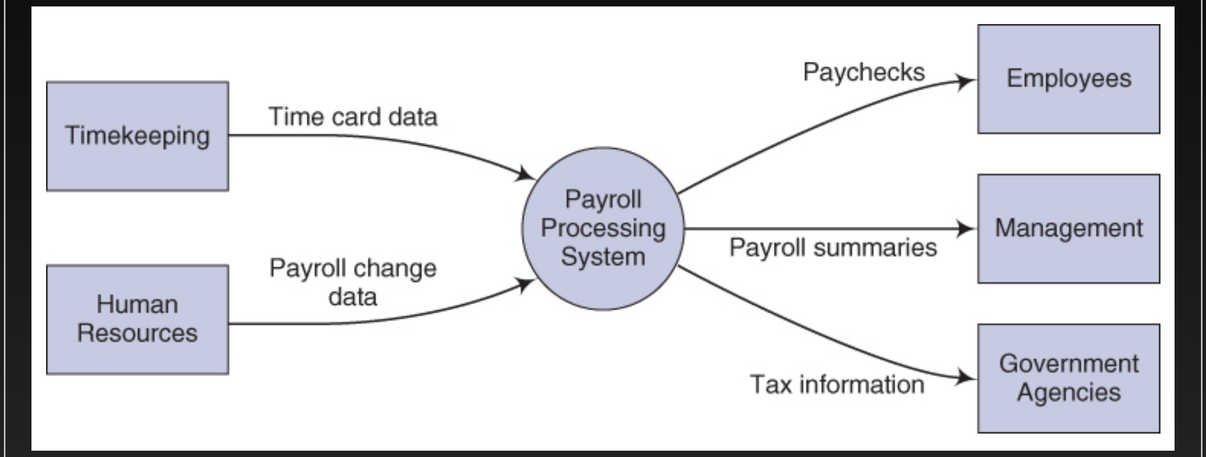
A high-level DFD providing an overview of a system

