

الوثائق والنواحي المتعلقة بالنشر التي لها تأثير على أساليب العمل المكتبية. ومن المعايير التي صدرت في هذا المجال ما يلي:



## Z39.50

### زي 39.50

#### معيار تبادل المعلومات رقم Z39.50

معيار أمريكي قومي يحدد البروتوكول المطلوب للكمبيوتر لاسترجاع معلومات من كمبيوتر آخر. وهذا البروتوكول يجعل في إمكان مستخدم الكمبيوتر أن يبحث في ويسترجع المعلومات من كمبيوتر آخر (على شرط أن يستخدم الكمبيوتر الآخر بروتوكول Z39.50) بدون معرفة تركيب لغة البحث التي تستخدمها الأنظمة الأخرى. وهذا المعيار كانت قد وافقت عليه الهيئة القومية لمعايير المعلومات *NISO (National Information Standards Organization)* عام ١٩٨٨. وهو مصمم وفقا لطبقة التطبيقات *application layer* في نظام الربط المفتوح *OSI*. والمقابل الذي اعتمده *ISO* لهذا المعيار يشار إليه *(SR) "ISO Search and Retrieve"*.

وتستخدم المعايير التي تصدر بهذا الرقم في مجال علوم المكتبات والمعلومات وعمليات النشر. وهي تمثل بصفتها الرسمية اتجاه مهنة المكتبات نحو تقنين المفاهيم والمصطلحات والحروف والعلامات والأداء والأساليب في تلك المجالات، فيما يتعلق بإعداد وتجهيز واستخدام

Z39.2-1985	Bibliographic information interchange.
Z39.4-1984	Basic criteria for indexes.
Z39.5-1985	Abbreviation of titles of periodicals.
Z39.9-1992	International Standard Serial Numbering.
Z39.11-1972	(Re-affirmed 1989) System for the Romanization of Japanese.
Z39.12-1972	(Re-affirmed 1989) System for the Romanization of Arabic.
Z39.14-1979	(Re-affirmed 1987) Writing abstracts.
Z39.18-1987	Guidelines for the organization, preparation and production of scientific and technical reports.
Z39.19-1993	Construction, format and management of monolingual thesauri.
Z39.21-1988	Book numbering
Z39.22-1989	Proof corrections.
Z39.23-1990	Standard technical report number (STRN) format and creation.
Z39.41-1990	Printed information on spines.
Z39.43-1993	Standard address numbers for the publishing industry.
Z3944-1986	Serials holdings statements.
Z39.47-1992	Extended Latin alphabet coded character set for bibliographic use.
Z39.48-1992	Permanence of paper for publications and documents in libraries and archives.
Z39.49-1992	Computerized book ordering.
Z39.50-1992	Information retrieval service definition and protocol specification for library applications (version 2).
Z39.53-1987	Codes for the representation of languages for information interchange.
Z39.56-1991	Serial item and contribution identifier (SICI).
Z39.57-1989	Holdings statements for non-serial items.
Z39.58-1992	Common command language for online interactive information retrieval.
Z39.59-1988	Electronic manuscript preparation and markup.
Z39.62-1993	Eye legible information on microfilm leaders and trailers and on containers of processed microfilm on open reels.
Z39.63-1989	Inter-library loan data elements.
Z39.64-1989	East Asian character code for bibliographic use.
Z39.66-1992	Durable hard-cover binding for books.
Z39.67-1993	Software description.

ISO/ANSI/NISO 3166	Country codes
ISO/ANSI/NISO 9660	CD-ROM volume and file structure.
Z39.4	Guidelines for indexes and related information retrieval devices.
Z39.5	Abbreviation of titles of periodicals.
Z39.7	Library statistics.
Z39.69	Record format for patron records.
Z39.70	Format for circulation transactions
Z39.71	Holdings statements for bibliographic items.
Z39.73	Single tier steel bracket library shelving.

### .za

في الإنترنت، مجال جغرافي يشير إلى أن العنوان يقع في أفريقيا الجنوبية *South Africa*.

### zap

### زاب

1. يسمح الملف نهائياً بدون أي أمل في استرجاعه.
2. يتلف الجهاز عن طريق إطلاق كهرباء سستائية خلاله.

### Zatocoding

### تكويد زاتور

نظام للبطاقات المتقبة يستخدم للإنتقاء الآلي للمعلومات. وتستخدم في هذا النظام بطاقات ذات حواف مثلمة وهو من تصميم *Calvin N. Mooers*. وتخصص بطاقة لكل وثيقة ويشار إلى محتواها الموضوعي بثلم على حافتها، وهو ما يسمح بالفرز الآلي باستخدام جهاز *Zator 800 Selector* لمسح الملف واختيار البطاقات المطلوبة.

### Zator

### زاتور

اسم تجاري لنظام من البطاقات التي تستخدم التثليم لتسجيل المعلومات واسترجاعها. وتعد قائمة بالموضوعات ثم تكود عن طريق نمط من الثلمات التي تخصص كل منها لموضوع معين.

