

JEROME K. MILLER  
Assistant Professor  
Graduate School of Library and Information Science  
University of Illinois at Urbana-Champaign

## Copyright

There appear to be five basic systems employed to protect inventive and literary properties: patents, copyrights, trademarks, trade secrets, and contracts. Copyrights appear to have the greatest value for protecting computer programs and databases, but the other elements—patents, trademarks, trade secrets, and contracts—have some applications, or perceived application, to this area.

Patents have been a part of U.S. law since 1890. The patent law seems to be perfectly suitable for protecting an invention for a new mechanical process or a new chemical process, but it has not lent itself to the protection of computer programs. Obtaining a patent requires a lengthy legal process that commonly requires two or three years and an expenditure of at least a thousand dollars. Although the Supreme Court indicates that patents have some application to the protection of computer programs, the Court has rejected almost every patent application it has reviewed. The problem centers on the difference between algorithms, which the Court will not protect, and other aspects of computer programs which the Court indicates are eligible for patent protection. The first breakthrough in solving this problem occurred in a recent Supreme Court decision in the *Diehr* case.<sup>1</sup> The Court held that a computer-governed process for curing synthetic rubber was eligible for patent protection, but that the patent protection did not apply to the algorithm employed in the process. Other cases are pending which may open the way for patent protection for computer programs. At the moment, however, patents have little value for protecting computer programs.

Another form of protection for creative works is trademarks. Trademarks protect trade names, or service marks, such as the IBM name and

logo, or the McDonald's name and logo. Trademark registration prevents a competitor from using these names or marks or anything similar which might mislead a consumer. Computer software producers may register the names of their programs, products or services, and the major firms probably have done so. Aside from the protection of names, logos or symbols, trademarks have little value for protecting software or hardware.

Trade secret laws are another means for protecting intellectual property or inventive property. The most famous trade secret is the Coca-Cola formula, which is known only to a few senior executives of the Coca-Cola Company. Unlike patents and copyrights, trade secrets have an indefinite life, so long as the secret is preserved. The trade secret law has limited application to programs, since a competent observer can examine a program and identify the new procedure or the new secret. Because secrecy is the essence of the trade secrets law, it can only be applied to specialized computer programs known to only a few people. Trade secrets in software, which is widely distributed to schools, libraries or businesses, have an extremely short life.

The fourth means of protection depends on contract law. Contracts are used to regulate the use of patents and copyrights by the licensee and to protect trade secrets. Contracts are also used to protect software which is not, or may not be, protected by copyright, patents or trade secrets. The importance of this tool has been enhanced by the confusion over patent and copyright protection for computer programs. The need for strong contract protection for software is somewhat reduced by the recent passage of the Copyright Amendment Act of 1980.

### Copyright Protection

Copyright protection for computer programs has been a source of confusion for twenty-five years or longer. The problem stems from the term *writings* in Article I, Section 8 of the Constitution:

The Congress shall have Power...

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries....

The term *writings* did not cause any confusion in the eighteenth century when Congress extended copyright protection to maps and navigation charts, but it became a source of controversy as creators attempted to apply the copyright law to the newer media. Some interpreted *writings* literally, so as to deny copyright protection to works that were not created in an eye-legible form. This literal interpretation was embodied in the Supreme Court decision in *White-Smith v. Apollo* (1908).<sup>2</sup> In this case, the Court

determined that player piano rolls were not “writings,” so they were not eligible for copyright protection.

