Accounting Information Systems
INFO 7225 | Spring 2022
Document 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.

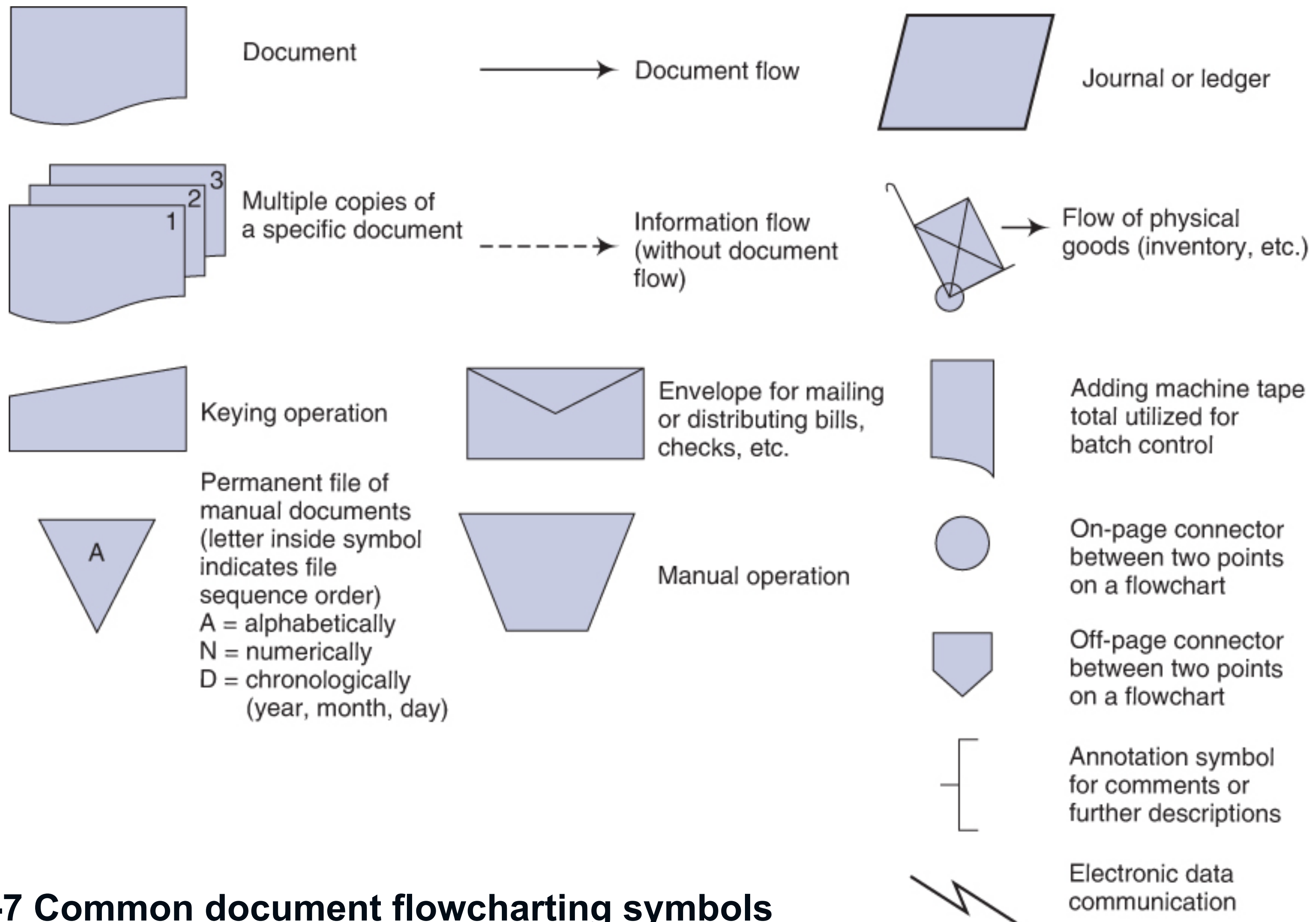   ✓ Document flowcharts provide more details about documents than do DFDs.