See also *Zatocoding*.

### z-axis

### إحداثي ع

إحداثي ثالث في الإحداثيات الديكارتية يمثل العمق بحيث يكون هو والإحداثيين السيني والصادي شكلاً مجسماً ثلاثي الأبعاد.

See also *Cartesian coordinates, x-y-z coordinate system*.

**ZBB** See *zero-based budgeting*.

### ZD Net

### زي دي نت

موقع على الوب مصمم لمستخدمي الكمبيوتر الشخصية حيث يستضيف جماعات مهتمة بالكمبيوتر الشخصي وموضوعات الكمبيوتر التقنية. ويحتوي على الكثير من البرمجيات المجانية. يسمى أيضاً: *ZiffNet*.  
See also *SIG*.

**Zephyr** See *RLG*.

### zepto-

### زبتو

في النظام المتري، سابقة تعني:

$10^{-21}$  (one sextillionth)

(كسر واحد على عشرة أس ٢١).

### zero-based budgeting (ZBB)

### الموازنة الصفرية

نظام في الميزانية، يبرر فيه وجود أي برنامج سواء كان جديداً أو مستمراً فيما يتعلق بفائدته ومقارنته بالبرامج الأخرى في كل فترة جديدة للميزانية وذلك من "نقطة الصفر"، أي بدون أي اقتراضات سابقة، وهو مما يؤدي إلى إعادة ترتيب الأهداف وفحص التكاليف غير الظاهرة.

### zero divide

### القسمة على صفر

عملية قسمة على صفر، وهي عملية غير مسموح بها في الرياضيات. والبرنامج الذي تحدثت به عملية قسمة على صفر يكون به عيب.

**zerofill** See *zeroize*.

**zero growth** See *steady growth*.

### zeroize

### يعادل بالأصفر

يستبدل رموزاً ويضع مكانها نمط من البتات *bit pattern* يمثل "صفراً". يسمى أيضاً: الحشو بالأصفر *zerofill*.

**zero suppression** حذف الأصفار  
حذف الأصفار عديمة الأهمية خلال الطبع.

**zero-wait state** *See wait state.*

**zero width joiner** رابط بعرض صفري

**zero width non-joiner**  
بلا رابط بعرض صفري

**zest** الاستمتاع بالكتابة

**zetta-** زيتا  
في النظام المتري، سابقة تعني:  
 $10^{21}$  (one sextillion)

**z-fold paper** *See fanfold paper.*

**ZiffNet** *See ZD Net.*

**ZIG**  
اختصار *Z39.50 Implementors Group*  
تأسست بالولايات المتحدة عام ١٩٩٠، وهي تتألف من المنتجين والموردين ومقدمي خدمات المعلومات الذين يتناولون معايير *Z39.50* المتعلقة بالبحث في المعلومات واسترجاعها.

*See also Z39.50.*

**zigzag fold** *See concertina fold.*

**ZIG-Z3950 (Z Implementers Group)**  
المجموعة التطبيقية لمعايير *Z39.50*

**zinc etching** حفر على الزنك  
(انظر: *zincography*)

**zinc**  
١. زنكوغراف (راجع: *zincograph*)  
٢. قالب مصنوع من الزنك يستخدم بدل نحاسة التجليد (راجع: *binder's brass*) وهو قليل التحمل والطبعات التي تنتج عنه تنقصها الحدة.

**zinc etching** حفر زنكوغرافي  
(انظر: *zincography*)

**zincograph (zinc)** زنكوغراف  
١. لوح طباعي من الزنك محفور، يستخدم في طباعة صور الكتب والرسوم البيانية المطبوعة بالأبيض والأسود. تسمى طريقة الطباعة بالزنكوغراف *zincography*.

٢. طبعة عن هذا اللوح.

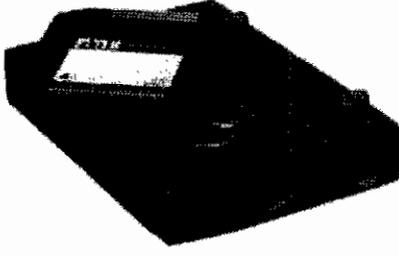
**zincography** حفر زنكوغرافي  
حفر خطوط وشبكات طباعية على لوح من الزنك. يستخدم المصطلح على نطاق واسع في مجال حفر القوالب (الكليشيوات) الخطية أكثر من استخدامه للكليشيوات الشبكية (الهافتونات). يسمى أيضا: *line cut*, *zinc etching*

**zinc oxide paper** ورق أكسيد الزنك  
ورق مغلى بمستحلب من أكسيد الزنك يستخدم في الاستنساخ الالكتروستاتي *electrostatic copying press*

**zincplate litho** *See lithography.*

**.zip**  
امتداد اسم الملف الذي يدل على أن الملف هو ملف أرشيفي مضغوط ويحتوي على ملف أو أكثر وأن الملف قد ضغط بواسطة برمجية *PKZIP*.

