UNITED STATES COURT OF APPEALS

FOR THE FIRST CIRCUIT

No. 93-2214

LOTUS DEVELOPMENT CORPORATION,

Plaintiff-Appellee,

–v.–

BORLAND INTERNATIONAL, INC.,

Defendant-Appellant.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS
HONORABLE ROBERT E. KEETON, JUDGE

BRIEF OF AMICI CURIAE
APPLE COMPUTER, INC.,
DIGITAL EQUIPMENT CORPORATION,
INTERNATIONAL BUSINESS MACHINES CORPORATION,
and XEROX CORPORATION

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INTRODUCTION AND INTEREST OF AMICI CURIAE

Amici are: Apple Computer, Inc., Digital Equipment Corporation, International Business Machines Corporation, and Xerox Corporation. Amici request leave to file this brief because this appeal raises a copyright question of exceptional importance to authors of computer programs and to the software industry: whether computer programs are to be protected as literary works in accordance with general copyright principles, as the court below properly held, or whether a court should instead adopt for computer programs a set of special restrictive rules. We take no position on the factual issues in this case.

Amici are leading developers of software and other computer products. They create and market software and related products for mainframe, mini and personal computers for the business, education, government and entertainment markets. Collectively, amici have annual revenues exceeding $92 billion, employ more than 392,000 people worldwide, and expend more than $4.6 billion annually on research and development.

Several of the briefs before this Court argue that the copyright protection adopted by Congress for expression in computer programs should be cut back significantly. They ask this Court to single out computer programs and apply to them different rules and standards than those governing all other literary works. Moreover, they would inject into the analysis of the *copyrightability* of elements of works of authorship the commercial objectives of those who seek to copy such works — a concept alien to copyright jurisprudence. In doing so,

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they ask this Court to repudiate more than a decade of case law on software copyright protection, and two centuries of American copyright doctrine.

In essence, they ask this Court to rewrite the copyright law for computer programs. Two of the briefs filed in this appeal set forth similar lists that purport to list exhaustively the scope of software copyright protection for programs. This quasi-legislative approach echoes the *sui generis* approach to software protection considered and rejected by Congress. We respectfully urge this Court to reject it as well.

Both the software industry and the public have been well served by the copyright framework mandated by Congress: full protection for computer programs under the same principles as for other literary works. United States software producers compete with each other and with a vast number of firms of all sizes throughout the world in the global market-place for software. Competition flourishes in this industry under the prevailing standards of copyright protection.

Indeed, many of the "established" names in the software industry of the United States have sprung into being only in the past ten to fifteen years, indicative of the phenomenal industry growth that intellectual property protection has stimulated. Consumers of computer programs have reaped the rewards of rapid innovation and intense domestic and international competition. This vigorous competition in the industry and the resulting benefits to consumers contrast sharply with the dire conjectures in the briefs of the amici supporting Appellant Borland International, Inc. ("Borland").

SUMMARY OF ARGUMENT

It is the manifest intent of Congress that computer programs are literary works protected by copyright. Congress recognized that, like other works of authorship, computer programs are highly creative works meriting copyright protection. Consequently, Congress mandated that the same principles that guide courts in the application of copyright to traditional works of authorship should apply with no greater or lesser force to computer programs. Among these principles is the axiom that nonliteral elements of expression in a work are protectible. Courts, including the district court in this case,[1] have implemented this mandate of Congress by applying traditional copyright principles to computer programs to protect nonliteral elements of expression, including expression in a program's user interface.

The wisdom of Congress' decision to grant computer programs full membership in the family of literary works has been borne out by the experience of the software industry over the past fifteen years. Under the existing regime of legal protection for computer programs, the computer software industry is vibrant, innovative and highly competitive. But it is also highly reliant on the continued existence of assured effective copyright protection to protect its enormous investment in creativity. Without the protection mandated by Congress, this key sector of our nation's economy could suffer irrevocable damage.

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[1]   See *Lotus Development Corp. v. Borland Int'l, Inc.*, 788 F. Supp. 78 (D. Mass. 1992) (*"Borland I"*); *Lotus Development Corp. v. Borland Int'l, Inc.*, 799 F. Supp. 203 (D. Mass. 1992) (*"Borland II"*); *Lotus Development Corp. v. Borland Int'l, Inc.*, 831 F. Supp. 202 (D. Mass 1993) (*"Borland III"*); *Lotus Development Corp. v. Borland Int'l, Inc.*, 831 F. Supp. 223 (D. Mass. 1993) (*"Borland IV"*).

We respectfully urge this Court to reject the various arguments made in this case advocating a set of special restrictive rules for the protection of computer programs, and instead to affirm the application of traditional copyright doctrine by the court below.

ARGUMENT

I.   **This Court Should Not Adopt a Radical and Unwarranted Departure from the Mandate of Congress, As Some Have Urged**

Each of the briefs filed in support of Borland has set forth a prescription for software protection that is at odds with that of the Congress and with most courts. The narrow view of copyright protection for computer programs that is urged on this Court would exclude from protection most nonliteral expression in computer programs, would protect a program's user interface only if it is "aesthetic," and would deny protection for any elements of expression that a copyright defendant claims it needed to copy to make its program "compatible." Even a cursory look at the legislative history of the Copyright Act and the software copyright decisions of the past two decades demonstrates that these views are well out of the mainstream of software copyright jurisprudence, and violate general copyright principles and the will of Congress.

