Accounting Information Systems

INFO 7225 | Spring 2022

System Flowcharts

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Four Common Documentation Methods

1. Data flow diagrams (DFDs)
2. Document flowcharts
3. System flowcharts, and
4. Process diagrams/maps

1. System designers primarily use data flow diagrams (DFDs) in the systems development process – for example, as a tool for analyzing an existing system or as a planning aid for creating a new system.
2. A document flowchart traces the physical flow of documents through an organization – that is, the flow of documents from the departments, groups, or individuals who first created them to their final destinations.
   - ✓ Document flowcharts provide more details about documents than do DFDs.

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1. System designers primarily use data flow diagrams (DFDs) in the systems development process.
2. A document flowchart traces the physical flow of documents through an organization.
3. Whereas document flowcharts focus on tangible documents, **system flowcharts** concentrate on the computerized data flows of AISs.
   - ✓ Thus, a system flowchart typically depicts the electronic flow of data and processing steps in an AISs.
   - ✓ Program flowcharts: describe the processing logic of each application program; use many of the same symbols as system flowcharts.

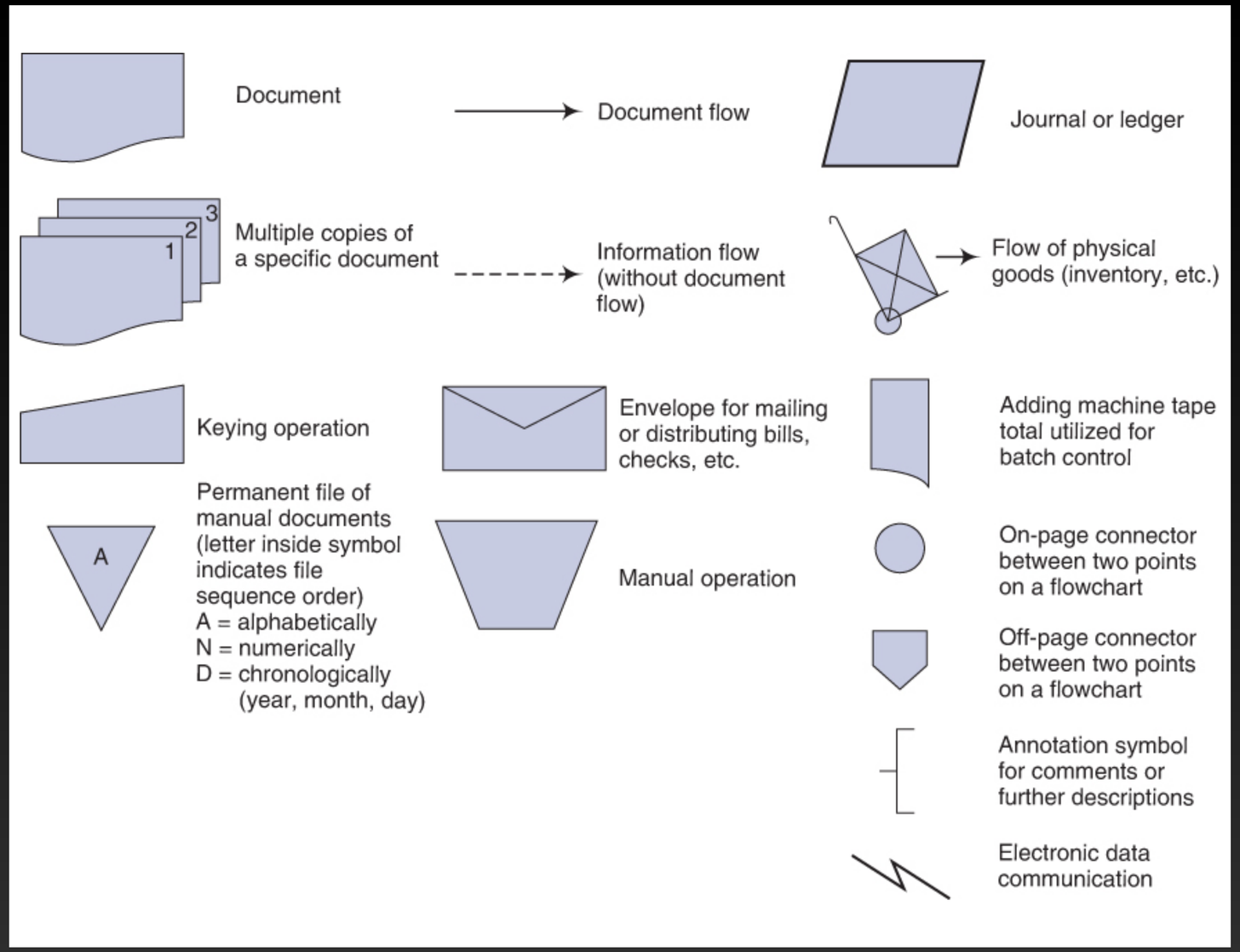


FIGURE 12-7. Common document flowcharting symbols

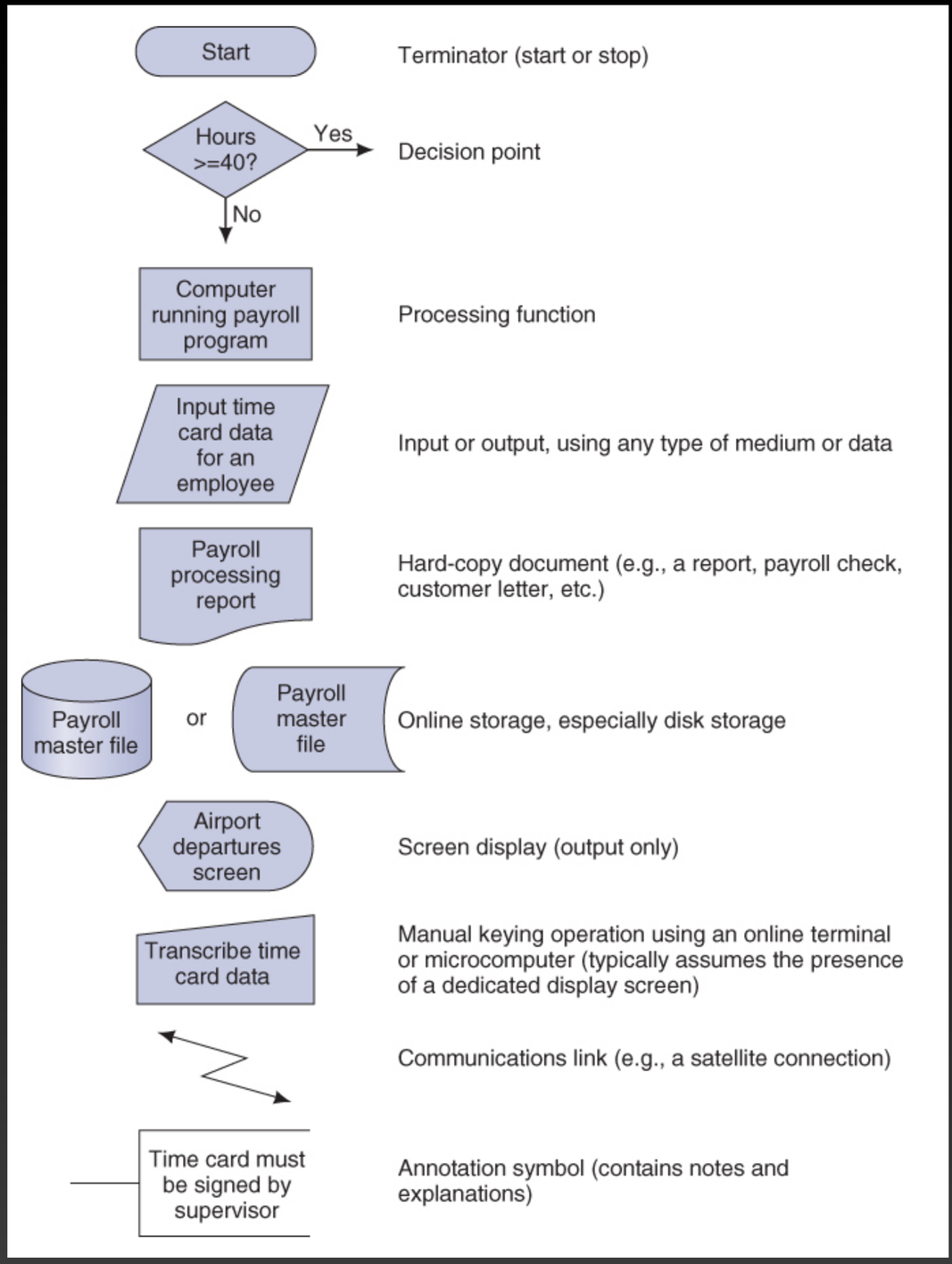
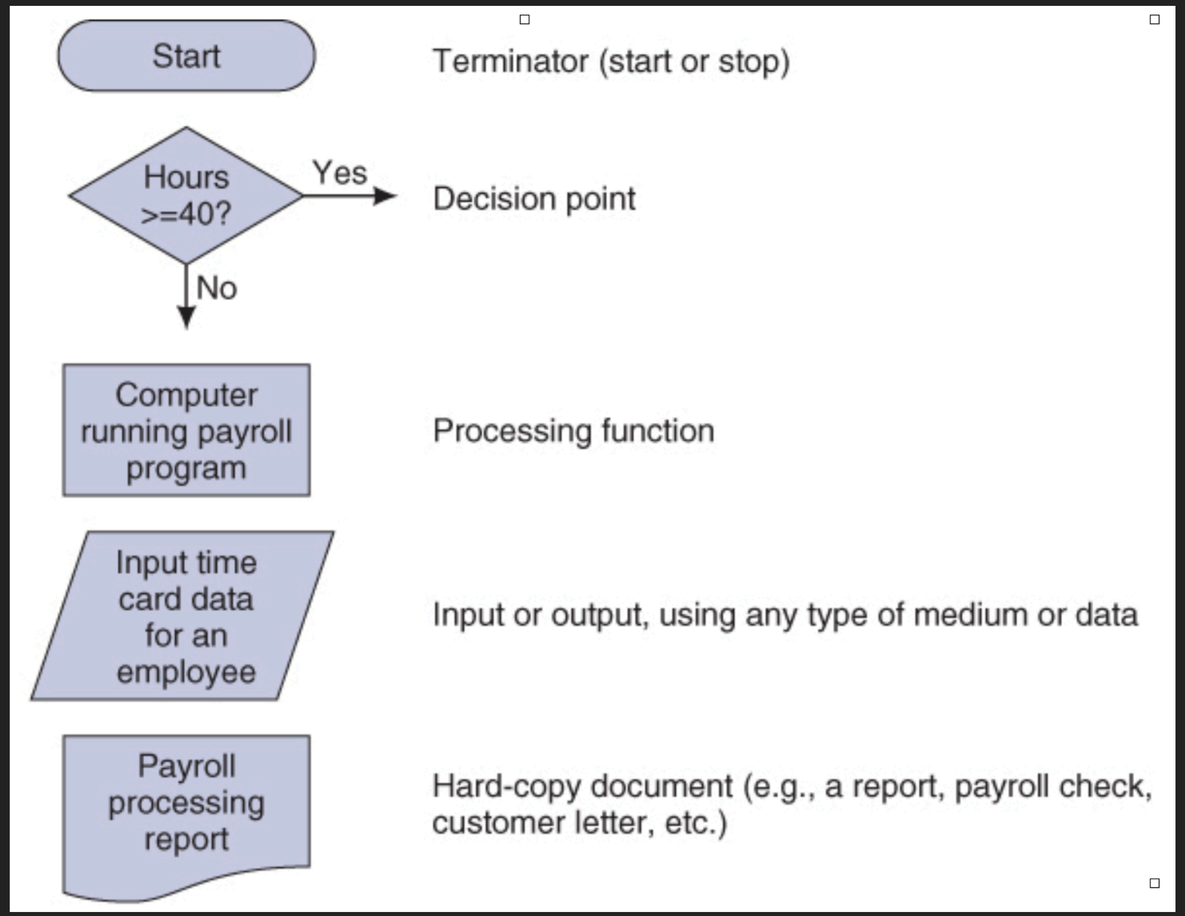
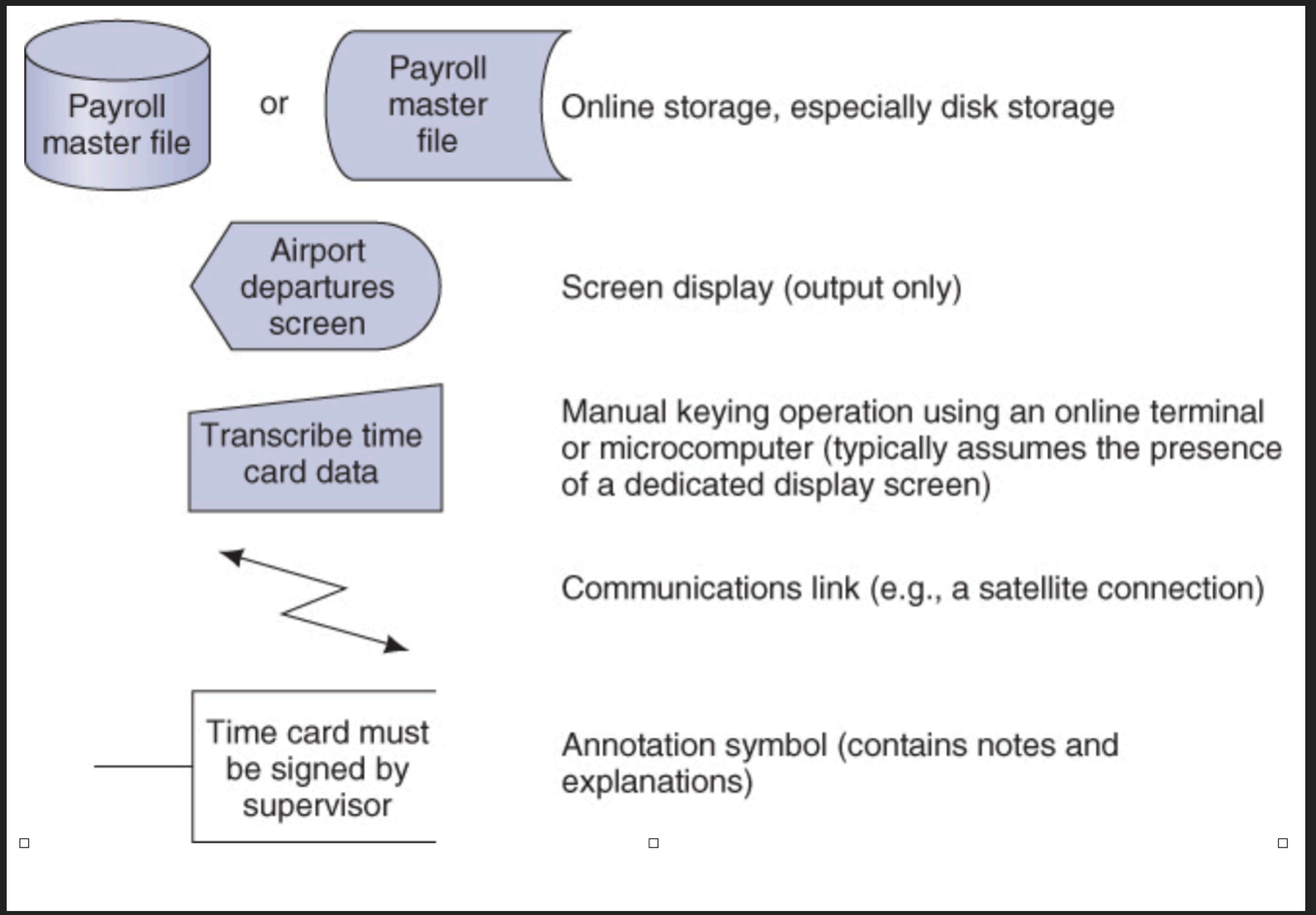