**Zip drive**  
محرك أقراص طورته شركة *omega* يستخدم أقراص مقاس 3.5 بوصة يمكن نقله من مكان لمكان وسعته *100 megabytes*. وهناك أيضا محركات يمكنها اختزان *200 megabytes* على القرص الواحد.



External Zip drive

## توزيع زيف Zipfian distribution

التوزيع الزائدي *hyperbolic distribution* للكلمات المستخدمة في مجموعة كبيرة من النصوص، يسجل بيانا باستخدام النسبة المئوية التركيبية لعدد مرات استخدام الكلمات في مقابل النسبة المئوية التركيبية للكلمات التي ساهمت في هذا الاستخدام. مشتق من التحليل الذي أجراه *George K. Zipf* عام ١٩٤٩، والذي وجد فيه أن عددا قليلا نسبيا من الكلمات يتكرر وروده كثيرا وتكون نسبة وروده في النص كبيرة جدا. وقد لاحظ زيف أنه إذا أحصى الكلمات التي ترد في النص ثم نظمها وفقا لمرتبته طبقا لعدد التكرارات. فإن التكرارات تكون متناسبة للتتظيم الرتبتي.

See also Bradford's law.

## قانون زيف Zipf's law

قانون مشهور في القياسات البليومتريية *bibliometrics* يتعلق بتكرار الألفاظ في النصوص. وقد سمي هذا القانون بعد العالم اللغوي *George Kingsley Zipf* (1902-1950).

ويمكن بيان هذا القانون إذا أحصينا عدد تكرار كل كلمة في أحد النصوص، ثم رتبنا الكلمات حسب مراتبها بحيث أن الكلمات التي تتكرر كثيرا ترد في الترتيب أولا. والنصوص المكتوبة باللغة الإنكليزية تتضمن كلمات تتكرر كثيرا باستمرار، مثل: *the, a* أو أي كلمات أخرى ذات معاني سطحية، وبهذا يمكننا التعبير عن قانون زيف بقانونين.

## القانون الأول:

يسمى القانون الأول بقانون زيف للألفاظ عالية التردد. أما درجة علو التردد فتعتمد على النص محل التحليل.

$$r * f = C \quad \text{والقانون الأول:}$$

حيث:

$r$  تكون المرتبة الخاصة بالألفاظ التي تتكرر عدد  $f$  من المرات.

$C$  هي المعلمة *parameter* التي تعتمد على النص الجاري تحليله.

ويذكر زيف

Zipf, G. K. (1949). *Human behavior and the principle of least effort*. Cambridge, MA: Addison Wesley.

أنه وجد علاقة ارتباطية واضحة بين عدد الكلمات المختلفة في كتاب *Ulysses of James Joyce* وتكرار استعمال تلك الكلمات، بمعنى أنها تقارب المعادلة البسيطة للقطع الزائد القائم *equilateral hyperbola*.

فمثلا، في تحليل زيف لنص من *Ulysses*، وردت الكلمة في المرتبة العاشرة ٢٦٥٣ مرة، والكلمة في المرتبة العشرين ١٣١١ مرة.

$$\text{وناتج ضرب } ١٠ * ٢٦٥٣ \text{ هو } ٢٦٥٣٠$$

$$\text{وناتج ضرب } ٢٠ * ١٣١١ \text{ هو } ٢٦٢٢٠$$

وتكون قيمة  $C$  (حوالي ٢٦٠٠٠) ثابتة حتى الكلمة التي تقع في المرتبة الألف، التي تردت ٢٦ مرة. وناتج ضرب

$$٢٦٠٠٠ = ٢٦ * ١٠٠٠$$

## القانون الثاني:

والقانون الثاني لزيف يتعلق بالألفاظ ذات التردد المنخفض. ودرجة الانخفاض تعتمد على النص الجاري تحليله، ولكنها بالتأكيد ستشمل الألفاظ ذات الترددات ١،

٢، ٣، ٤، ٥.

وفي نفس العمل (صفحة ٣٢) يذكر زيف القانون كالاتي:

$$N(f^2 - 1/4) = C$$

حيث:

N هي عدد الألفاظ التي تكررت كل منها f مرة  
C هي معلمة parameter تعتمد على النص الجاري تحليله

وفي المقالة التالية،

Booth, A. D. (1967). A "law" of occurrences for words of low frequency. *Information and Control*, 10, 386-393.

ورد قانون زيف في الصيغة التالية:

$$\frac{I_n}{I_1} = \frac{3}{4n^2 - 1}$$

حيث:

$I_n$  هي عدد الألفاظ التي تكررت n مرة  
 $I_1$  هي عدد الألفاظ التي تكررت مرة واحدة

**zip pan** See whip pan.

**zirconium lamp** مصباح زركونيوم

مصباح خاص ذو شدة إضاءة عالية يستعمل كمصدر للطاقة الإشعاعية في التصوير الفوتوغرافي.