FIGURE 12-7 Common document flowcharting symbols

Guidelines for Drawing Document Flowcharts.

You can use the following guidelines to help you create good document flowcharts:

1. Identify all the departments that create or receive the documents involved in the system. Use vertical lines to create "swim lanes" to separate each department from the others.

2. Carefully classify the documents and activities of each department, and draw them under their corresponding department headings.

3. Identify each copy of an accounting document with a number. If multiple-copy documents are color-coded, use a table to identify the number–color associations.

4. Account for the distribution of each copy of a document. In general, it is better to overdocument a complicated process than to underdocument it.

5. Use on-page and off-page connectors to avoid diagrams with lines that cross one another.

6. Each pair of connectors (a "from" and a "to" connector in each pair) should use the same letter or number.

7. Use annotations if necessary to explain activities or symbols that may be unclear. These are little notes to the reader that help clarify your documentation.

8. If the sequence of records in a file is important, include the letter "A" for alphabetical, "N" for numeric, or "C" for chronological in the file symbol. As indicated in guideline 7, you can also include a note in the flowchart.

9. Many flowcharts in practice use acronyms (e.g., GRF or PHF in the preceding examples). To avoid confusion, use full names (possibly with acronyms in parentheses) or create a table of equivalents to ensure accuracy in identifying documents.

10. Consider using automated flowcharting tools. See the section of this chapter on computer-assisted software

Example 1.

Your boss asks you to document the paperwork involved in acquiring office supplies from your company's Central Supplies Department. Your administrative assistant explains the process as follows:

Reordering supplies requires a requisition request. When I need more stationery, for example, I fill out two copies of a goods requisition form (GRF). I send the first copy to central supplies and file the second copy here in the office.

There are two departments involved in this example—your department (which we will call the Requesting Department) and the Central Supplies Department. Thus, you should begin by naming these departments in the headings on your document flowchart (Figure 12-8). Next, draw two copies of the GRF under the heading for the Requesting Department because this is the department that creates this form. Number these copies 1 and 2 to indicate two copies.

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Example 2. Hiring a new employee:

The department that develops a vacancy must first complete a job vacancy form, which it forwards to my department (HR). We then advertise for the position and, with the help of the requesting department, interview applicants. When the vacancy is filled, the HR Department prepares a position hiring form (PHF) in triplicate. We file the first copy in a manual file, which is organized by employee Social Security number. We staple the third copy to the job vacancy form and return it to the Requesting Department, where clerks file it alphabetically by employee last name.

The HR Department forwards the second copy of the PHF to the Payroll Department. The Payroll Department uses the form as an authorization document to create a payroll record for the new employee. Thus, the information on the form is keyed directly into the company's computer system using an online terminal located in the payroll office. This copy of the PHF is then filed numerically for reference and also as evidence that the form has been processed.

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Example 3 (Problem 12-13)

Develop a document flowchart for the following information flow.

The individual stores in the Mark Goodwin convenience chain prepare two copies of a goods requisition form (GRF) when they need to order merchandise from the central warehouse. After these forms are completed, one copy is filed in the store's records and the other copy is sent to the central warehouse. The warehouse staff gets the order and files its copy of the GRF form in its records. When the warehouse needs to restock an item, three copies of a purchase order form (POF) are filled out. One copy is stored in the warehouse files, one copy goes to the vendor, and the third copy goes to the accounts-payable department.