A.   **Congress Mandated that Computer Programs Are Literary Works Under the Copyright Act and Are To Be Protected As Such.**

In its 1976 general revision of United States copyright law, Congress confirmed that computer programs *are* literary works, and are to be protected as such under the statute:

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The term "literary works" does not connote any criterion of literary merit or qualitative value: it includes catalogs, directories, and similar factual, reference, or instructional works and compilations of data. It also includes computer data bases, and computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves.

H.R. Rep. No. 1476, 94th Cong., 2d Sess. 54, reprinted in 1976 U.S.C.C.A.N. 5659, 5667 ("House Report").[2] Congress reaffirmed this mandate after it received the recommendations of the President's National Commission on New Technological Uses of Copyrighted Works ("CONTU") in 1978.[3]

In its Final Report, CONTU recommended that Congress continue to protect computer programs under copyright law. Final Report of the National Commission on New Technological Uses of Copyrighted Works, 11 (1978) ("CONTU Report"). Congress adopted CONTU's legislative proposals as the Computer Software Amendments of 1980, Pub. L. No. 96-517, 94 Stat. 3015, 3028 (1980).[4] Thus, Congress confirmed that computer

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[2] Computer programs were protected under copyright prior to the 1976 Act. The U.S. Copyright Office had been accepting computer programs for registration under the 1909 Act since the early 1960s. Programs were classified as "books" — the forerunner to the category of literary works under the current 1976 Act. 1 M. Nimmer & D. Nimmer, Nimmer on Copyright § 2.04[C] (1993) ("Nimmer").

[3] CONTU was constituted in 1975 to formulate recommendations regarding the impact of new technologies on copyright law. In addition to examining copyright protection for computer programs, CONTU also studied issues concerning database protection and issues arising from widespread availability of photocopying technology.

[4] CONTU proposed the addition of a definition of "computer program," 17 U.S.C. § 101 (definition of "computer program"), the repeal of the then-existing version of 17 U.S.C. § 117, and the adoption of the current section of the same number. Congress made only one substantive revision to CONTU's recommendations. While CONTU recommended that the exceptions under § 117 apply to a "rightful possessor" of a copy of a computer program, CONTU Report at 12, Congress made them applicable only to "an owner" of a copy of a program.

programs are entitled to the same protection, and are subject to the same general copyright principles, as all other literary works. House Report at 57. As the late Professor Melville B. Nimmer, Vice Chairman of CONTU, and the foremost authority of his generation on our nation's copyright laws, has stated:

> The 1980 statutory amendment, which Congress enacted on our recommendation, clarified that the scope of protection for computer programs was, with the exception of the provision of § 117 discussed above, the same generally as for all other categories of copyrighted works.

> CONTU did not recommend, and did not intend, any change in the continuing applicability to programs of general copyright principles — e.g., as to the copyrightability and infringement — in effect following the enactment of the general revision of the Copyright Act in 1976. The general copyright principles applicable to programs have been, and remain, those which are applicable to novels, plays, directories, dictionaries, textbooks, musical works, maps, motion pictures, sound recordings and other categories of works.

Declaration of Professor Melville B. Nimmer ("Nimmer Declaration") ¶¶ 11, 12, *reprinted in* Anthony L. Clapes, Patrick Lynch & Mark R. Steinberg, *Silicon Epics and Binary Bards: Determining the Proper Scope of Copyright Protection for Computer Programs*, 34 UCLA L. Rev. 1493, 1587-88 (1987).

B.   Courts Have Implemented Congress' Mandate

1.   All Types and Embodiments of Computer Programs are Protected by Copyright

The courts have clearly held that all types and embodiments of computer programs are protectible under the copyright law. Copyright protects computer programs in both source code, readable by humans, and object code, intended primarily to be read by machines. *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1249 (3d Cir.

1983), *cert. dismissed*, 464 U.S. 1033 (1984); *Williams Electronics, Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 876-77 (3d Cir. 1982); *Apple Computer, Inc. v. Formula International, Inc.*, 562 F. Supp. 775, 779 (C.D. Cal. 1983), *aff'd*, 725 F.2d 521 (9th Cir. 1984). Embodiment of a computer program in machine-readable read-only-memory (ROM) does not render it in any way unprotectible. *Apple v. Franklin*, 714 F.2d at 1249; *Apple v. Formula*, 562 F. Supp. at 779; *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741, 749-52 (N.D. Ill. 1983). Both operating systems and applications programs are protectible, *Apple v. Franklin*, 714 F.2d at 1251-52; *Apple Computer, Inc. v. Formula International, Inc.*, 725 F.2d 521, 524-25 (9th Cir. 1984); *Apple v. Formula*, 562 F. Supp. at 781-82, as is microcode, the programming that controls the internal functions of a microprocessor chip. *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q.2d (BNA) 1177, 1178 (N.D. Cal. 1989).

Courts have soundly rejected the notion that a computer program's utilitarian nature bars the program's *expression* from copyright protection, *see* House Report at 54; *Apple v. Franklin*, 714 F.2d at 1251-52; *Williams*, 685 F.2d at 876; *Apple v. Formula*, 562 F. Supp. at 781, 784, or that a program's expression must be communicated to the user in order for it to be protectible. *Apple v. Formula*, 725 F.2d at 524-25. To the contrary, courts have observed correctly that Congress was well aware of the utilitarian nature of computer programs when it adopted the Copyright Act of 1976 and the 1980 Software Amendments, confirming protection for programs under traditional copyright principles.[5] *Apple v. Franklin*, 714 F.2d at 1251-52. In addition, courts have rejected the contention that a

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[5]   Copyright has always protected expression in utilitarian works. *See infra* note 15.

defendant's mere desire to achieve compatibility is a defense to copyright infringement. *Apple v. Franklin*, 714 F.2d at 1253.