The limit on copyright protection for non—eye-legible materials was partially broken by the Copyright Amendment of 1912, which granted copyright protection to motion-picture films. It was further broken by the Sound Recording Amendment of 1971, which granted copyright protection to sound recordings. The question of copyright protection for non—eye-legible materials remained a source of confusion until the passage of the Copyright Revision Act of 1976. The whole question was settled very nicely in section 102(a), which states: “Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”<sup>3</sup>

Although section 102(a) removed the old bugaboo about “writings,” the act included a significant exception in section 117. Section 117 stated that the copyright law was to remain unchanged in regard to computer programs. Congress left the law unchanged since the National Commission on the New Technological Uses of Copyrighted Works (CONTU) was then studying the issue. Congress indicated that section 117 would be revised later to reflect CONTU’s recommendations. The CONTU *Final Report* was issued in July 1978,<sup>4</sup> but its recommendations for changes in copyright protection for computers did not become law until December 1980, when it was attached to the 1980 Patent Revision Act.<sup>5</sup> Under the 1980 amendment, copyright protection for computer programs is provided under the general provisions of section 106.

## Section 106

Section 106 contains the essential elements of copyright protection for authors, composers, artists, and the like:

### §106. Exclusive rights in copyrighted works

Subject to sections 107 through 118, the owner of copyright under this title has the exclusive rights to do and to authorize any of the following:

- (1) to reproduce the copyrighted work in copies or phonorecords;
- (2) to prepare derivative works based upon the copyrighted work;
- (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending....<sup>6</sup>

The first two subsections are significant in that they give the author, or the author’s publisher, the right to reproduce the work for sale or other distribution and to prepare new editions (derivative works). These exclu-

sive rights are modified by the specific provisions of section 117 and the general provisions of section 107, on fair use.

### Section 117

The new section 117, contained in the 1980 Patent Revision Act, embodies the computer program users' rights. The owners of copies of computer programs may make archival copies of programs. They are also permitted to make some changes in programs and to sell the programs and archival tapes. The text of the new section 117 reads as follows:

#### §117. Limitations on exclusive rights: Computer programs

Notwithstanding the provisions of section 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided:

- (1) that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or
- (2) that such new copy or adaptation is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

Any exact copies prepared in accordance with the provisions of this section may be leased, sold, or otherwise transferred, along with the copy from which such copies were prepared, only as part of the lease, sale, or other transfer of all rights in the program. Adaptations so prepared may be transferred only with the authorization of the copyright owner.<sup>7</sup>

Additional users' rights are available through section 107, on fair use.

### Fair Use

The doctrine of fair use was developed by the courts to balance the interests of copyright proprietors and the users of copyrighted works. To simplify greatly, fair use permits persons other than the copyright owner to copy a small part of a work in a manner that is not injurious to the copyright owner. The doctrine of fair use was part of the common law of the United States until the Copyright Revision Act of 1976 went into effect in 1978. The fair use section is very brief, consisting of a broad definition of fair use and four criteria for applying the concept.

#### §107. Limitations on exclusive rights: Fair use

Notwithstanding the provisions of section 106, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringe-

ment of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
- (4) the effect of the use upon the potential market for or value of the copyrighted work.<sup>8</sup>

Although fair use has broad application, it is generally associated with the work of students, scholars, teachers, and journalists. Although little has been written about it, fair use also applies to the duplication and use of copyrighted computer programs. Fair use permits the programmer to include part of a copyrighted program in one he or she is writing. It also permits the user of an online service to duplicate a portion of a copyrighted database for the purpose of quoting it or including it in a new database. Although the fair use section is useful, its application to computer programs is severely limited by the terms of the commonly used computer use contracts. Because of the ambiguity surrounding patent and copyright protection for programs, the owners of those materials have depended on contracts to protect their interests. Although program or database contracts may not specifically forbid the application of fair use, their terms appear to do so. Program users may be able to recover their fair use rights by including an appropriate clause in their contracts, such as: "Nothing in the terms of this contract contravenes the licensee's rights under Title 17, Section 107, U.S. Code." The copyright owners may be reluctant to accept this condition, but it may serve as an opening wedge in efforts to recover the fair use rights embodied in the copyright law.