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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.
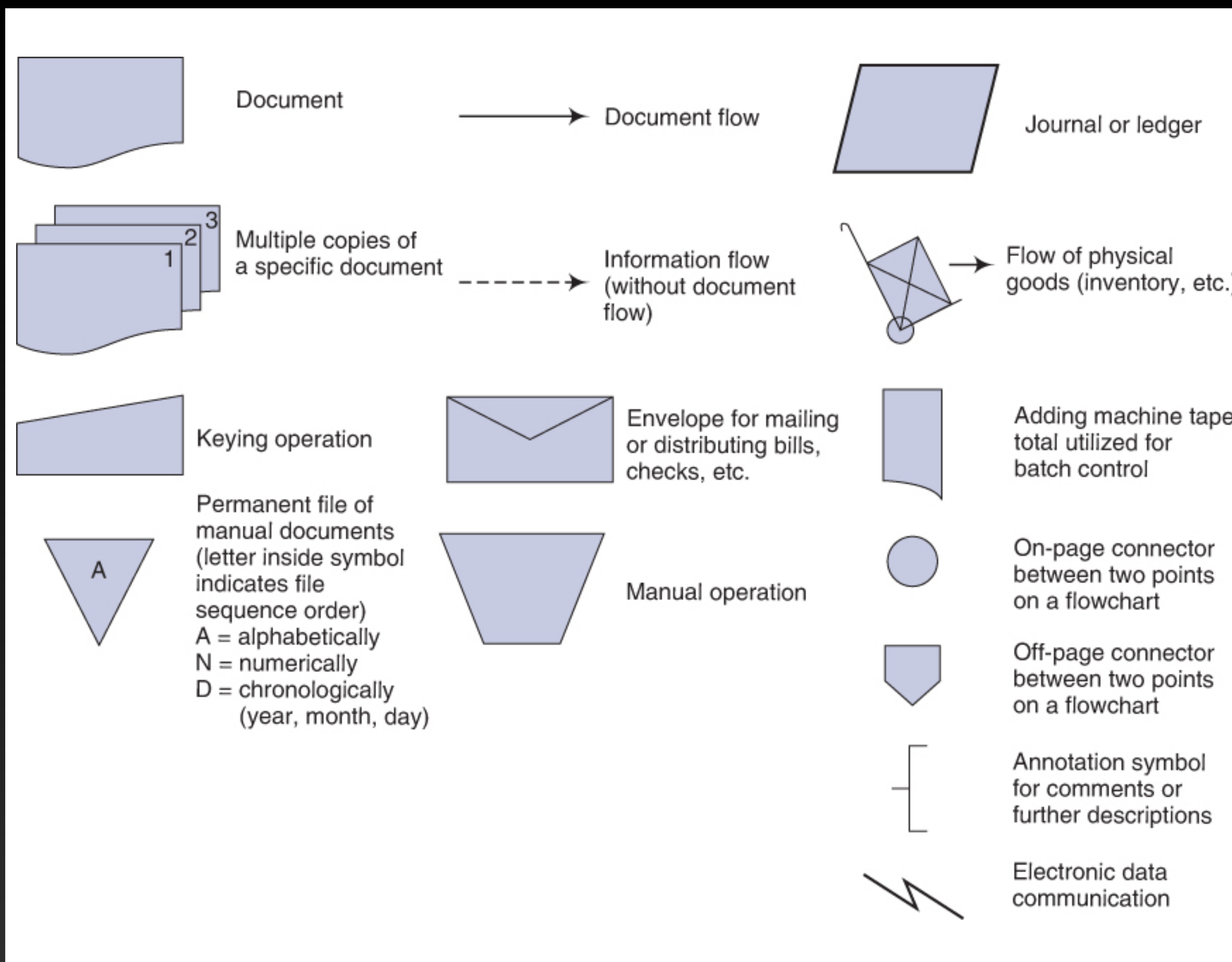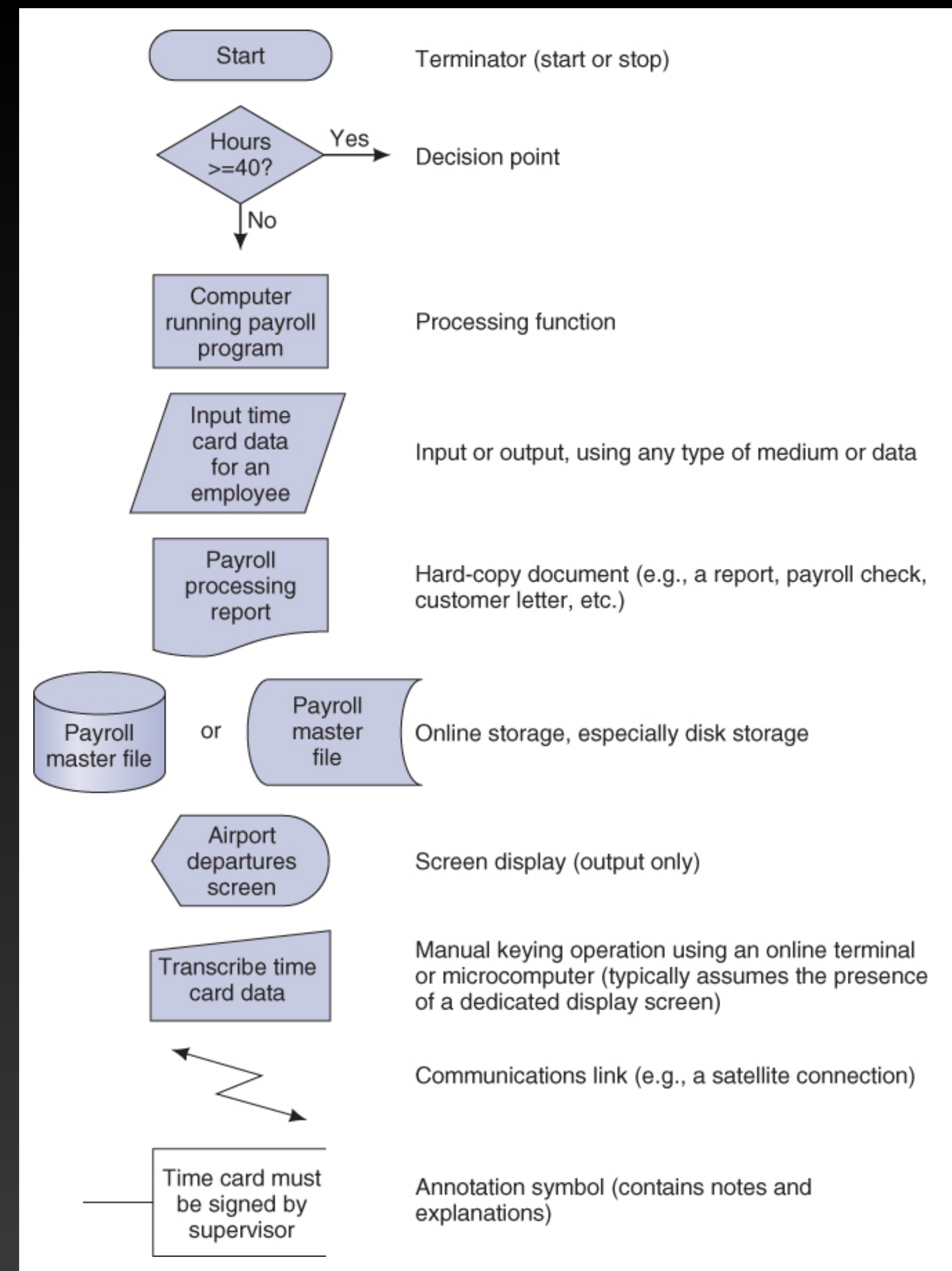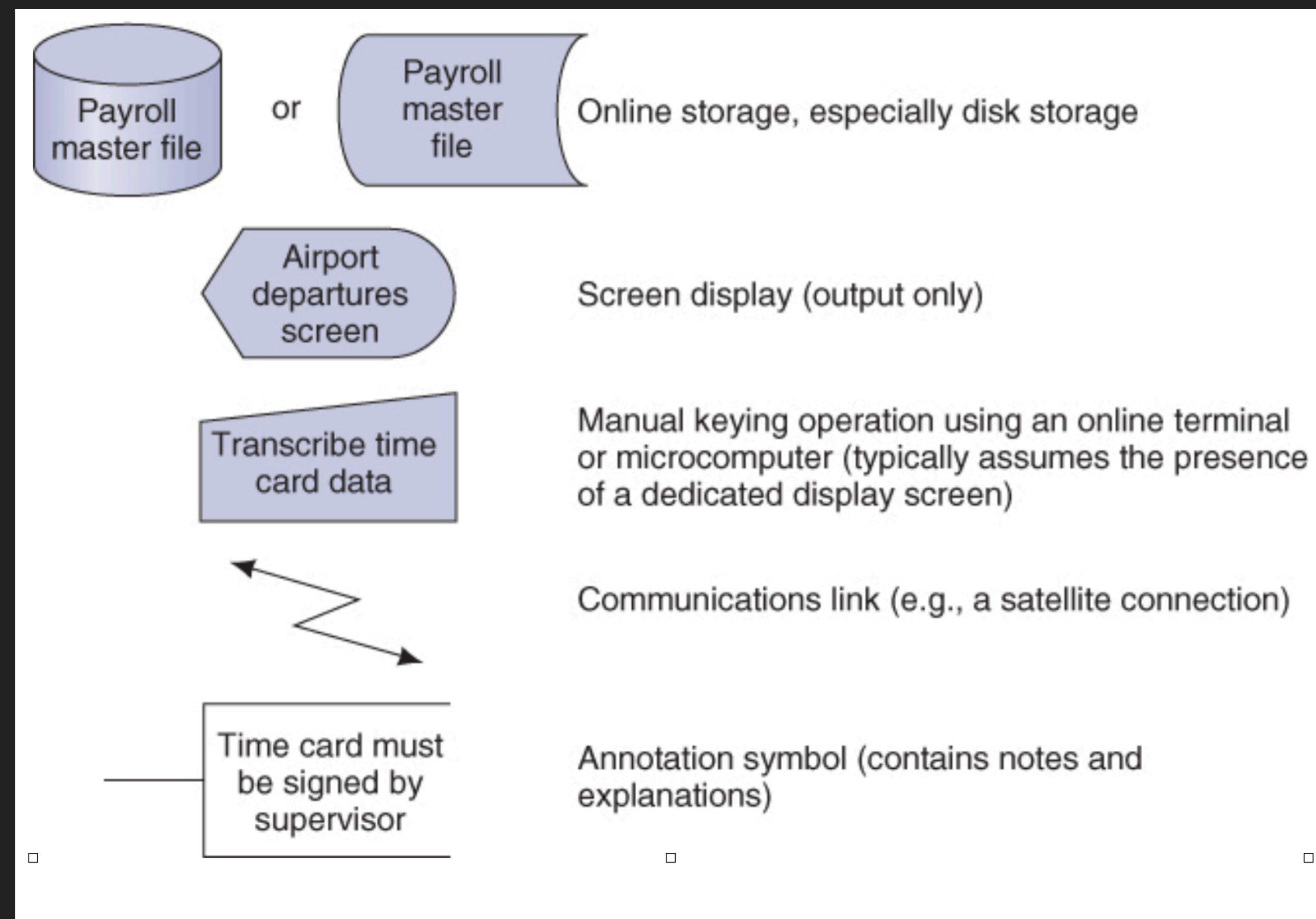
