Classifying Files by Function

There are six basic kinds of files, classified by the functions they perform in an information system:

1. Master file
2. Transaction file
3. Report file
4. Work file
5. Program file
6. Text file

A file only rarely has more than one of these functions. A *master file* represents a static view of some aspect of an organization's business at a point in time. For example, a manufacturing organization might have a payroll master file, a customer master file, a personnel master file, an inventory master file, a material requirements master file, and others. A record on a master file keeps track of the status of something, for example, an employee, a customer, a product, an account. Depending upon how recently the contents of a master file were brought up to date and how much the pertinent status has changed since that time, the master file is a more or less accurate snapshot of some aspect of the "real world." A master file contains relatively permanent data or historical status data. A special kind of master file is a dictionary file, which contains descriptions of data rather than the data themselves.

Changes that are going to be applied to a master file are collected on a *transaction file*. As we discuss later in this chapter, a *transaction* may contain data to add a new record or to remove or modify an existing record on a master file. Each record on a transaction file represents an event or change in something whose status is tracked on a master file.

A *report file* contains data that are formatted for presentation to a user. The file may be spooled to a printer to produce a hard-copy report or may be displayed on a terminal screen. A report file may be produced by a report-writer package or by an application program.

A *work file* is a temporary file in a system. It has neither the long-term character of a master file nor the input or output character of a transaction or report file. One common use of a work file is to pass data created by one program to another.

A *program file* contains instructions for the processing of data which may be stored in other files or resident in main memory. The instructions may be written in a high-level language (e.g., COBOL, Pascal), an assembler language, machine language, or a job control language. The instructions may be in the form of source code or may be the result of compilation, linking, interpretation, or other processing.

A *text file* contains alphanumeric and graphic data input using a text editor program. A text file may be processible only by that text editor, or may be stored in such a way that it can be processed by several editors.

Consider the example system flow diagram given in Fig. 10-1. This system is a rudimentary payroll system that eventually produces paychecks from employee timecard and payroll information. The following table lists the name of each file and its function in the information system. The actual execution of this system generally would involve the use of other files, containing for example, system audit data, diagnostics, user accounting data, executable program code, and job control instructions.
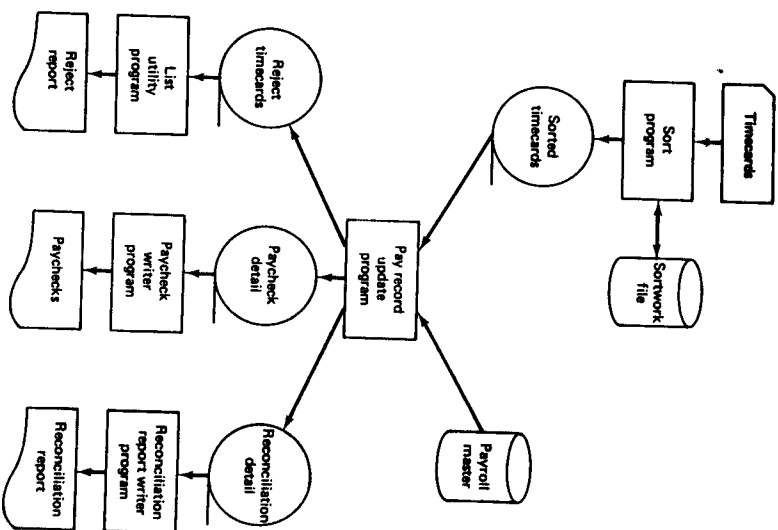

Figure 10-1 Example system flow diagram.

FILE	FUNCTION
timecards	transaction
sort program	program
sort-work file	work
sorted-timecards	transaction
payroll master	master
pay record update program	program
reject timecards	work
paycheck detail	work
reconciliation detail	work
list utility program	program
reject report	report
paycheck writer program	program
paychecks	report
reconciliation report writer program	program
reconciliation report	report