**.zm**

في الإنترنت، مجال جغرافي يشير إلى أن العنوان يقع في زامبيا Zambia.

**Zmodem** زي مودم

بروتوكول مشهور في إرسال الملفات يشبه Xmodem and Ymodem، ولكنه مصمم لإرسال كميات ضخمة من البيانات بمعدل أخطاء منخفض. ويتميز بأنه إذا حدثت مقاطعة أثناء الإرسال، فإن الإرسال يستمر من حيث توقف بعد استعادة الإرسال.

See also Xmodem, Ymodem.

**zone** See Bradford's zone.

**zone librarian** مراقب مكتبات فرعية

مكتبي مسؤول عن مجموعة من المكتبات الفرعية التي تقوم احداها بحفظ مجموعة كاملة من المواد المكتبية (كتب للكبار والصغار ومجموعة من المراجع واسطوانات وأشرطة وكاسيتات). أما المكتبات الأخرى التي يصل عددها إلى ثلاثة أو أربعة فروع فإنها تقدم خدمات بسيطة وأقل مما تقدمه المكتبة الكبيرة.

**zone library** مكتبة مركزية صغيرة

مكتبة مركزية تقدم خدمة مكتبية كاملة، كما تشرف على عدد من المكتبات القريبة الصغيرة وتمدها بالموارد المكتبية.

**zone punch** تثقيب خارجي

تثقيب في خارج المنطقة المخصصة له، أي على الاسطر ٠، ١١، ١٢.

**zoning** التقسيم إلى مناطق

**zoom** تكبير/تصغير

**zoom in/out** زوم للداخل/للخارج

**zoom lens** عدسة تزويم

عدسة ذات بعد بؤري يتغير باستمرار بين حدين معينين. وهي تسمح للصورة البصرية بأن تتغير في الحجم بدون الحاجة إلى ضبط بؤري جديد وهي تستخدم في تصوير المشاهد القريبة والبعيدة. ويخيل للمشاهد الذي يراها على الشاشة، أن الكامرا تحركت إلى الأمام أو إلى الخلف بسرعة لتقترب أو تبتعد عن موضوع التصوير، والحقيقة أنها لم تتحرك من مكانها.

**zoom microphone** ميكروفون زوم

## zoomographic initial

حرف استهلاكي حيواني الشكل

حروف استهلاكية وجدت في بعض المخطوطات  
المزينة ذات أشكال حيوانية.

.zr

في الإنترنت، مجال جغرافي يشير إلى أن العنوان يقع  
في زائير *Zaire*.

## Z-score

درجة - Z

في الإحصاء، قيمة درجة في مجموعة من الدرجات  
يعبر عنها بعدد الانحرافات القياسية (راجع: *standard deviation*)  
أعلى من أو أقل من المتوسط. وعند تحويل  
مجموعة من الدرجات الأولية *raw scores* إلى درجات -  
Z فإن الوسط الحسابي *mean* لهذه الدرجات القياسية  
يساوي صفراً، وأن انحرافها القياسي يساوي 1.  
وتسمى القيمة  $Z_i$  درجة قياسية إذا كانت تساوي:

$$Z_i = \frac{y_i - \bar{y}}{s}$$

حيث:  $y_i$  = الدرجات الأولية

$\bar{y}$  = الوسط الحسابي

$s$  = الانحراف القياسي

**Zurich Index** See *Concilium Bibliographicum*.

## Appendix A

## Abbreviations and Symbols

## المختصرات والرموز

-	minus sign; hyphen
#	pound sign; crosshatch; octothorpe
\$	dollar sign
%	percent sign
&	ampersand; and
Å	angstrom
( )	parentheses; round brackets
éd.	édition
*	asterisk
*.*	star-dot-star
/	slash
?	question mark
@	at sign
[ ]	square brackets
\	backslash
_	underscore mark
{ }	braces; curly brackets
	vertical bar; pipe
+	plus sign
<>	less than/greater than or angle brackets
=	equal sign
105mm	105 millimeter
1f	lower operating frequency
2B1Q	two binary, one quaternary
2CS	two carrier system
2D	two dimensional
2f	higher operating frequency
3-D graphic	three dimensional graphic
3D	three dimensional
3DP	three dimensional printing
3PM	three-position modulation
4GL	fourth-generation language
8°	octavo
8mm	film size 8 millimeter