2. Nonliteral Elements of Expression, Including User Interfaces, Are Protected by Copyright

The software copyright cases have also established that nonliteral elements of expression in computer programs are protected under the same principles that protect nonliteral elements of expression in other literary works — and, indeed, in all copyrighted works. The Third Circuit established this basic principle in the context of software in *Whelan Assocs., Inc. v. Jaslow Dental Laboratory, Inc.*: "copyright protection of computer programs may extend beyond the programs' literal code to their structure, sequence, and organization . . . ." 797 F.2d 1222, 1248 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987).

The two other principal Court of Appeals cases that have addressed the issue at length are in accord with *Whelan* on this point. As the Second Circuit stated in *Computer Associates Int'l, Inc. v. Altai, Inc.*, "if the non-literal structures of literary works are protected by copyright; and if computer programs are literary works, as we are told by the legislature; then the non-literal structures of computer programs are protected by copyright." 982 F.2d 693, 702 (2d Cir. 1992). This is nothing more than the application of general copyright principles. *See, e.g., Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d. Cir 1930), *cert. denied*, 282 U.S. 902 (1931).

Recently, in *Gates Rubber Co. v. Bando Chemical Industries, Ltd.*, the Tenth Circuit stated that "*Whelan* is premised upon traditional principles of copyright law, and its conclusion that the structure of a program may be protectable is sound." 9 F.3d 823, 840 (10th Cir. 1993). *See also Johnson Controls, Inc. v. Phoenix Control Systems, Inc.*, 886 F.2d 1173, 1177 (9th Cir. 1989) (holding that nonliteral elements of computer programs "including the structure, sequence and organization and user interface . . . may be protected by copyright where they constitute expression rather than ideas"); *Lotus Development Corp. v. Paperback Software Int'l*, 740 F. Supp. 37 (D. Mass. 1990); Nimmer Declaration at ¶¶ 16, 25, 28 ("CONTU had no views, and made no recommendations which would negate the availability of copyright protection for the detailed design, structure and flow of a program under the copyright principles that make copyright protection available, in appropriate circumstances, for the structure and flow of a novel, a play or a motion picture."); Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer Generated Works: Is Anything New Since CONTU?*, 106 Harv. L. Rev. 977, 1032-34 (1993) (the author was a member of CONTU who served on its software subcommittee) ("Miller"). Cf. *Plains Cotton Cooperative Assoc. v. Goodpasture Computer Serv., Inc.*, 807 F.2d 1256 (5th Cir.), *cert. denied*, 484 U.S. 821 (1987) (court, declining to "embrace" *Whelan*, finds nonliteral elements in plaintiff's program to have been dictated by "externalities of the cotton market," and thus not protectible); *Synercom Technology, Inc. v. University Computing Co.*, 462 F. Supp 1003 (N.D. Tex. 1978) (nonliteral structure of "input formats" not protectible).

C.   To Apply Special Rules to Computer Programs Would Be Contrary to Congressional Intent and the Case Law

1. The A Priori Enumeration of Program Elements Protected by Copyright Has No Basis in Copyright Law

The crabbed view of copyright protection for computer programs that is urged on this Court may be summed up as follows:

> Copyright protects against piratical copying of object code. Copyright protects against appropriation of source code, either literally or by paraphrasing. Copyright protects against the unauthorized reproduction of "certain types of screen displays," that are "copyrighted separately as an audiovisual work." . . . Perhaps, in appropriate circumstances, copyright also protects against copying the detailed "structure" of another's program.

Appellant's Br. at 41 (citation omitted). See also Brief of American Committee for Interoperable Systems ("ACIS Br.") at 16.

That view amounts to a position that copyright protection for computer programs is confined to elements of a program that are not visible to a program user, limited even further to verbatim copying or literal paraphrasing. Only "perhaps," in certain unspecified circumstances, would copyright protect against detailed copying of the nonliteral element of program structure.

This position is incorrect for several reasons.

Nothing in the statute or the case law says that, *a priori*, certain specific program elements are protectible and certain others are not. Nor does anything in the statute or its legislative history suggest that software should receive less protection under copyright than any other type of literary work. To the contrary, Congress mandated that the scope of

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protection for computer programs is determined by applying the traditional idea/expression dichotomy and other general copyright principles. As CONTU put it:

> Where could a meaningful line of demarcation be drawn? Between flow chart and source code? Between source code and object code? At the moment of input into a computer or microprocessor? The Commission believes that none of these is appropriate. The line which must be drawn is between the expression and the idea, between the writing and the process which is described.

CONTU Report at 25. See also House Report at 57; *Apple v. Franklin*, 714 F.2d at 1251-52.

The prescriptive approach that some urge this Court to follow is essentially a *sui generis* regime for software protection. Congress has rejected this approach each time it has acted in the field of computer program protection — in 1976, with the passage of the present Copyright Act; in 1980, with the passage of the Computer Software Amendments, Pub. L. No. 96-517, 94 Stat. 3015, 3028 (1980); and in 1990, with the passage of the Computer Software Rental Amendments, Title VIII, §§ 801-05, of Pub. L. No. 101-650, 104 Stat. 5089, 5134-37 (1990). As recently as December of last year Congress confirmed the protection of computer programs as literary works under copyright by ratifying the North American Free Trade Agreement ("NAFTA") and adopting the NAFTA implementing legislation. Pub. L. No. 103-182 (Dec. 8, 1993). A key provision in the intellectual property chapter of NAFTA commits each of the parties to protect programs under copyright as literary works. NAFTA, Art. 1705(1)(a).