FIGURE 12-10
Some common system and programming flowcharting symbols

FIGURE 12-10 Some common system and programming flowcharting symbols

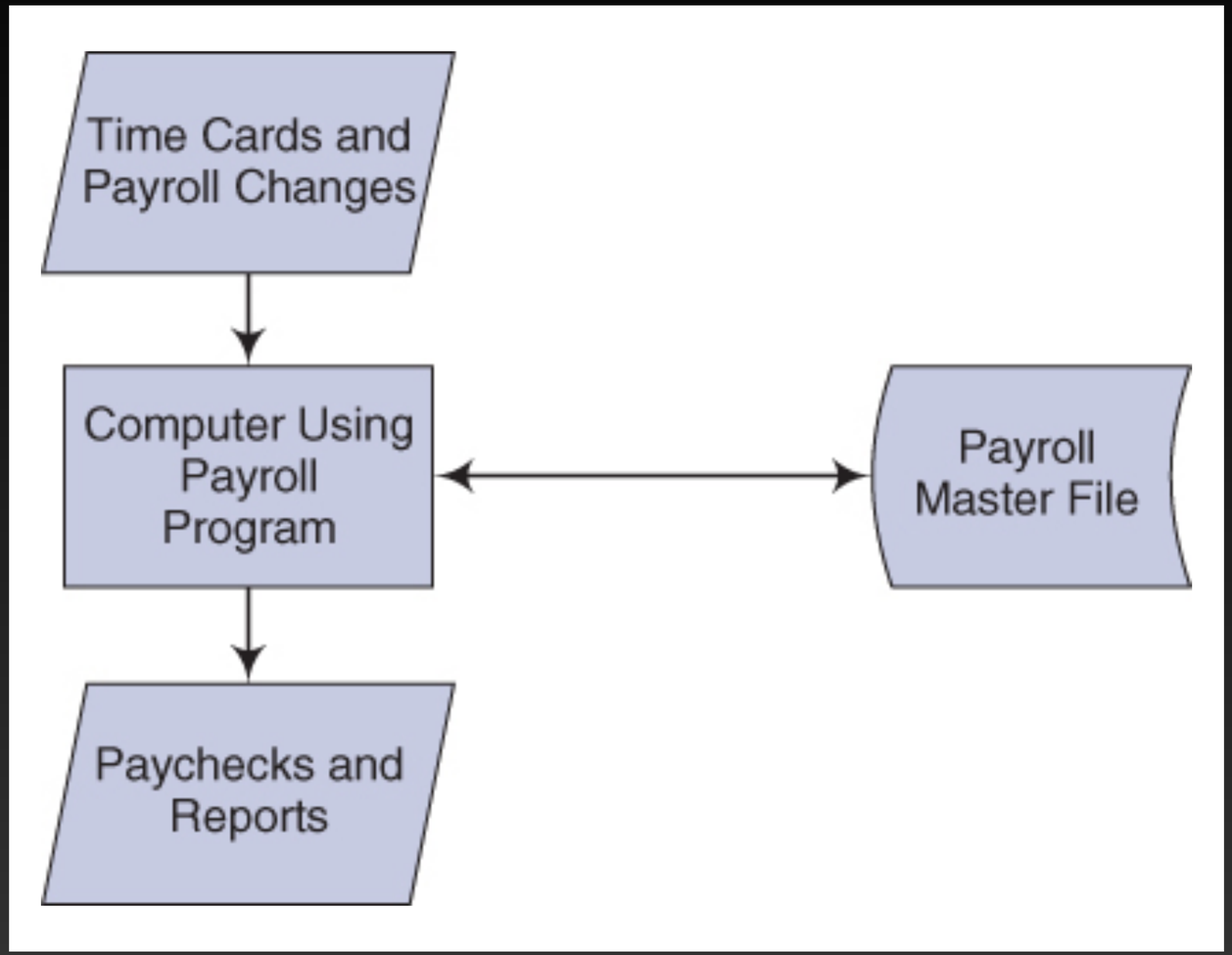




EXAMPLE 1

FIGURE 12-11. A high-level system flowchart for payroll processing.

Some system flowcharts are general in nature and provide only an overview of the system. These are high-level system flowcharts. Figure 12-11 is an example. The inputs and outputs of the system are specified by the general input and output symbol - a parallelogram. In more detailed system flowcharts, the specific form of these inputs and outputs would be indicated - for example, by magnetic disk symbols.