FIGURE 12-3
A context diagram for a payroll processing system



A high-level DFD providing an overview of a system: shows very little detail

FIGURE 12-3
A context diagram for a payroll processing system



A high-level DFD providing an overview of a system: shows very little detail

FIGURE 12-4
A physical data flow diagram

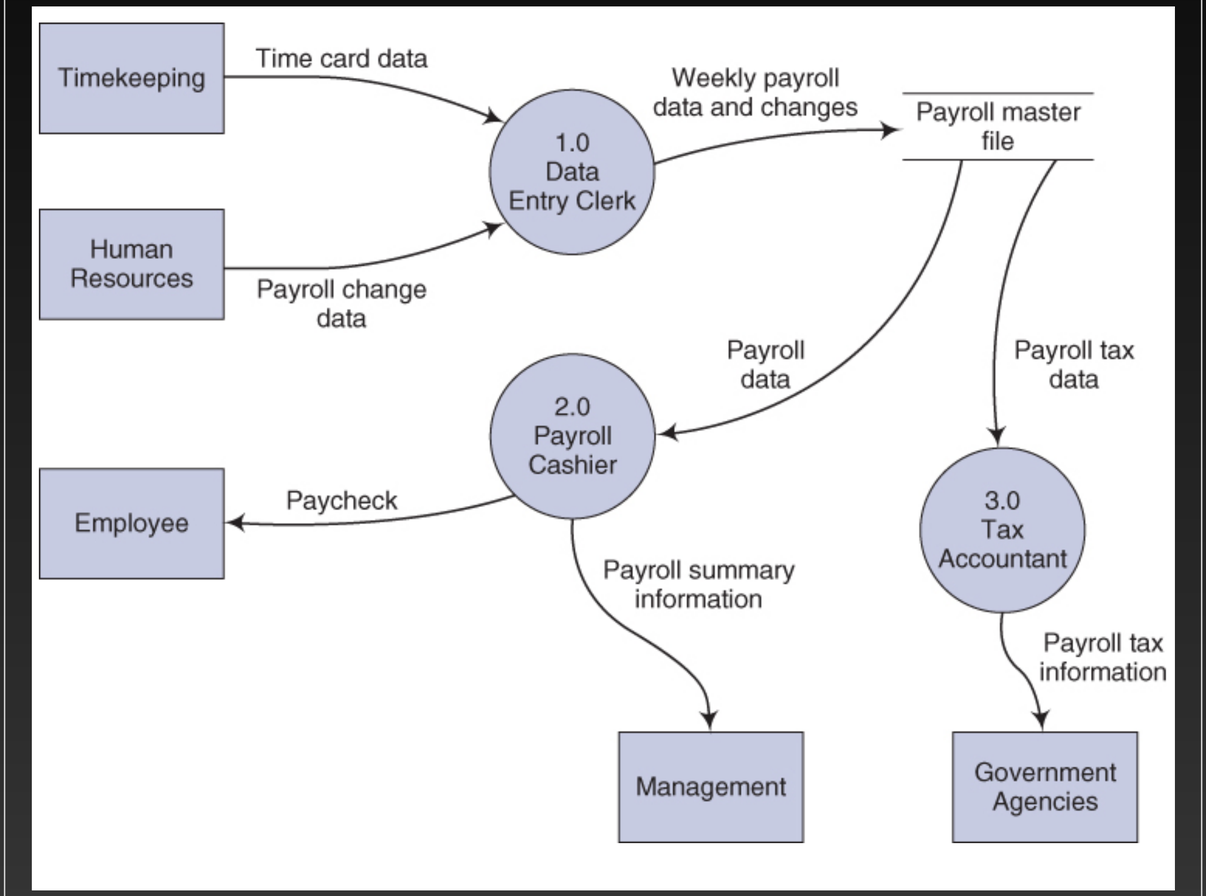


FIGURE 12-5