Most other countries that have addressed the issue have also committed themselves to protecting computer programs as literary works under copyright. See, e.g., Council Directive on the Legal Protection of Computer Programs, 91/250/EEC, art. 6, 1991 O.J. (L 122) 42 (directing all members of the European Union to protect computer programs as literary works under copyright).[6]

Every expressive aspect of a computer program, including aspects that can be perceived by a program's user, may be protected by copyright in accordance with general copyright principles as part of a single, unitary work. Although a few commentators, see Brief Amicus Curiae of Profs. Dennis S. Karjala and Peter S. Menell ("Karjala Br.") at 4-6,[7] and courts, see, e.g., *Digital Communications Associates, Inc. v. Softklone Distributing Corp.*, 659 F. Supp. 449, 456 (N.D. Ga. 1987), have considered screen displays as separate works,[8] the better view is that the user interface and screen displays are an integral part of

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[6]   If there were the slightest doubt remaining that world-wide consensus has confirmed that computer programs are literary works protected as such under copyright, the doubt must be dispelled by the adoption of NAFTA, as discussed supra, and the December 15, 1993 agreement of over 100 member nations in the General Agreement on Tariffs and Trade ("GATT") to adopt the Agreement on Trade-Related Intellectual Property Rights, Including Trade in Counterfeit Goods ("TRIPS") (GATT Doc. No. MTN/FA II-A1C). The provisions of TRIPS obligate each member nation to provide literary work protection for software under copyright. TRIPS, Art. 10(1).

[7]   In order to distinguish between the two briefs filed by certain professors we will refer to them by the names of their respective principal authors.

[8]   This may be, in part, because of the existence of a separate audiovisual works category in the statute, 17 U.S.C. § 102(a)(6), which has led some to treat as separate works those aspects of programs that fit under that statutory rubric.

Arguments that a program's user interface is a separate work are rooted in the technology of the 1960s and 1970s, when computer programs had no user interfaces. At the time when CONTU
(continued...)

a computer program. See, e.g., *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982); *M. Kramer Manufacturing Co. v. Andrews*, 783 F.2d 421 (4th Cir. 1986). As the Copyright Office has stated:

> Even accepting that the nature of authorship in screens may be different from computer program code authorship, this does not alter the fact that the computer program code and screen displays are integrally related and ordinarily form a single work. Indeed, those commentators who favor either single or separate registration at the claimant's option must concede that the program code and screens are conceptually a single work.

> In creating copyright subject matter, it is common to merge several different types of authorship to form a single work. Motion pictures are a clear example of a work in which the different creative talents of many contributors (writers, directors, editors, camera persons, etc.) are combined to create a single work.

Registration Decision; Registration and Deposit of Computer Screen Displays, 53 Fed. Reg. 21,817, 21,819 (1988).[9]

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[8]   (...continued)
and the courts first considered analogous questions to those presented in this case, see, e.g., *Synercom Technology, Inc. v. University Computing Co.*, 462 F. Supp. 1003 (N.D. Tex. 1978), the dominant programming paradigm was batch processing: programs executed seriatim, operating on a discrete set of data and producing a discrete output — usually a paper printout or punched cards. Widespread use of interactive software accessed by display terminals came later; graphical user interfaces later still.

From the standpoint of a computer program's intended audience — the end user — the user interface *is* the program. Any user of a computer program would regard as absurd the suggestion that the user interface is something separate from the program itself. It makes as much sense — common and copyright — as saying that a video image is a different work than the motion picture embodied in the videotape.

[9]   The Register's decision is an interpretation of substantive copyright law, notwithstanding its context in a review of the procedural requirements of copyright registration and deposit under the statute.

Finally, the suggestion that the protection of nonliteral elements of expression in a computer program extends only to detailed program structure, and that there may be no protection at all for a program's other nonliteral elements, is clearly wrong. Brief Amicus Curiae of Copyright Law Professors ("Samuelson Br.") at 21; Appellant's Br. at 41. Recent cases have reaffirmed that nonliteral elements of expression in computer programs are protectible by copyright just as they are in all other works. See, e.g., *Gates Rubber*, 9 F.3d at 840; 28 U.S.P.Q.2d (BNA) 1503, 1514 (10th Cir. 1993); *Altai*, 982 F.2d at 702. Included in such protection are nonliteral elements of expression that form part of the "external" aspect of a program. See, e.g., *Paperback*, 740 F. Supp. 37; *Manufacturers Technologies, Inc. v. CAMS, Inc*, 706 F. Supp. 984, 993-94 (D. Conn. 1989); Miller, *supra*, at 1032-34. Cf. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992), cert. denied sub nom. *BB Asset Management, Inc. v. Symantec Corp.*, ___ U.S. ___, 113 S. Ct. 198 (1992) (program externals protectible, but not infringed).

2. There Is No Basis for Applying 17 U.S.C. Section 102(b) and *Baker v. Selden* in a Different Way to Computer Programs than to Other Works

Certain of the amici supporting Borland urge this Court to adopt for computer programs an idea/expression dichotomy quite different from that enunciated by the Supreme Court in *Baker v. Selden*, 101 U.S. 99 (1879), and codified by Congress in 17 U.S.C. § 102(b). See, e.g., Samuelson Br. at 2-11; Karjala Br. at 8-13. See also Appellant's Br. at 33-36, 42-50. They press a much broader view of what is an unprotectible "idea," and a much narrower view of what is protectible "expression" than *Baker* and the statutory

provision support. This distorted view of the idea/expression dichotomy violates the Congressional mandate to protect computer programs under general copyright principles, and distorts the meaning of the statute and the Supreme Court's holding in *Baker*.