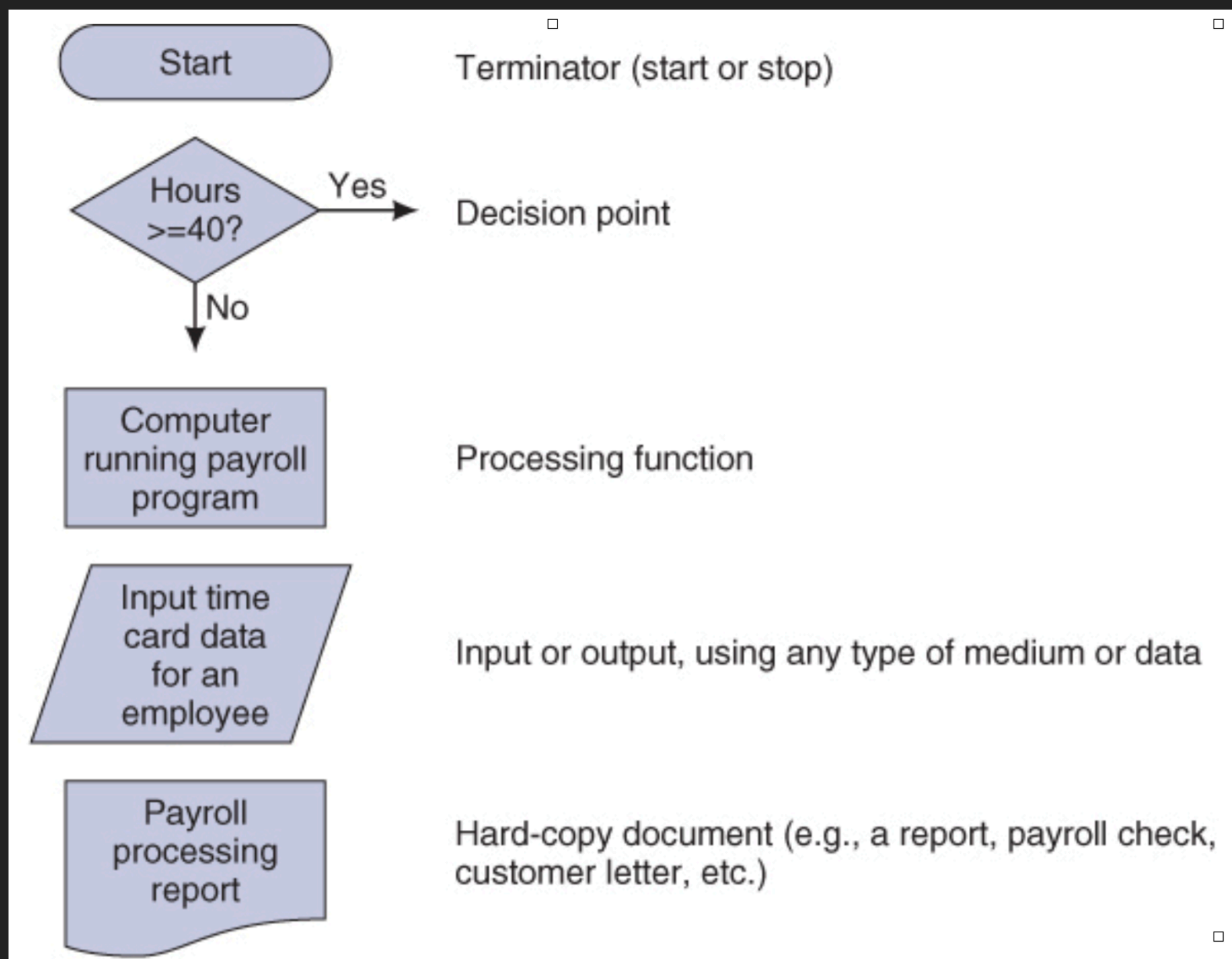**FIGURE 12-7. Common document flowcharting symbols**