## A

A	accumulator; alto
a	annual
A.B.	Artium Baccalaureus
a.c.	alternating current
A.C.	alternating current; ante Christum
A.C.S.	autograph card signed
A.C.T.	Australian Capital Territory
A.D.S.	autograph document signed
a.e.g.	all edges gilt
A.H.	Anno Hegirae; After Hegira
A.L.S.	autograph letter signed
A.N.S.	autograph note signed
A.R.	aspect ratio
a/c	alternating current
A/D	analog to digital
A/UX	Apple unix
AA	auto answer
AAAS	American Association for the Advancement of Science
AACR	Anglo-American Cataloguing Rules.
aa's	author's alterations
AAD	analog analog digital
AAL	American Association of Law Libraries; Association of Assistant Librarians; ATM Adaptation Layer
AALS	Association of American Library Schools.
AAP	Association of American Publishers, Inc.
AASL	American Association of School Librarians (ALA division)
AAT	average access time
ABC	automatic brightness control
Abdr.	abdruck
ABIC	adaptive bilevel image compression
ABIOS	Advanced Basic Input/Output System
ABR	automatic baud rate
abr.	abridged
ABT	advanced board technology
Abt.	Abteilung; Abtheilung
ABTAPL	Association of British Theological and Philosophical Libraries.
AC	accumulator; alternating current; author's correction
AC/DC	alternating current/direct current
ACA	Association of Canadian Archivists.
ACC	ACCumulator
acc.	accompaniment
acc. mat	accompanying material
ACCH	associated control channel
ACD	automatic call distribution
ACDI	asynchronous communications device interface

ACF	Advanced Communications Function	ADPVM	adaptive delta pulse code modulation
ACIA	Asynchronous Communications Interface Adapter	ADR	automatic dialogue replacement
ACID	Atomicity, Consistency, Isolation, and Durability	ADRM	analog/digital re-master
ACK	ACKnowledgement	ADSL	Asymmetrical Digital Subscriber Line;
ACL	access control list;		asymmetric digital subscriber loop
ACM	Association for Computing Machinery.	ADSR	attack, decay, sustain and release
ACNDC	Advanced Communication Network Development Center Inc.	ADSTAR	automatic document storage and retrieval system
ACNDC	Advanced Communication Network Development Center Inc.	ADT	asynchronous data transfer
ACPA	Association of Computer Programmer and Analysts	AE	application entity
ACR	achromatic color removal and replacement;	AEC	automatic editing control
	automatic carriage return	AED	automatic error detection
ACRL	Association of College and Research Libraries (ALA division)	AES	Audio Engineering Society (USA)
ACS	access control system;	AF, A.F., a.f.	audio frequency
	Advanced Communications Service;	AFC	automatic frequency control
	alternate channel suppression	afd	afdeling
ACSE	Association Control Service Element	AFE	Apple file exchange
ACSI	Association Canadienne des Sciences de l'Information.	AFF	audio file format
ACT	ACcumulator. Temporary	afl.	aflivering
ACTS	Advanced Communication Technologies and Services	AFLICIO	American Federation of Labor/Congress of Industrial Organizations
A-D	analog-to-digital	AFP	Advance Function Printing;
AD, A.D.	Anno Domini (in the year of our Lord)		AppleTalk Filing Protocol
ADA	advanced design aids;	AFS	Andrew File System
	analog to digital to analog	AG	average gradient
ADAPT	Advanced Display Attribute Programming Tool	AGA	advanced graphics adapter
ADB	Apple desktop bus	AGC	automatic gain control
ADC	analog-to-digital converter;	AGREP	AGRicultural Research Project
	analog-to-digital conversion;	AGV	automatically guided vehicles
	automatic device control	AHI	antihalation incoat
ADCCP	Advanced Data Communications Control Procedure	AHU	antihalation incoat undercoat
ADD	analog digital digital	AI	artificial intelligenc
add.	additional	AIB	asynchronous interface board
ADE	Advanced Interactive Exccutive	AIMS	auto indexing mass storage
ADI	American Documentation Institute.	AIO	Asynchronous Input/output
ADIC	Advanced Digital Information Corporation	AIP	average instructions per second
ADL	asymmetrical digital subscriber line	AIPLA	American Intellectual Property Law Association
ADMA	advanced direct memory access	AIS	automated imaging systems
ADO	ampex digital optics	AIST	Agency of Industrial Science and Technology
ADP	Automatic Data Processing	AIX	Advanced Interactive eXcutive
ADPCM	adaptive differential pulse code modulation	AKA	also known as
ADPD	automatic display power down	AL	artificial language
adpt.	adapted	ALA	American Library Association
		Ala.	Alabama
		ALC	automatic level control;
			automatic light compensation
		ALCTS	Association for Library Collections & Technical Services (ALA division)
		ALGOL	ALGOrithmic Language
		ALPAC	Automatic Language Processing Advisory Committec
		ALR	Advanced Logic Research Inc.
		ALS	Automatic Light Switching