A logical data flow diagram for a payroll processing system

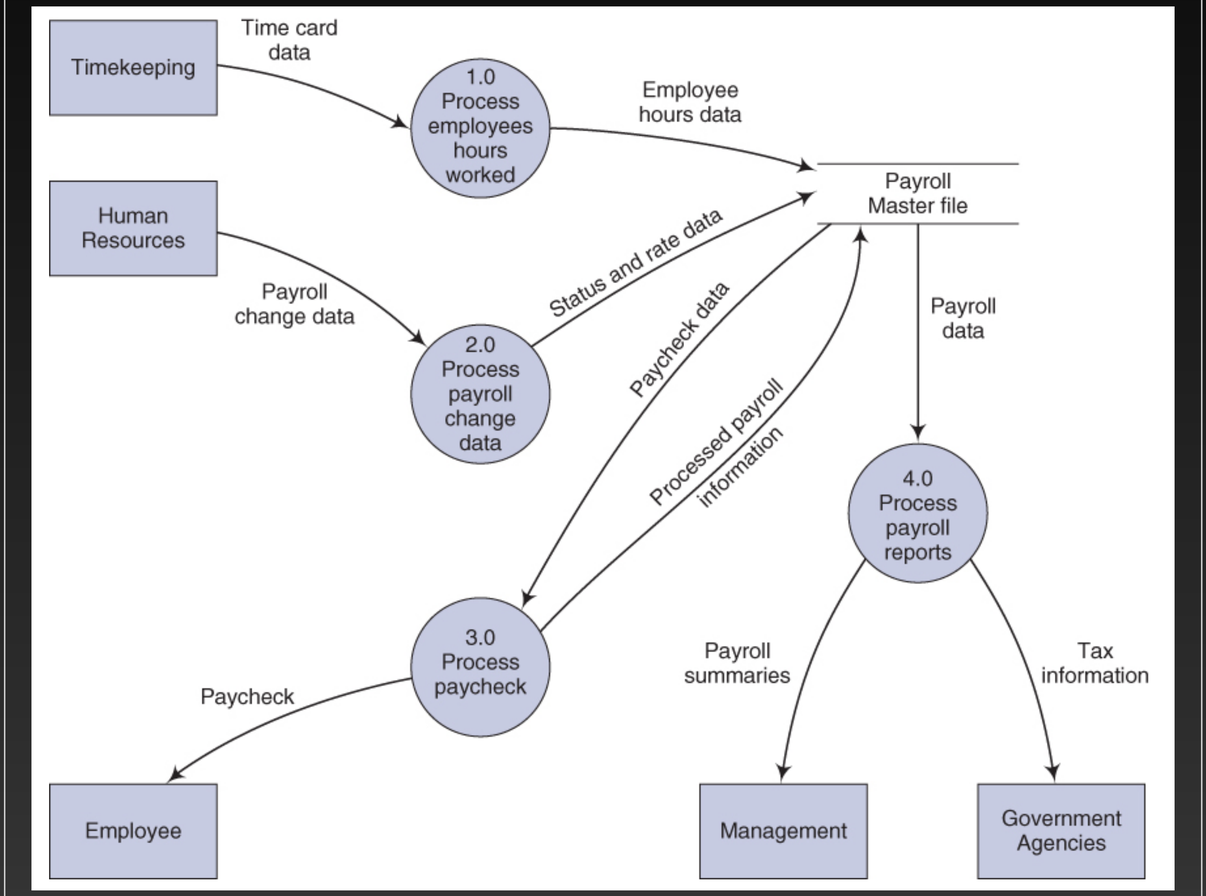
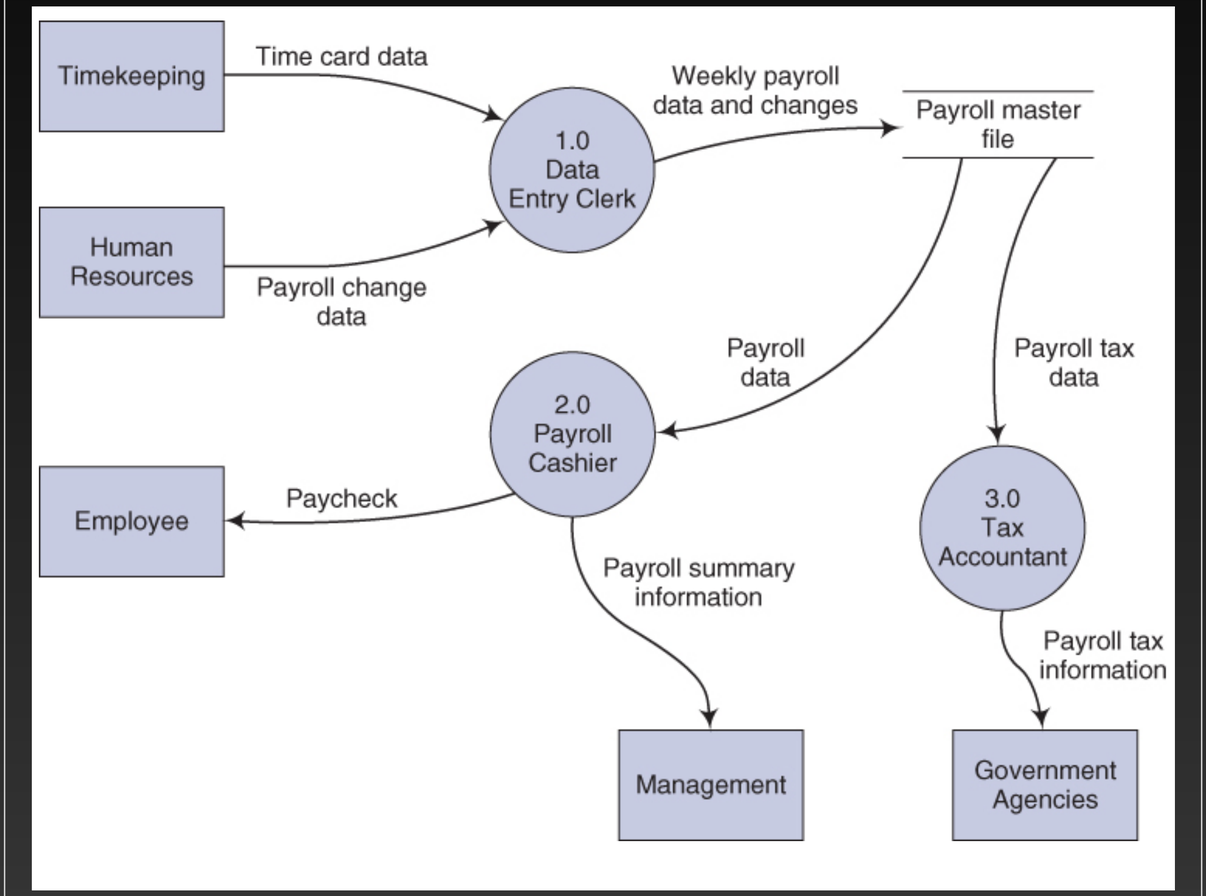
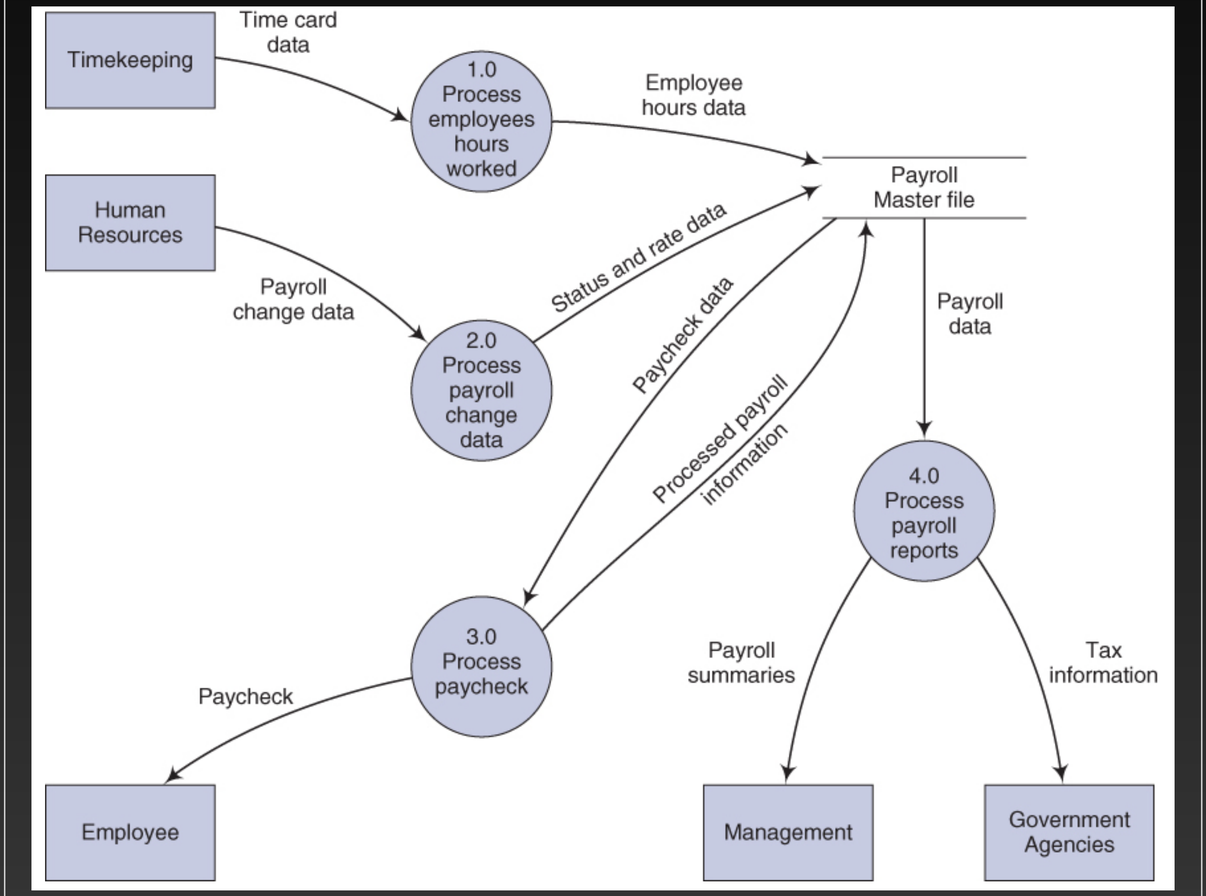