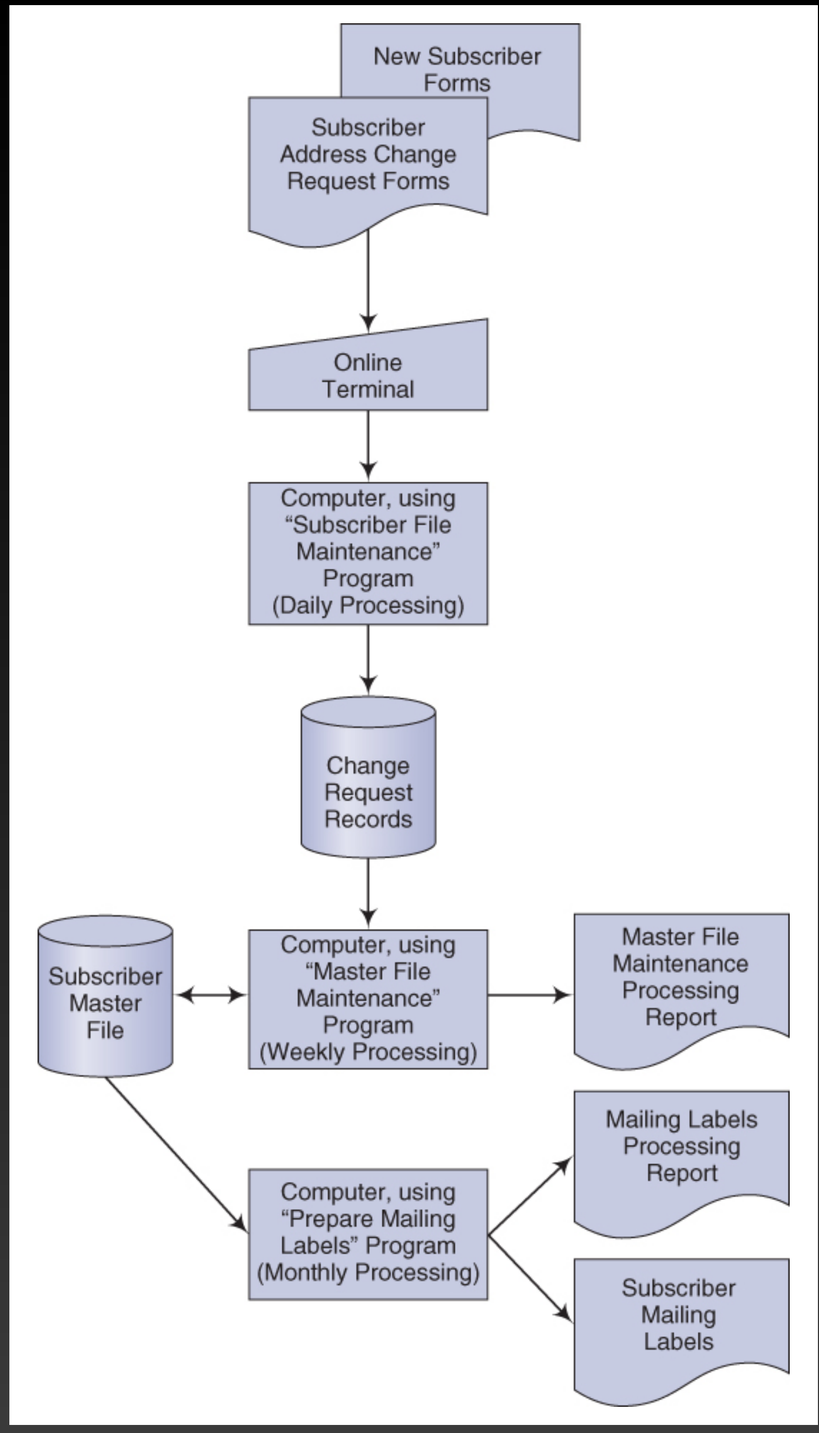


EXAMPLE 2

FIGURE 12-12. A system flowchart illustrating the computer steps involved in maintaining a subscriber master file and creating monthly mailing labels.

he Sarah Stanton Company is a magazine distributor that maintains a file of magazine subscribers for creating monthly mailing labels. Magazine subscribers mail change-of-address forms or new-subscription forms directly to the company, where input personnel key the information into the system through online terminals. The computer system temporarily stores this information as a file of address-change or new-subscription requests. Clerical staff key these data into computer files continuously, so we may characterize it as “daily processing.”

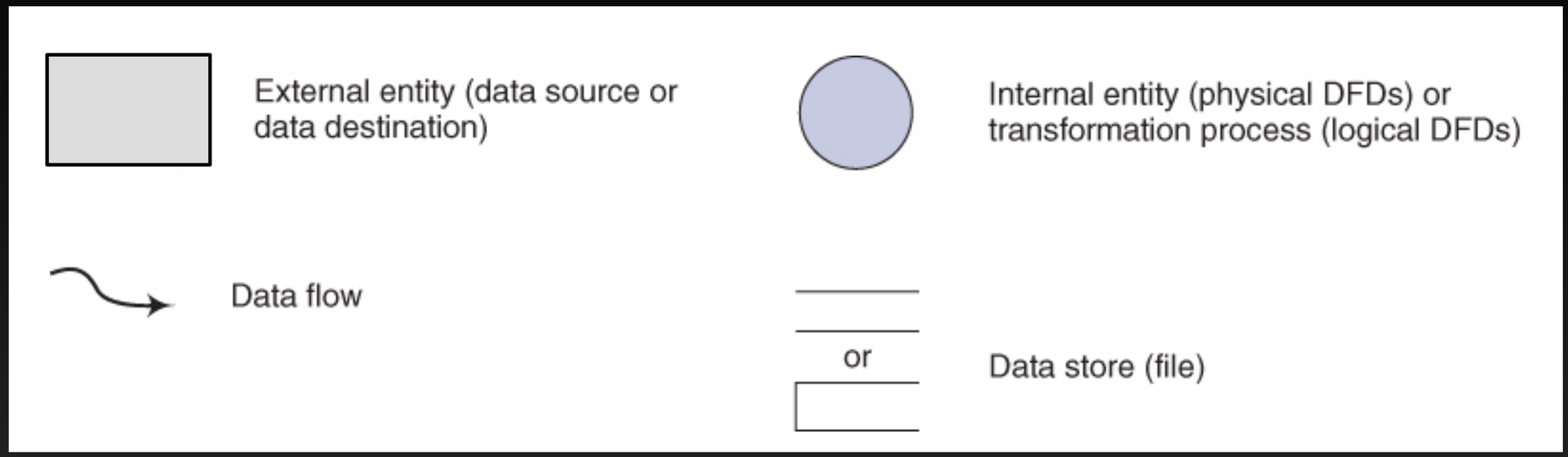
Once a week, the system uses the information in the daily processing file to update the subscriber master file. At this time, new subscriber names and addresses are added to the file, and the addresses of existing subscribers who have moved are changed. The system also prepares a Master File Maintenance Processing Report to indicate what additions and modifications were made to the file. Once a month, the company prepares postal labels for the magazine’s mailing. The subscriber master file serves as the chief input for this computer program. The two major outputs are the labels themselves and a Mailing Labels Processing Report that documents this run and indicates any problems.



Problem 12-17. The order-writing department at the Winston Beauchamp Company is managed by Alan Most. The department keeps two types of computer files: (1) a customer file of authorized credit customers and (2) a product file of items currently sold by the company. Both of these files are direct-access files stored on magnetic disks. Customer orders are handwritten on order forms with the Winston Beauchamp name at the top of the form, and item lines for quantity, item number, and total amount desired for each product ordered by the customer.

When customer orders are received, Alan Most directs someone to input the information at one of the department's computer terminals. After the information has been input, the computer program immediately adds the information to a computerized "order" file and prepares five copies of the customer order. The first copy is sent back to Alan's department; the others are sent elsewhere. Design a system flowchart that documents the accounting data processing described here. In addition, draw a data flow diagram showing a logical view of the system.