Section 102(b) denies copyright protection to "any idea, procedure, process, system, method of operation, concept, principle, or discovery . . . ." By its terms, that provision applies to *all* copyrightable works. Yet some of the amici supporting Borland would lead this Court to believe that Congress adopted Section 102(b) for the sole purpose of limiting protection for computer programs, see, e.g., Samuelson Br. at 3.[10] See also Appellant's Br. at 33-36. Not so. The language immediately following that portion of the House Judiciary Committee Report quoted in Appellant's brief makes clear that Congress was codifying for *all* works the idea/expression dichotomy that has long been applicable to them:

> Section 102(b) in no way enlarges or contracts the scope of copyright protection under the present law. Its purpose is to restate, in the context of the new single Federal system of copyright, that the basic dichotomy between expression and idea remains unchanged.

House Report at 57.[11] It is beyond peradventure that Congress intended Section 102(b) to

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[10]   Even if it were true that "Congress had computer programs in mind" when it adopted § 102(b), Samuelson Br. at 3, what Congress had in mind is not dispositive in determining what Congress *did*. Moreover, it would appear that Congress had all works "in mind," since, by its express terms, § 102(b) applies to any "original work of authorship," without singling out any type or category of work for special treatment. The legislative history of the provision also makes clear that it is a restatement of the idea/expression dichotomy that was an integral part of copyright law long before computer programs existed as a form of expression. House Report at 57.

[11]   When the Copyright Act of 1976 abolished the then dual system of "statutory" copyright and "common law" copyright, and established a unitary federal copyright law, see 17 U.S.C.
(continued...)

apply to all works — without exception, and without special application or construction to computer programs.

Nor does the use of the term "system"[12] to describe elements of a computer program (or any other work) render those elements unprotectible under Section 102(b). See Appellant's Br. at 13; ACIS Br. at 11. The Eighth Circuit disposed of the identical argument with respect to a parts numbering "system":

> [T]he district court's literal application of the section's language — that appellant's parts numbering system is not copyrightable because it is a "system" — cannot stand. All that the idea/expression dichotomy embodied in § 102(b) means in the parts numbering system context is that appellant could not copyright the idea of using numbers to designate replacement parts. Section 102(b) does not answer the question of whether appellant's particular expression of that idea is copyrightable.

Toro Co. v. R & R Prods. Co., 787 F.2d 1208, 1212 (8th Cir. 1986).

For the same reason, reliance on *Baker* is also unavailing. Merely labelling a program element a "system" does not bring it within the ambit of the Court's holding in that case any more than it brings it within the ambit of Section 102(b).

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[11] (...continued)
§ 301(a), it was deemed necessary to clarify for all works what was, and what was not, "within the subject matter of copyright as specified by sections 102 and 103." 17 U.S.C. § 301(a), 301(b)(1).

[12] We question the relevance of a litigant's marketing literature and similar "evidence" to the determination of whether a particular element of its computer program is protectible or not under § 102(b). See Appellant's Br. at 13. This is precisely the type of "word-game argument" that Judge Keeton appropriately condemned in *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 72 (D. Mass. 1990), and that Judge Gray, in *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q.2d (BNA) 1177, 1179 (N.D. Cal. 1989), called a "semi-semantical" argument.

Moreover, any reading of *Baker* as "consign[ing] functional works to a regime of 'thin' protection in order to defend the line of demarcation between patent and copyright law" which places "constituent elements of systems or processes . . . outside the scope of copyright protection," Samuelson Br. at 11, 5, vastly overstates the case. An examination of what the Court actually said in *Baker* is instructive.

The Court held that although copyright gives an author the exclusive right "to print or publish his book, or any material part thereof, as a book intended to convey instruction in the art, any person may practice and use the art itself which he has described and illustrated therein." 101 U.S. at 104. Thus, while Selden's book describing an accounting system was protected, Selden could lay no claim to the accounting system itself.

The Court's analysis began with a determination of what was Selden's "art" and what was his expression. The Appellant seeks to avoid the difficult matter of separating idea or "art" from expression by *defining* anything that it copied as a "system," or the "art" that is expressed in Lotus' program. Appellant's Br. at 13, 42-46. Nothing in *Baker* supports that bootstrap approach. In *Baker*, the court could readily identify Selden's "art" and his description or illustration thereof. The case itself, however, "offers scant guidance on how to separate idea or process from expression, and moreover, on how to further distinguish protectable expression from that expression which 'must necessarily be used as incident to' the work's underlying concept." *Altai*, 982 F.2d at 705 (quoting *Baker*).

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The court below gave extensive, careful consideration to determining which elements of Lotus' programs were ideas, *scènes à faire*, or expression that merged with an underlying idea, and which elements were protectible expression. *Borland I*, 788 F. Supp. at 89-94; *Borland II*, 799 F. Supp. at 209-20; *Borland III*, 831 F. Supp. at 207, 212-17; *Borland IV*, 831 F. Supp. at 229-33. Like most courts that have considered these issues, the district court fashioned a test based on Judge Learned Hand's observation in *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2nd Cir. 1930), about the "patterns of abstraction" that exist within any work. *Paperback*, 740 F. Supp. at 60, cited in *Borland I*, 788 F. Supp. at 89. See also *Gates Rubber*, 9 F.3d at 834; *Altai*, 982 F.2d at 706; Miller, *supra*, at 994-1013. By contrast, the arguments supporting Borland bypass the district court's thoughtful analysis and ask this Court simply to label the copied elements as a "system."