FIGURE 12-4
A physical data flow diagram



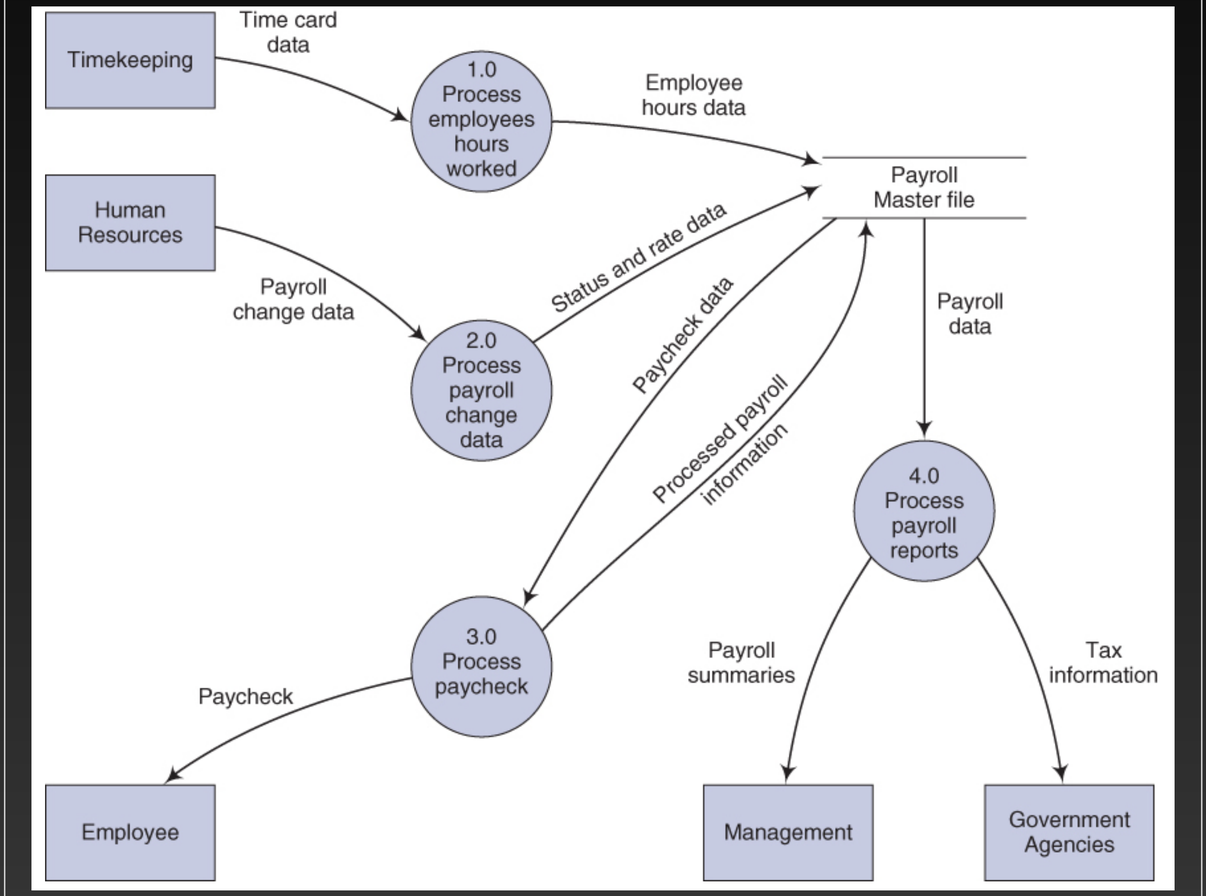
A level 0 data flow diagram:
shows only in broad terms what tasks a system performs.