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



- ✓ The term "external entity" means an entity outside the AIS under study, not necessary an entity that external to the organization.
- ✓ Data flow lines are lines with arrows that indicate the direction that data flow in the system.
- ✓ For this reason, every data source symbol will have one or more data flow lines leading away from it, and every data destination symbol will have one or more data flow lines leading into it.
- ✓ For clarity, you should label each data flow line to indicate exactly what data are flowing along it.
- ✓ A circle or "bubble" in a DFD indicates a system entity or process that changes or transforms data. (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 transformation process - for example, "process cash receipts".

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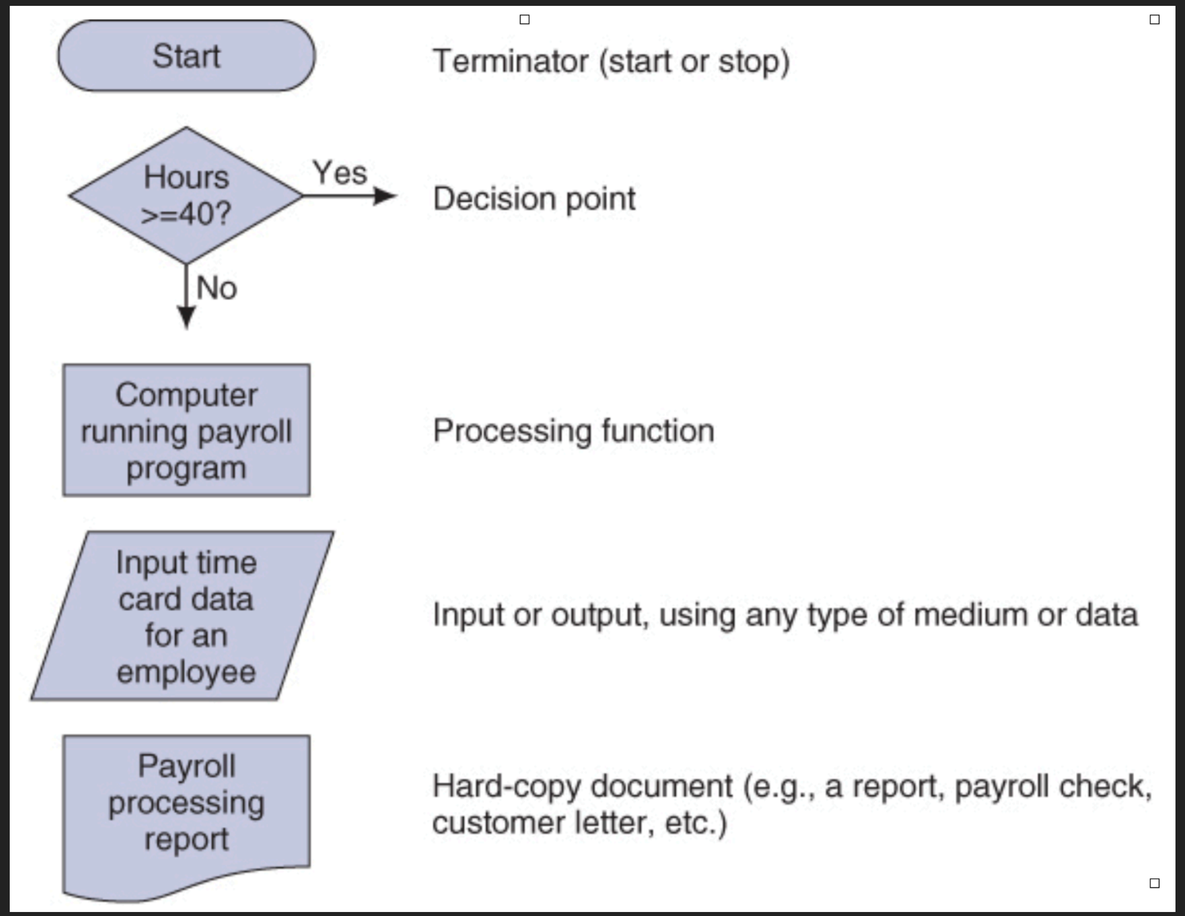