Appellant and the amici supporting a reversal of the decisions below also misread *Baker*'s holding that elements such as illustrations or diagrams that are "necessary incidents to the art" are also unprotected. This is, of course, the seminal statement of the merger doctrine. They endeavor to invoke merger — a doctrine based on necessity — using arguments rooted in commercial expediency. But a copyright defendant's "commercial and competitive objective[s] . . . [do] not enter into the somewhat metaphysical issue of whether particular ideas and expression have merged." *Apple v. Franklin*, 714 F.2d at 1252.

Two related assertions made in this context are likewise invalid: (1) a selection or arrangement of elements (individually protected or not) cannot suffice to make a copyright-able work of authorship, Appellant's Br. at 41-42; and (2) because they can serve a useful

that the unprotectibility of the individual elements that are selected or arranged has any bearing on the protectibility of that selection or arrangement simply ignores the statutory definition of "compilation," and the use of the terms "selection" and "arrangement" therein. It also ignores the explicit statement in 17 U.S.C. § 103(b) that the copyright in a compilation is "independent of . . . any copyright protection in" its constituent materials. See also Nimmer Declaration at ¶16 ("the selection, arrangement and coordination of the elements of a program are also protectible under the traditional copyright principles for protection of compilations").

The other baseless assertion is that computer programs are "useful articles" and should be treated as such. See Samuelson Br. at 14-15 n.23, 22 n.39. Historically and statutorily, the definition of "useful article" in the Copyright Act has relevance only with respect to "pictorial, graphic and sculptural" works. Computer programs are literary works. Computer programs are not articles of any kind — useful or otherwise. To label them as such confuses the basic distinction between a tangible object and the intangible copyrighted work embodied in the tangible object, improperly applying to the latter a doctrine suited to the former. See 17 U.S.C. § 202; Morton David Goldberg and John F. Burleigh, *Copyright Protection for Computer Programs: Is the Sky Falling?*, 17 AIPLA Q.J. 294, 314-21 (1989). Nor is the fact that a work is useful an infirmity from the standpoint of copyright law. Instruction manuals, how-to books, business documents and factual compilations are only a

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[14]   (...continued)
"computer program"). This argument would render computer programs uncopyrightable by definition. Congress intended the diametrically opposite result.

few examples of literary works that may be useful, but are nonetheless protected by copyright.[15]

3. Copyright Protection for Screen Displays and User Interfaces Is Not Limited to "Aesthetic" Features

Computer programs are granted the same copyright protection, subject to the same limitations, as any other copyrightable literary work.[16] Although the user interface of a program serves a function that could be described as utilitarian (i.e., communicating with the user) it does not follow that all aspects of a user interface are *per se* unprotectible. If a computer program contains sufficient original expression (whether or not part of the user interface) that is protectible (e.g., that has not directly or indirectly merged into the underlying idea or function, and does not fall within the *scènes à faire* doctrine), the copying of that significant original expression is an infringement unless, on the facts of the particular case, the copying is excused as a fair use.[17]

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[15] Nimmer at §§ 2.04-2.04[B]. See infra note 18.

[16] See supra, pages 5-10.

[17] Although this brief does not address the fair use questions in this appeal, we note that copying for commercial purposes is very rarely deemed to be a fair use. *Harper & Row Publishers, Inc. v. Nation Enterprises*, 471 U.S. 539, 562 (1985); *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 449, *reh'g denied*, 465 U.S. 1112 (1984). We also note that Borland incorporated elements of Lotus 1-2-3 into its final product. Appellant's Br. at 18. This is unlike the use at issue in *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1522 (9th Cir. 1992), which was held to be a fair use in part because it "was an intermediate one only and thus any commercial 'exploitation' was indirect or derivative."

Nonetheless, several of the briefs filed in this appeal depart from traditional copyright principles by asserting that user interfaces are protectible only to the extent that they are "aesthetic" or demonstrate some "level of artistic endeavor." Appellant's Br. at 46-48; Samuelson Br. at 14-15 n.23. Cf. Karjala Br. at 7 ("Patent law seeks to promote the advancement of technology while copyright law seeks to encourage culture and the arts.");[18] ACIS Br. at 15.

This contradicts one of the most basic tenets of copyright law: only a "minimal degree of creativity" is required for a work to be copyrightable. *Feist*, 499 U.S. at 345. "[T]he requisite level of creativity is extremely low; even a slight amount will suffice. The vast majority of works make the grade quite easily, as they possess some creative spark, 'no matter how crude, humble or obvious' it might be." *Id.* (quoting Nimmer § 1.08[C][1]).

Nearly a century ago, in *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239 (1903) (Holmes, J.), the Supreme Court soundly rejected the notion that copyrightability is premised on artistic merit. Noting that even "a very modest grade of art has in it something irreducible" that may be protected by copyright, *id.* at 250, the Court warned about subjective judgments of aesthetic merit:

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18 The Authors of the Constitution thought otherwise. According to the United States Constitution, the purpose of Copyright is "To promote the Progress of Science" — i.e., "knowledge." U.S. Const. Art. I, § 8, cl. 8. Two of the three categories of works protected under the first U.S. Copyright Act (which was adopted in 1790 by a Congress comprised of many of the drafters of the Constitution) were maps and charts — quintessentially functional works that have little to do with *belles lettres* and the arts.