Symbol	Description
	Document
	Document flow
	Journal or ledger
	Multiple copies of a specific document
	Information flow (without document flow)
	Flow of physical goods (inventory, etc.)
	Keying operation
	Envelope for mailing or distributing bills, checks, etc.
	Adding machine tape total utilized for batch control
A	Permanent file of manual documents (letter inside symbol indicates file sequence order) A = alphabetically N = numerically D = chronologically (year, month, day)
	Manual operation
	On-page connector between two points on a flowchart
	Off-page connector between two points on a flowchart
	Annotation symbol for comments or further descriptions
	Electronic data communication

FIGURE 12-10
Some common system and programming flowcharting symbols

Symbol	Description
Start	Terminator (start or stop)
Hours >=40? Yes / No	Decision point
Computer running payroll program	Processing function
Input time card data for an employee	Input or output, using any type of medium or data
Payroll processing report	Hard-copy document (e.g., a report, payroll check, customer letter, etc.)
Payroll master file or Payroll master file	Online storage, especially disk storage
Airport departures screen	Screen display (output only)
Transcribe time card data	Manual keying operation using an online terminal or microcomputer (typically assumes the presence of a dedicated display screen)
	Communications link (e.g., a satellite connection)
Time card must be signed by supervisor	Annotation symbol (contains notes and explanations)