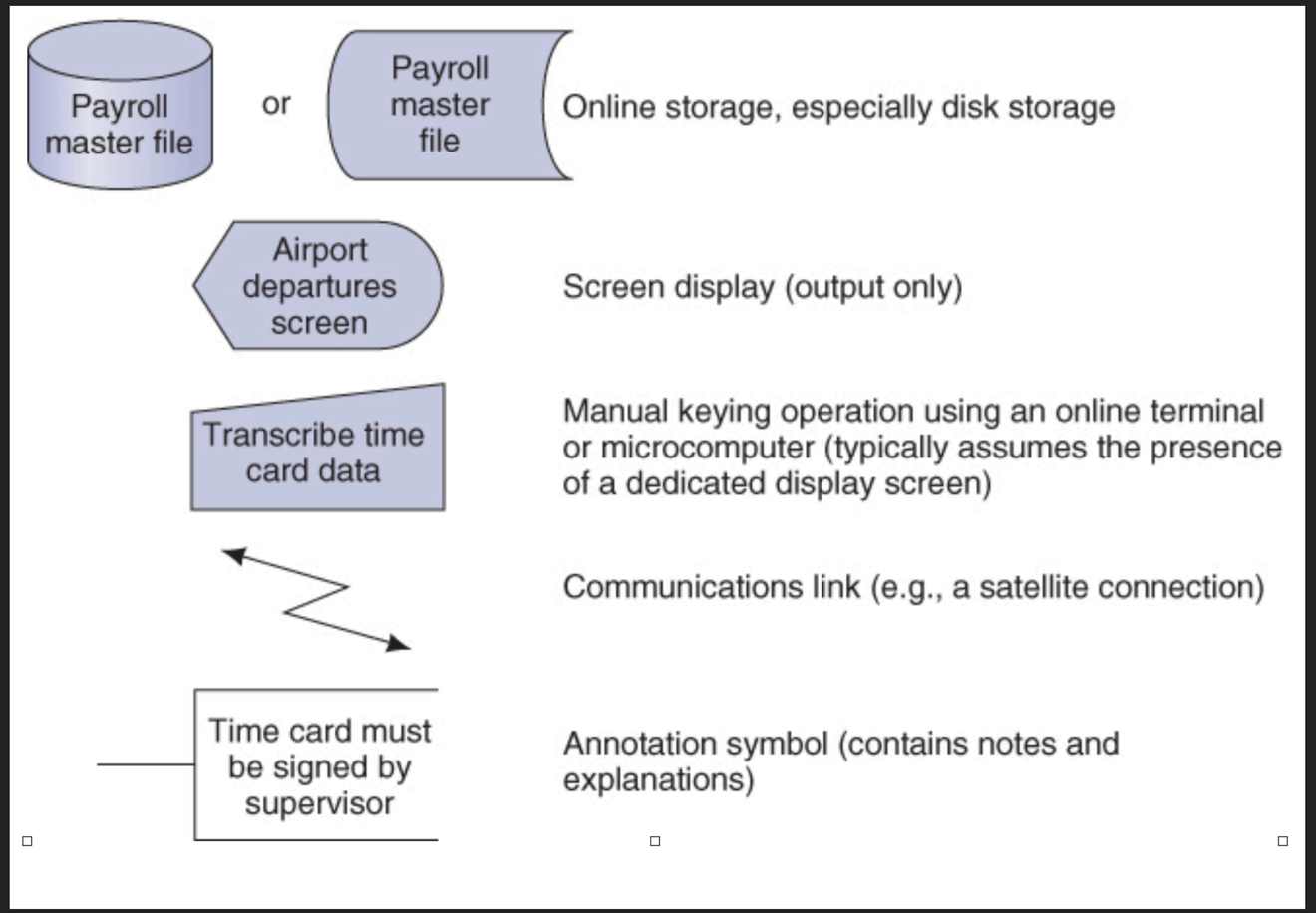

Problem 8-21. Food Court Inc. (System Flowchart)

Food Court Inc. (FCI) is a business in Boston that offers meal plans to college students. Students, or their families, buy debit cards with fixed amounts that they can use to purchase food at more than 50 local restaurants. FCI sells the cards to students using an online storefront and in several locations near major college campuses. The following paragraph describes the online card sale process.

A customer enters their credit card information online and then the amount of purchase. FCI's software automatically checks the card number to determine that it is a valid credit card number; for instance, there are certain digits that indicate Visa cards. The software displays an error message if the number is not valid. The usual cause of these errors is typographical. Once the customer completes the card order screen, the software sends the data in an encrypted form to FCI's host computer. Periodically, the FCI accountant retrieves transactions from the server. This is done by clicking on the "Get Transactions" screen button.

For each online transaction, the accountant then manually copies down the credit card number on a scrap of paper, walks across the office to the credit card machine, and keys in the credit card number, the amount, and the numerical portion of the address. The credit card software checks to see if the card is valid and charges it for the amount. The accountant next writes down the validation number, returns to the host computer, and enters it. The accountant prints a receipt for the transaction and puts it in a file. The customer database now reflects the new customer. When a customer purchases a card off-line with a credit card, the accountant swipes the card directly, checks its validity, charges the card, and then writes down the validation number, and enters it in the host computer.

Develop a flowchart for FCI's online sales process.

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Thank you!
Questions?