### **Input-Output**

The two computer users' rights sections, sections 107 and 117, do not address the question of entering copyrighted materials in computers. Some persons have argued that they should be permitted to input copyrighted materials and pay royalties when the materials were printed or incorporated in another work. Although inputting a very small amount of a work may fall within the provisions of the fair use section, inputting more than a small part of a work creates a copy "fixed in any tangible medium of expression"<sup>9</sup>—and this is one of the rights reserved to the copyright owner under section 106.<sup>10</sup>

### Copyright Protection for Older Programs

The 1980 copyright amendment went into effect on the date of its passage, December 12, 1980. Neither the amendment nor the accompanying reports comment on copyright protection for programs created before that date. Until the courts rule to the contrary, it seems safe to assume that programs created before that date, and which display a copyright notice, are protected. Their protection appears to stem from the fact that computer programs are now a recognized and accepted media capable of copyright protection, and because the Copyright Office has been accepting computer programs for copyright registration since 1964. In 1964, John F. Banzhaf III, a law student, wrote a simple program which he recorded on a short length of magnetic tape. He wrapped the magnetic tape on a typewriter ribbon spool and submitted it to the Copyright Office for registration. After some negotiation with Mr. Banzhaf, the Copyright Office modified its procedures to accept copyright registration of computer programs.<sup>11</sup> The Copyright Office statement announcing this new procedure indicated computer programs would be accepted for copyright registration, but the Copyright Office could not assure the registrant that the copyright was legitimate.<sup>12</sup> The legitimacy of all those registrations accepted since 1964 was tacitly supported by the old section 117, which went into effect on January 1, 1978. It was further resolved by the Copyright Amendment Act of 1980, which provided full copyright protection for computer programs. Although the copyright acts of 1976 and 1980 are not retroactive and the law has not been tested in the courts, one may assume that all of those copyrights created from 1964 to 1978 are protected under the terms of the 1909 act, and that they would be respected by the courts. It may be interesting to note that IBM holds over half of the copyrights registered under the 1964 procedure. In hindsight, it appears that IBM legal staff made a good decision to register those programs to assure their protection.

Some software vendors took an alternate approach to copyright protection. They issued all of their programs with a copyright notice, but they did not register the copyrights. Their copyrights are probably valid under the terms of the 1909 act, the 1976 act, and the 1980 amendment. Since the copyright proprietors did not register their programs, they probably will not receive the full benefit of copyright protection, as registration is essential to obtain some benefits. One should not assume that their copyrights are invalid, but it may be unprofitable for a proprietor to sue an infringer.

### Are Databases Programs?

A final question concerns the application of the 1980 copyright amendment to bibliographic databases. The 1980 amendment offers the following basic definition of the materials covered by the amendment: "A 'computer program' is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."<sup>13</sup> The *CONTU Final Report* seems to suggest that databases are covered by that definition, but many question whether that definition is broad enough to cover databases.<sup>14</sup> Although the *CONTU Final Report* does not have the force of law, it seems safe to assume that it is an accurate reflection of the intent of the legislators who accepted the *CONTU* recommendations and embodied them in the copyright law.

The key question, however, is not whether databases fall within the definition of computer programs, but whether or not they fall within the definition of a compilation:

A "compilation" is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term "compilation" includes collective works....

A "collective work" is a work, such as a periodical issue, anthology, or encyclopedia, in which a number of contributions, constituting separate and independent works in themselves, are assembled into a collective whole.<sup>15</sup>

If static or dynamic databases fall within either of those definitions, they are eligible for copyright protection. In such a case, the copyright protection extends only to "the material contributed by the author of such work, as distinguished from the preexisting material employed in the work, and does not imply any exclusive right in the preexisting material."<sup>16</sup> Under these terms, copyright protection for a database consisting of some new materials and some materials obtained from other sources is limited to the materials and organization supplied by the creator. If some of the materials in the database are in the public domain (e.g., catalog copy prepared by the Library of Congress), then they remain in the public domain. If some of the materials in the database are taken from a copyrighted source (e.g., a bibliographic citation from a Bowker or Wilson index), then the copyright in that citation remains the property of the original copyright holder. Under these conditions, it may be difficult to sort out the ownership of all of the data in a database, but there is little doubt that copyright protection is available for these databases.