ALSC	Association for Library Service to Children (ALA division)	APM	Advanced Power Management
Alt.	Alternate; altitude	APNSS	analog private network signaling system
ALTA	American Library Trustee Association (ALA division)	APP	automatic picture replacement
Alta.	Alberta	app.	appendix; application
alu, ALL	Arithmetic Logic Unit	APPC	Advanced Program-to-Program Communication
ALVIN	autonomous land vehicle in a neural network	APPN	Advanced Peer-to-Peer Networking
AM	amplitude modulation; automated mapping	Apr.	April
AMD	Advanced Micro Devices Co.	APSS	automatic program search system
Amer.	America; American	APT	automatic picture transmission; Automatic Programmed Tool
AMH	application message handler	AQL	acceptable quality level
AMI	access method interface; American Megatrends Inc. ; American Microsystems Inc.	AR	Arkansas; automatic reverse
AMP	ampere	ARCnet	Attached Resources Computing Network
AMPS	Advanced Mobile Phone Service; automatic music program search	ARDIS	Advanced National Radio Data Service
AMS	access method services	arg.	argang; argument
an.	anuario	Ariz.	Arizona
AN/UYSK	Army Navy/Universal digital computer	Ark.	Arkansas
anal.	analysis: analyzed; Analytic	ARLL	advanced run-length limited encoding
ANCOVA	analysis of covariance	ARM	advanced RISC machine; asynchronous response mode
ANDES	architecture with non-sequential dynamic execution schedule	AROM	alterable read only memory
ANI	automatic number identification	ARP	Address Resolution Protocol
ANN	Artificial Neural Network	ARPA	Advanced Research Projects Agency
ann.	Annals; annuaire	ARPANET	Advanced Research Projects Agency Network
anniv.	anniversary	ARQ	Automatic ReQuest
annot.	annotated	arr.	Arranged
anon.	anonymous	ARRIP	Australian Rural Reserach in Progress
ANOVA	analysis of variance	ART	Automatic Recognition Technology
ANRS	automatic noise reduction system	art.	article
ANS	advanced network & services	ARU	audio response unit
ANSI	American National Standards Institute	ARVIS	alternate reality vision system
ANSI/SPARC	American National Standards Institute/Standards Planning and Requirements Committee	AS3AP	ANSI SQL Standard Scalable and Portable
anthol.	anthology	ASA	Acoustical Society of America; American Standards Association (Replaced by ANSI)
anthropol.	anthropology; anthropological	ASCAP	American Society of Composers, Authors and Publishers
AO	analog output	ASCC	Automatic sequence controlled calculator
AOC	advice of charge	ASCII	American Standard Code for Information Interchange
AOC-D	advice of charge - during call	ASCLA	Association of Specialized and Cooperative Library Associations (ALA division)
AOC-E	advice of charge - end of call	ASD	Adult Service Division
AOC-S	advice of charge - at call set-up time	ASF	assignable square feet
AOCE	Apple Open Collaborative Environment	ASI	American Society of Indexers; automated system initialization; Applied Systems Institute
AOL	America Online	ASIC	application-specific integrated circuit
AOQ	average outgoing quality	ASIS	American Society for Information Science
AP, Ap	author's proof	ASL	automatic stereo level
APA	all points addressable	ASM	assembler
APCUG	Association of PC User Groups		
APD	auto power down		
API	application program interface		
APL	A Programming Language		
APLD	automatic program locate device		





CAN	controller area network	CCP	certificate in computer programming;
Can.	Canada; Canadian		communication control program;
CANARIE	Canadian Network for the Advancement of Research	CCS7	configuration control program
Cap	Capital ( letter )	common channel signaling no. 7	
cap	capital; capitol	CCTV	computer controlled television;
CAP	computer-aided publishing		closed circuit TV
caps	Capitals	CCU	camera control unit;
CaPSL	Canon Printing System Language		central control unit
CapsLock	capital lock key	CCW	counterclockwise
CAPTAIN	character and pattern telephone access information network system	CD	call deflection; carrier detect;
CAR	computer-assisted retrieval		change directory;
CAS	Column Address Strobe; communicating application specification	CDC	compact disc
CASE	computer-aided software engineering		Call Directing Code;
CASS	conditional access subsystem	CD-DA	Control Data Corporation
CAT	computer-aided testing; computer-aided translation; computer assisted telephony; computer assisted teaching; computer-assisted typesetting; computerized axial tomography	CDDI	Compact Disc Digital Audio
cat.	catalog(ue)	CD-E	Copper Distributed Data Interface
CATV	CABle TeleVision; Community antenna television; computer-aided TV	CD-E	compact disc-erasable
CAV	component analog video; constant angular velocity	CDE	control and display equipment
CAVE	computer-assisted visual education	CD-I	Compact Disk-Interactive
CAX	community automatic exchange	CDL	compiler description language
CBASIC	Compiled BASIC	CDMA	code division multiple access
CBIOS	Compatibility Basic Input/Output System	CDP	certificate in data processing; corporate document production
CBL	computer-based learning	CDPD	Cellular Digital Packet Data
CBM	Commodore Business Machines	CDFP	composed document printing facility
CBMS	computer based messaging system	CD-PROM	Compact Disk Programmable Read-Only Memory
CBR	constant bit rate	CDR	CD-ROM drive
CBT	computer-based training	CD-R	CD Recordable
CBX	computerized branch exchange	CD-ROM	compact disc read-only memory
CC	Colon Classification; colour compensating; compact cassette	CD-ROM/XA	CD-ROM Extended Architecture
cc	cubic centimeters	CDS	Cell Directory Service; Computerised Documentation Service;
CCA	common communication adapter		control data set
CCC	Central Classification Committee	CD-S	compact disc-single
CCCC	colour calibration, communication and control	CDTM	compressed time division multiplex
CCD	central control desk; charge-coupled device	CDTP	colour diffusion transfer paper
CCDM	charge-coupled device memory	CDTV	Commodore dynamic total vision
CC filter	colour compensating filter	CD-WO	compact disc-write once
CCI	computer-controlled instruction	CD-WORM	compact disc-write once read many
CCIR	Comite Consultatif International des	CDV	Compact Disc Video
CCITT	ComitJ Consultatif Internationale de TJlJphonic et de TJlJgraphie; (Consultative Committee International for Telegraph and Telephone communication)	CE	correctable error; channel-end; concurrent engineering
		CECP	country extended code page
		CED	Capacitance Electronic Disc
		CEGL	cause-effect graph language
		CEL	corporation for entertainment and learning
		CEN	Comite Europeen de Normalisation
		CENELEC	Comite Europeen de Normalisation Electrotechnique
		cent.	century
		CENTREX	central exchange
		Centrex	CENTRAL EXchange
		CEPS	color electronic prepress system
		CEPT	Conference European Post and Telecommunication
		CERC	computer entry and readout control
		CERDIP	CERamic Dual-In-line Package