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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.
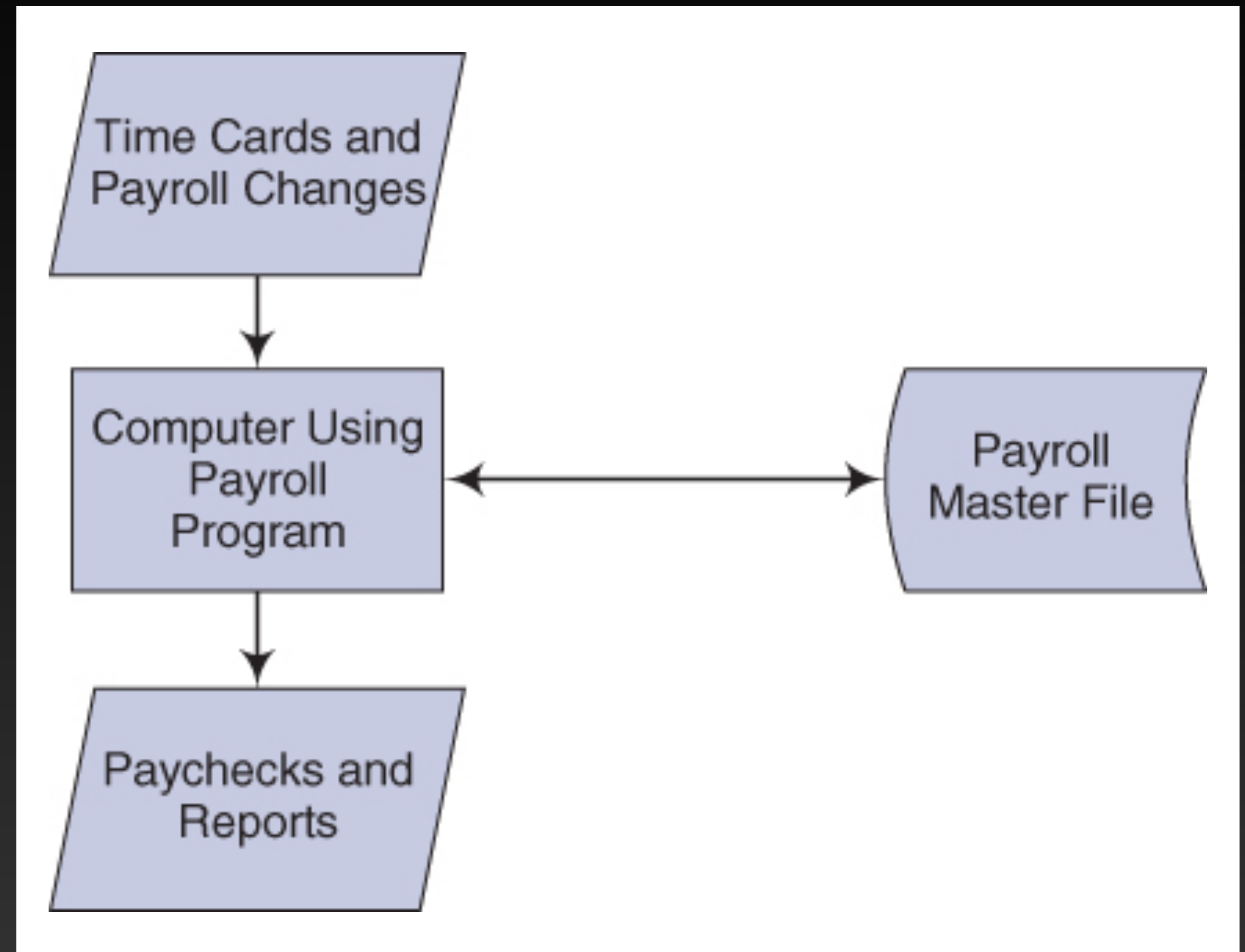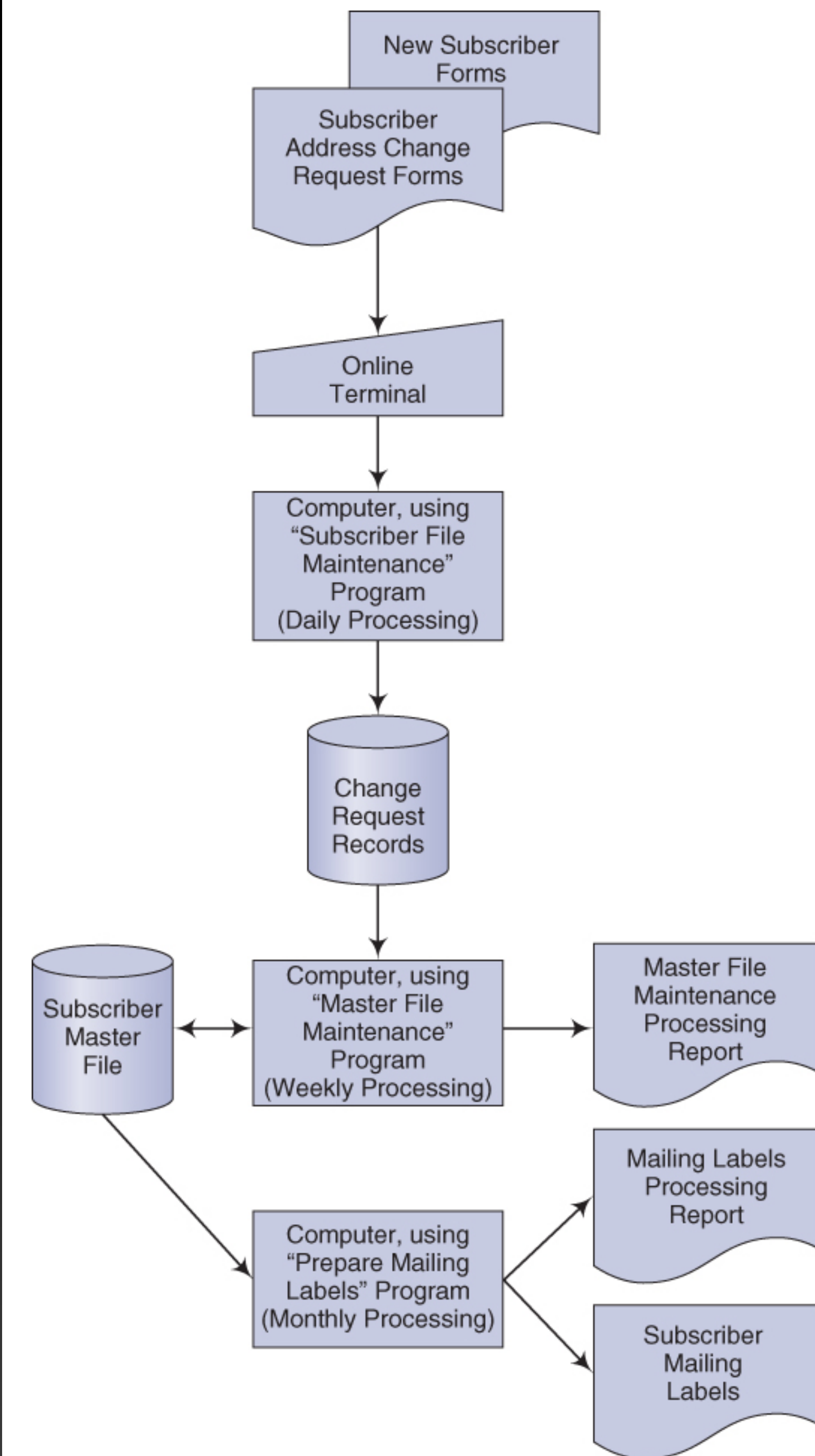
EXAMPLE 2

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.

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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?