FIGURE 12-5
A logical data flow diagram for a payroll processing system



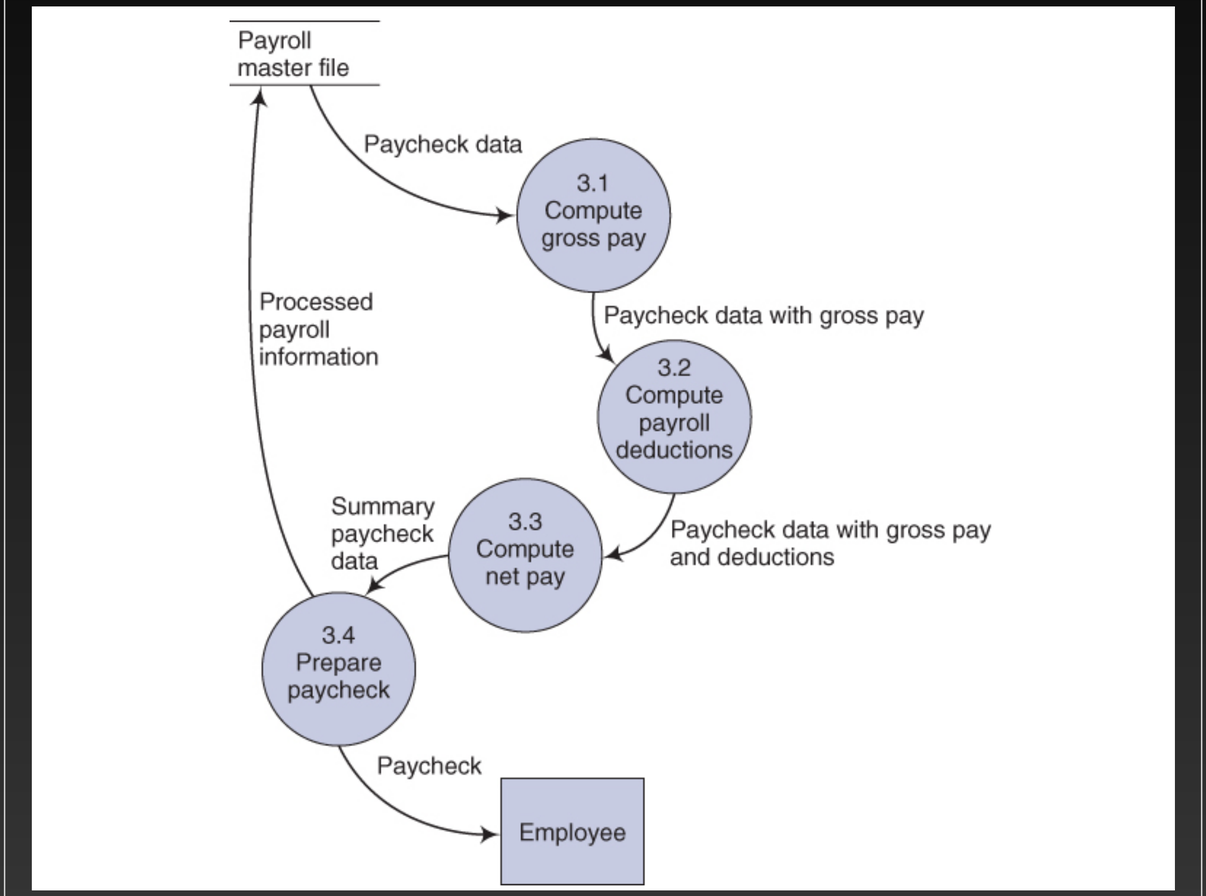
A level 0 data flow diagram:
shows only in broad terms what tasks a system performs.

FIGURE 12-5
A logical data flow diagram for a payroll processing system



A level 1 data flow diagram:
an "explosion" of symbol ___ (in Figure 12-5)

FIGURE 12-6
An exploded view of the "process paycheck" bubble of Figure 12-5



Guidelines for Drawing Data Flow Diagrams.