CERT	Computer Emergency Response Team	CLV	constant linear velocity
cf.	confer; comper	cm	centimeter
CFB	call forwarding busy	CMC	common mails calls: Communication Machinery Corporation
CFNR	call forwarding no reply	CMI	computer-managed instruction
CFU	call forwarding unconditional	CMIP	Common Management Information Protocol
CG	computer graphics	CMIP/CMIS	Common Management Information Protocol Services
CGA	Color Graphics Adapter	CMIS	Common Management Information Service
CGB	convert gray to binary	CMISE	Common Management Information Service Element
CGI	computer graphics interface	CML	Current Mode Logic
CGM	computer graphics metafile	CMM	colour matching methods
CGRP	compound file element group chunk	CMOD	customer-must-order-direct
ch(s)	chapter(s)	CMOS	complementary metal-oxide semiconductor
chap.	chapter	CMP	Communications Plenum Cable
Chin.	China; Chinese	CMR	Common Mode Rejection
CHIO	channel input/output	CMRR	Common Mode Rejection Ratio
CHKDSK	Check Disk	CMS	Conversational Monitor System
CHKVOL	Check Volume	CMY	Cyan, Magenta, and Yellow
CIA	computerized image analysis	CMYK	cyan, magenta, yellow and black
cic	cicero	CNA	Certified NetWare Administrator
CICP	communication interrupt control program	CNE	Certified NetWare Engineer
CICS	Customer Information Control System	CNEPA	Certified NetWare Engineer Professional Association
CID	communication identifier; connection identifier	CNI	Certified NetWare Instructor
CIDB	International Council for Building Documentation	CNS	Corporate Network Server
CIE	Commission Internationale de l'Eclairage	CO	Central Office; Colorado
CIF	common intermediate format	Co.	company
CIFA	communications interface	COA	certificate of authenticity
CIM	computer input microfilm; computer-integrated manufacturing	coax	coaxial cable
CINAHL	Cumulative Index to Nursing & Allied Health Literature	COBOL	Common Business-Oriented Language
CIOC	central input/output control	CODASYL	Conference on DATA SYstems Languages
CIP.	Cataloguing in publication	codd.	codices
CIR	Committed Information Rate	CODEC	COder-DECoder: coding and decoding; compressor/decompressor
CIS	card information structure; Cataloguing in Source	COGO	COordinate GeOMetry
CISC	complex instruction set computer	coll.	college; collection; collector
CIT	computer intergrated telephony	Colo.	Colorado
CIU	computer interface unit	COLP	connected line identification presentation
cl	centilitre	COLR	eonneted line identification restriction
Cl	colour index; computer interconnect; component interface	COM	Command; Communication Port; computer output management; computer-output-microfilm; common object model
CLASP	connecting link for applications and source peripherals	COMARC	Cooperative MARC
CLB	communication services local block	COMDEX	COMMunications and Data Processing Exposition; computer dealer expo
CLI	command line interpreter; compression labs inc.; calling line identification		
CLIB	C Library; calling line identification presentation		
CLIR	calling line identification restriction		
CLK	CLock		
CLNP	Connectionless Network Protocol		
CLS	clear screen		
CLTP	Connectionless Transport Protocol		
CLUT	colour look-up table		