## Copyright Registration and Notices

The registration and notice requirements were originally designed for items that were finished and registered before they entered the market. Programs and databases may be in a constant state of change and that raises questions about the best procedures for providing full copyright protection for them. The CONTU *Final Report* suggests that a procedure should be established by the Copyright Office to facilitate occasional updating of these registrations.<sup>17</sup> Until the Copyright Office provides appropriate procedures for updating registrations, it seems appropriate to register these products as early as possible. When procedures are established to handle this material, the copyright owners will probably have to provide supplementary registration from time to time.

Copyright notices are not difficult to provide. A notice containing the word *copyright* or the © symbol, the name of the copyright owner, and the year of creation should appear on the printout or on the screen each time the program or database is applied or accessed. Additional dates should be added to the notice for each year in which the program or database is revised or expanded (e.g., Copyright East-West Data Service, 1978, 1979, 1980, 1981, 1982). Notices also should appear on programming sheets, program guides, and the like.

## Conclusion

Copyright protection for computer programs and databases has been a source of confusion for over twenty years. The confusion over the term *writings* in the Constitution was an early bar to copyright protection for the electronic media. The problem was overcome through the broad terms of the Copyright Revision Act of 1976, but that act contained one section freezing copyright protection for computer programs until the recommendations of the National Commission on New Technological Uses of Copyrighted Works could be implemented. The commission completed its work in 1978, and an amendment to the Copyright Revision Act of 1976, embodying its recommendations, was passed in December 1980. This removed the section freezing copyright protection for computer programs, thereby allowing the general provisions of the act to apply to computer programs as they apply to books, films, records, and other media. The 1980 amendment went beyond removing the freeze on copyright protection for computer programs; it also provided a reasonable set of users' rights to facilitate revising and making archival copies of programs.

Many of the questions about inputting copyrighted materials, and copyright protection for dynamic databases, have been resolved by the 1980 amendment. Other questions about registration and deposit procedures

are still unanswered, but the resolution of these problems will not require legislation. The Copyright Office can handle those matters through its rule-making authority, and it will probably do so in the near future. In short, most of the problems in the application of the copyright law to computer programs and databases have been resolved, although the answers will not please everyone.

## REFERENCES

1. Sidney A. Diamond *v.* James R. Diehr II (S.C. 79-1112). In *BNA's Patent, Trademark and Copyright Journal*, no. 519 (5 March 1981), pp. D.1—D.12.
2. White-Smith *v.* Apollo, 209 *U.S. Reports* 1; 28 S. Ct. 319 (1908).
3. *U.S. Code*, Title 17, "Copyrights," sec. 102(a). (Hereinafter cited as Copyright Act.)
4. National Commission on New Technological Uses of Copyrighted Works (CONTU). *Final Report*. Washington, D.C.: USGPO, 1978.
5. P.L. 96-517, "An Act to Amend the Patent and Trademark Laws." 12 Dec. 1980. *U.S. Statutes at Large*, vol. 126, sec. 10, p. 3028.
6. Copyright Act, sec. 106.
7. Title 17, "Copyrights." *U.S. Code Annotated, 1980 Laws Special Pamphlet*, pt. 1, sec. 117.
8. Copyright Act, sec. 107.
9. *Ibid.*, sec. 102(a).
10. *Ibid.*, sec. 106(1).
11. Banzhaf, John F. "Copyright Protection for Computer Programs." In *The Law of Software* (Proceedings of the First Annual Conference on the Law of Software, 1968). Washington, D.C.: George Washington University, 1968, pp. C-33—C-50.
12. U.S. Copyright Office. "Computer Programs" (Circular 61). Washington, D.C.: 1974.
13. Copyright Act, sec. 101.
14. CONTU, *Final Report*, pp. 94-96.
15. Copyright Act, sec. 101.
16. *Ibid.*, sec. 103(b).
17. CONTU, *Final Report*, p. 96.