# tymshare & files

A file is an area on a storage medium where programs, data, and text may be saved from one session at the terminal to another. Although all time sharing companies offer file storage, only Tymshare provides a complete set of file types for every programming need.

There is no practical restriction on the number of files a single user may create. Files may be created in the EXECUTIVE, EDITOR, in any of the Tymshare languages, and in many Tymshare library programs. Symbolic files written during execution of a program in one language may be used as data by a program in another language.

The Tymshare system allows easy manipulation of files. Simple EXECUTIVE commands may be used to copy files, to rename files, to delete unneeded files, and to execute program files.

The Tymshare system offers extensive file security. The user may set file access controls to protect his files. For example, he may declare a file public or private. By declaring a file public, several users may simultaneously access data within it.

Enciphered files provide maximum security. With the CIPHER program, a user can encode a symbolic file into a form which no one can decode without the key word. An encoded file can be stored with complete security. When the user wishes to use the file again, he simply calls CIPHER and gives the key word.

The Tymshare FAILSAFE feature prevents accidental loss of data due to line disconnection or terminal failure. If the computer detects that a line has been disconnected before the LOGOUT command was given, it will save the contents of the program on a special file so that it may be used later.

Tymshare provides yet another file protection feature. Every file which is created or changed at any time during the day is copied to a second storage medium at the computer center at the end of the day. Thus, if the file is accidentally deleted or changed later, the user may request that it be restored from the backup copy at the computer center.

Tymshare's file capabilities include:

## FILE TYPES

- **Symbolic Files**

  Symbolic files contain information in the standard alphanumeric character representation. They may be used as program files or data files.

- **DUMP Files**

  Occasionally a user must terminate a computer session in the middle of a program. A DUMP file allows him to save the program, data, and all work done up to the point of termination. If termination occurs while the program is running and a DUMP file is created, the values of the program variables are saved. Thus he may continue at the exact point he terminated by giving the EXECUTIVE RUN command.

- **Binary Files**

  Binary files are written in internal machine code. Compiled programs and data may be stored on binary files for security and economy. Binary files cannot be listed in EXECUTIVE or EDITOR. They usually consume less storage space and are faster to load.

- **GO Files**

  A GO file is a binary program file which may be executed directly from the EXECUTIVE. A GO file automatically calls the language and executes the program. GO files may not be listed, since they are written in machine code.

## PROCESSING MODES

Files may be created and accessed in two modes – random and sequential. Files created in one mode may be accessed in the other. Data on these files may be symbolic or binary.

- **Random Files**

  Random files provide almost unlimited flexibility for handling information retrieval and file updating problems. The user may read, write, or erase information at any point on the file without reading or writing the rest of the file. Records may be of variable or fixed length.

- **Sequential Files**

  Data on sequential files is processed in the order in which it is stored on the file. Sequential files are easy to use and require less program overhead than random files.

## FILE ACCESS CONTROLS

The user may set controls on individual files or on his entire file directory. These controls ensure that his files are used only as he specifies.

- **Proprietary Files**

  Proprietary files allow a program to be executed by other users, but prevent these users from obtaining a listing of the program, deleting it, or copying it to their directories.

- **Append Only Files**

  Information may be added to these files by selected users, but the files may not be deleted by these users. All additions to such files are made at the end of the file.

- **Read Only Files**

  Read only files may be read by the user and others he designates, but may not be changed or deleted.

- **Enciphered Files**

  Files encoded with the CIPHER program can be interpreted only with the key word.

## SPECIAL PROGRAM EXECUTION FILES

- **Command Files**

  A command file is a special type of file containing commands which direct the execution of a series of programs. The system takes its commands from the file rather than requiring the user to enter them at the terminal.

- **Initialized Command Files**

  A command file may be initialized to produce the automatic execution of any sequence of commands immediately after the user logs in. This is accomplished by using the INIT command.

- **Remote Files**

  Remote command files are used to execute proprietary programs in one directory by another user. They provide maximum security for such programs by preventing the user from knowing even the name of the proprietary file while allowing him to access any file which the proprietary file calls.

## LIBRARY FILES

The Tymshare system includes a number of library files containing useful programs executable by all users. Library files include specialized applications in the fields of business, statistics, mathematics, and engineering, as well as utility and demonstration programs.


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