It would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations, outside of the narrowest and most obvious limits. At the one extreme some works of genius would be sure to miss appreciation. Their very novelty would make them repulsive until the public had learned the new language in which their author spoke. . . . At the other end, copyright would be denied to pictures which appealed to a public less educated than the judge. Yet if they command the interest of any public, they have a commercial value — it would be bold to say that they have not an aesthetic and educational value — and the taste of any public is not to be treated with contempt. . . . That these pictures had their worth and their success is sufficiently shown by the desire to reproduce them without regard to the plaintiff's rights.

188 U.S. at 251-52. See also House Report at 51 (standard of originality adopted by Congress "does not include requirements of novelty, ingenuity, or esthetic merit").

Again, this Court is being urged to employ doctrines that apply to pictorial, graphic, and sculptural works in the context of computer programs. The analogy is inapt.[19] Computer programs are writings that entail enormous creativity. See Anthony Lawrence Clapes, Software, Copyright & Competition 87-93 (1989). The fact that they also express functions does not make it appropriate to apply doctrines developed for categorically distinct works.

4.   **A Copyright Defendant's Compatibility Concerns Have No Bearing on the Copyrightability of Program Elements in the Infringed Work**

Another argument that has been pressed on this Court is that elements of Lotus' user interface should be found uncopyrightable because of "compatibility concerns." Appellant's

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[19]   See supra p. 21.

Br. at 50-54; ACIS Br. at 13-15. Cf. Brief of Amici Curiae Chicago Computer Society, et al. at 10-12 ("Users Group Br."). The specific form of this argument holds that merely because an element of a popular program is required to execute a program written by a user, that element is unprotectible. The broad form of this argument holds that any element of a computer program that in any way affects "compatibility" or "interoperability" with that program is unprotectible. Both forms of this argument fail because they focus on the wrong work: the "need" for the author of an *infringing work* to copy in order to be "compatible" is irrelevant to determining the copyrightability of elements of the *infringed work*.

It is black-letter copyright law that any issue of copyrightability relates only to the *infringed* work. See Nimmer § 13.03[F] ("[A]n allegedly infringed program should be analyzed on several different levels."). See also *Altai*, 982 F.2d at 714. The infringer's motivation for copying (and the copyrightability of the infringing work) have no bearing on the copyrightability of elements of the infringed work.

"Compatibility," in this sense of the word, is a business strategy of the copier. A defendant considers elements of a plaintiff's program to be attractive to its customers, so it copies those elements. This is a far cry from "compatibility" as a technical imperative that limits the range of expression of the author of the infringed work. It is in this latter sense that *Altai* considered "compatibility requirements." The Second Circuit found that "elements dictated by external factors" were unprotectible *scènes à faire*: "[A] programmer's design choice is often circumscribed by extrinsic considerations such as . . . compatibility requirements of other programs with which a program is designed to operate in conjunc-

tion . . ." 982 F.2d at 709-10. The court makes it quite clear that it was examining the infringed work, and the degree to which elements of that work were "dictated by external factors." *Id.* at 714. *See Borland II*, 799 F. Supp at 213. Any self-imposed "constraints" on a subsequent author who wishes to be "compatible," see Users Group Br. at 7-8, are irrelevant. See Nimmer § 13.03 [F][3][e]. Otherwise courts would have to define and redefine the protectibility of elements of an original work by reference to the business objectives of each of the original author's competitors.

II. **Public Policy Does Not Favor the Evisceration of Copyright Protection for Computer Programs**

A.   **Full Copyright Protection for Computer Programs, as Mandated by Congress, Is Essential to the Continued Growth of the Software Industry**

Those who argue that public policy and the realities of the software industry support the claim that computer programs and their user interfaces are entitled only to diminished copyright protection, see, e.g., Karjala Br. at 11-13, 20-21; Users Group Br. at 3-10; ACIS Br. at 13-18, have lost sight of the underlying rationale for copyright protection.

> The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in "Science and useful Arts." Sacrificial days devoted to such creative activities deserve rewards, commensurate with the services rendered.

Mazer v. Stein, 347 U.S. 201, 219 (1954).

In determining whether elements of a work are to be protected by copyright or cast into the public domain, a court must be mindful that the framers of the Constitution intended an exclusive copyright to be a mechanism to improve the public welfare. As the Supreme Court stated in *Harper & Row, Publishers v. Nation Enterprises*, 471 U.S. 539, 545-46 (1985) (quoting *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975)):

> We agree with the Court of Appeals that copyright is intended to increase and not impede the harvest of knowledge. But we believe the Second Circuit gave insufficient deference to the scheme established by the Copyright Act for fostering the original works that provide the seed and substance of this harvest. The rights conferred by copyright are designed to assure contributors to the store of knowledge a fair return for their labors.

The link between incentives to create and the creation of valuable works benefitting the public is even more valid today than when the Constitution was written. Indeed, many works of authorship — motion pictures, sound recordings, and computer programs, to name but a few — require investment of enormous human and financial resources into the creative process. The resulting creative authorship represents, of course, not mere "sweat of the brow" but the very creativity that the economic incentives in the Copyright Act are designed to protect and nurture. Effective copyright protection is essential to provide the incentives to create copyrighted works and bring them to the public.[20]

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[20]   To the extent that the Second Circuit lost sight of those principles in *Altai*, 982 F.2d at 712, it would appear to have been in error.