Creating DFDs is as much art as science. The following guidelines can help you avoid errors and make your diagrams easier to interpret:

1. Avoid detail in high-level DFDs (i.e., in levels 0 and 1). Where appropriate, combine activities that are performed at the same place or same time or that are logically related. In short, use the keep-it-simple (KIS) approach to enhance understanding.
2. As a general rule, each logical DFD should contain between five and seven processing bubbles. This guideline helps you simplify the diagrams and avoid showing too much detail in high-level DFDs. A context diagram should fit on one page.
3. Do not cross lines and do use a unique reference number and name for each process symbol.
4. Different data flows should have different names to avoid confusion about the data produced and used by different processes.
5. Unless they are outside the system or used for archiving, all data stores should have data flow lines both into and out of them. Thus, an internal file symbol that lacks both of these data flow lines is usually a diagramming error.
6. Even if a file is temporary, it is usually desirable to include it in a DFD.
7. Classify most of the final recipients of system information as external entities.
8. Classify all personnel or departments that process the data of the current system as internal entities.
9. Display only normal processing routines in high-level DFDs. Avoid showing error routines or similar exception tasks.
10. Where several system entities perform the same task, show only one to represent them all. This rule also applies when system personnel perform the same task at different locations of the organization—for example, at different plants.
11. Obtain user feedback, where possible, to verify the accuracy and completeness of your diagrams.

12-16. Amanda M is a regional manufacturer and wholesaler of high-quality chocolate candies. The company's sales and collection process is as follows. Amanda M makes use of an enterprise-wide information system with electronic data interchange (EDI) capability. No paper documents are exchanged in the sales and collection process. The company receives sales orders from customers electronically. Upon receipt of a sales order, shipping department personnel prepare goods for shipment and input shipping data into the information system. The system sends an electronic shipping notice and invoice to the customer at the time of shipment. Terms are net 30. When payment is due, the customer makes an electronic funds transfer for the amount owed. The customer's information system sends remittance (payment) data to Amanda M. Amanda M's information system updates accounts-receivable information at that time. **Draw a context diagram** and a level 0 logical data flow diagram **for Amanda M's sales and collection process**.

"Net 30" is a credit term used in business to signify that the full amount a client owes is payable within 30 calendar days (not business days) after they have been billed.

12-16. Amanda M is a regional manufacturer and wholesaler of high-quality chocolate candies. The company's sales and collection process is as follows. Amanda M makes use of an enterprise-wide information system with electronic data interchange (EDI) capability. No paper documents are exchanged in the sales and collection process. The company receives sales orders from customers electronically. Upon receipt of a sales order, shipping department personnel prepare goods for shipment and input shipping data into the information system. The system sends an electronic shipping notice and invoice to the customer at the time of shipment. Terms are net 30. When payment is due, the customer makes an electronic funds transfer for the amount owed. The customer's information system sends remittance (payment) data to Amanda M. Amanda M's information system updates accounts-receivable information at that time.

Draw a context diagram and **a level 0 logical data flow diagram** for Amanda M's sales and collection process.

12-16. …The company receives sales orders from customers electronically. Upon receipt of a sales order, shipping department personnel prepare goods for shipment and input shipping data into the information system. The system sends an electronic shipping notice and invoice to the customer at the time of shipment. Terms are net 30. When payment is due, the customer makes an electronic funds transfer for the amount owed. The customer's information system sends remittance (payment) data to Amanda M. Amanda M's information system updates accounts-receivable information at that time.

Draw a level 0 logical data flow diagram for Amanda M's sales and collection process.

12-18. The LeVitre and Swezey Credit Union maintains separate bank accounts for each of its 20,000 customers. Three major files are the customer master file, the transaction file of deposits and withdrawal information, and a monthly statement file that shows a customer's transaction history for the previous month. The following lists the bank's most important activities during a representative month:

a. Customers make deposits and withdrawals.
b. Employers make automatic deposits on behalf of selected employees.
c. The bank updates its master file daily using the transaction file.
d. The bank creates monthly statements for its customers, using both the customer master file and the transactions file.
e. Bank personnel answer customer questions concerning their deposits, withdrawals, or account balances.
f. The bank issues checks to pay its rent, utility bills, payroll, and phone bills.

Draw a data flow diagram that graphically describes these activities.

Thank you!
Questions?