B. **The Software Industry Is Thriving Under the Current Regime of Full Copyright Protection for Computer Programs**

Whelan, which established that nonliteral elements of computer programs are protected by copyright, was decided in 1986; *Lotus v. Paperback*, from which much of the reasoning in the decisions below was derived, was decided in 1990. These precedents have been the law of their respective jurisdictions, and have influenced the law throughout the country, for several years. See, *Gates Rubber*, 9 F.3d at 840-42. If the dire conjectures of Borland and its supporters had any validity, there would be abundant empirical evidence of substantial industry dislocation. Precisely the opposite is true.

The United States has become the world's premiere software producer under a regime of full protection for computer programs under copyright.[21] By any measure, the software industry is thriving. The industry grew 38% between 1988 and 1992, more than three times the growth in GDP for the same period. ITAA, The U.S. Information Technology Industry: Profile 1992, at I-1—I-3 (1993). Employment in the software industry has risen every year since 1988, the first year for which employment data are available. *Industrial Outlook*, at 27-1. The United States domestic software market is one of the fastest growing sectors in the nation's economy. *Id.* The copyright industries generally, and the software industry in particular, constitute one of the areas in which the United States still maintains a favorable balance of trade with the other nations of the world. S. Siwek & H. Furchtgott-Roth,

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[21]   Estimates are that U.S.-based vendors supplied approximately 74% of the world packaged software market in 1992. U.S. Dept. of Commerce, U.S. Industrial Outlook '94, at 27-5 (1994).

Copyright Industries in the U.S. Economy at D-6 (November 1990).[22] Any fundamental change in copyright protection, as it applies to an industry in which that protection is the principal safeguard of the participants' primary assets, should be approached with great caution.

User interface design represents a substantial investment of creative effort — and a significant portion of the creative development process — for a computer program. Unfortunately, all elements of computer programs are particularly susceptible to unauthorized copying. Excepting this important programming element from protection would thus undermine incentives to create innovative computer programs, especially sophisticated programs that require substantial creative investment.[23]

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[22]   One need not rely on dry statistics to make the point. A quick trip to a software store, or a glance through a catalog or trade journal, is the best indication of the range and diversity of software offerings available in today's marketplace, through the creative efforts of programmers.

[23]   In *Apple Computer, Inc. v. Formula Int'l, Inc.*, 562 F. Supp. 775, 783 (C.D. Cal. 1983), *aff'd*, 725 F.2d 521, (9th Cir. 1984), the court observed:

> "Few companies are going to invest the time and resources to develop new programs if their products can be freely duplicated by anyone. Such 'competitors,' who could undersell the originator simply because they don't have its development costs, would destroy the market which any innovator needs to recoup his investment."

Small software development concerns as well as large ones would suffer, since competitors' copying of computer programs would make venture capital more difficult to obtain.

Nothing about computer programs justifies a special, lesser form of copyright protection for them. For decades, doomsayers have predicted dire consequences if computer programs receive full copyright protection, but they have been wrong.[24] They still are.[25]

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[24] See, e.g., Copyright Law Revision: Hearings on S. 597 Before the Subcommittee on Patents, Trademarks, and Copyrights of the Senate Committee on the Judiclary, 90th Congress, 1st Session 571-73 (1967) (Statement of EDUCOM) ("Broad copyright protection for programs is unwise and improper . . . [H]ad programming been constantly carried out under the threat of infringement actions charging plagiarism of existing copyrighted programs, it is doubtful whether the growth of programs and programming techniques of recent years would have been possible.").

[25] Moreover, it is not the mission of the courts to evaluate such claims, especially when the statute and its intent are clear. See, e.g., Borland I, 788 F. Supp. at 91. We note, however, that the extraordinary progress of the industry validates Congress's decision to confirm full copyright protection for computer programs.
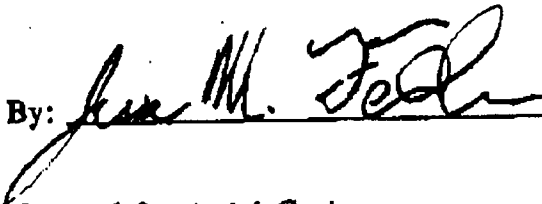
CONCLUSION

As amici curiae we take no position on the factual issues in this case. We urge only that in its analysis this Court apply traditional copyright principles as set forth above.

Dated: January 28, 1994

Respectfully submitted,

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PROOF OF SERVICE BY MAIL

I declare that:

I am employed in the County of New York, New York. I am over the age of eighteen years and not a party to this action. My business address is 1185 Avenue of the Americas, New York, New York. On January 28, 1994 I served the within BRIEF OF AMICI CURIAE APPLE COMPUTER, INC., DIGITAL EQUIPMENT CORPORATION, INTERNATIONAL BUSINESS MACHINES CORPORATION, AND XEROX CORPORATION and MOTION FOR LEAVE TO FILE BRIEF OF AMICI CURIAE APPLE COMPUTER, INC., DIGITAL EQUIPMENT CORPORATION, INTERNATIONAL BUSINESS MACHINES CORPORATION, AND XEROX CORPORATION on the interested parties in this action, by placing a true copy thereof enclosed in a sealed envelope with postage thereon fully prepaid, in the United States mail at New York, New York, addressed as follows:

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I declare under penalty of perjury that the foregoing is true and correct, and that this declaration was executed at New York, New York, this 28th day of January, 1994.

Margaret T. Dudley

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