comp.	compilation; compiler; complimentary copy; composite	CRIS	Current Research Information System
compar.	comparative	CRISC	complex/reduced instruction set computer
COMSEC	communications security	crit.	criticism; critical
CON	console	CRL	Communication Research Laboratory
CONF	add-on conference call	CRLF	carriage return linefeed
conf.	conference	CRM	Communications Resource Manager
Cong.	Congress	CROM	Control Read Only Memory
Conn.	Connecticut	CRP	channel request priority;
CONS	Connection Mode Network Service		configuration report program.
CONSER	Cooperative CONVersion of SERials	CRT	cathode-ray tube
cont.	continued	CRTC	Cathode-Ray Tube Controller
contemp.	contemporary	CS	Chip Select;
contrib.	contribution		communication services;
CONTU	Commission on New Technological Uses of Copyrighted Works		current state
CORBA	Common Object Request Broker Architecture	CSCW	computer-supported cooperative work
CORDIS	COMmunity R&D Information Service	CSD	Corrective Service Disk
CORGA	common object request broker architecture	CSIRO	Commonwealth Scientific and Industrial Research Organization
Corp.	corporation	CSMA	Carrier Sense Multiple Access
corr.	correction	CSMA/CA	Carrier-Sense Multiple Access/Collision Avoidance
COS	consumer operating system; Corporation for Open Systems	CSMA/CD	Carrier Sense Multiple Access/Collision Detection
COSE	Common Open Software Environment	CSS	communications service satellite; Complete Statistical System; Continuous System Simulation
COW	Character-oriented Windows (interface)	CSTA	computer supported telephony applications
CP/M	Computer Program Management; Control Program for Microcomputers	CSU	channel service unit; customer setup
CPE	customer premises equipment	CSU/DSU	channel service unit/data service unit
CPF	cold pressure fusing	CSV	Common Separated Value
cph	characters per hour	CT	call transfer; Connecticut; continuous tone;
CPI	characters per inch		cordless telephone
cpm	characters per minute	CTC	channel-to-channel
CPM	critical path method	CTCA	channel-to-channel adapter
cpp	characters per pica	CTF	consumer transaction facility
CPQN	clocks per quarter note (equivalent to PPQN)	CTI	color transient improvement; computer telephone integration
cps	characters per second; cycles per second	CTOC	compound file table of contents; Convergent technologies operating system
CPS	Conversational Programming System		control
CPT	color picture tube	Ctrl	control
CPU	central processing unit	CTS	cartridge tape subsystem; Clear to Send; computer typesetting system
CR	carriage return; Corporate Resellers		Close up
CRADA	Cooperative Research and Development Agreement	cu	close up; Control Unit
CRAM	Card Random Access Mechanism or Method	CU	close up; Control Unit
CRC	Communications Riser Cable; cyclic redundancy check(ing); carriage return character; camera-ready copy	cu ft	cubic foot
CREN	Corporation for Research and Educational Networking	cu in	cubic inch
CREOL	Center for Research in Electro-Optics and Lasers	cu yd	cubic yard
		CUA	Common User Access; part of IBM SAA
		CUG	closed user group
		CUI	Character User Interface
		CUTS	Cassette User Tape System
		CVBS	color video blanking synchronisation

CVD	Compact Video Disc
CVO	commercial vehicle operations systems
CW	call waiting; Control Word
cycl.	cyclopedia
Czech.	Czechoslovakia; Czechoslovakian

## D

D	Data line; density
d.	died
D.C.	District of Columbia
D.F.	Distrito Federal
d.s.	document signed
d.w.	dust wrapper
D/A	digital to analog
D/T	disk/tape
D2B	domestic digital bus
D-A	digital-to-analog converter
da	deca
DA	desk accessory; distribution amplifier
DAA	Data Access Arrangement
DAB	digital audio broadcasting
DAC	digital-to-analog converter; dual attachment concentrator
DACS	Digital Access Cross-Connect Switch
DAF	Display Attribute Files
dal	decaliter
dam	decameter
DAMA	Demand Assigned Multiple Access
DAP	Directory Access Protocol
DARPA	Defense Advanced Research Projects Agency
DAS	Data Acquisition System; dual-attached station
DASD	direct access storage device
DAT	digital audio tape
DATV	digital assisted television
DAV	Data AVailable
DB	database
dB, db	decibel
DBA	database administrator
DBC	decimal-to-binary conversion
DBF	database file
DBMS	database management system
DBP	deutsche Bundespost
DBS	direct broadcast satellite
DC	Decimal Classification; direct access; District of Columbia
Dc, D.C., d.c., d/c	Direct current; double column; double crown; double cap
D-channel	data channel
DCA	Document Content Architecture; Digital Computer Associates
DCB	disk coprocessor board
DCC	data communications channel; digital compact cassette; digital cross connect

DCD	data carrier detected
DCE	Data Circuit Terminating Equipment; data communications equipment; distributed computing environment; data country code
DCF	data communication function
DCI	display control interface
DCM	Data Communication Multiplexor
DCP	digital contour processor
DCS	desktop color separation; digital camera system
DCT	discrete cosine transform; digital component technology
DCT-SQ	discrete cosine transform-scalar quantization
DCTL	direct-coupled transistor logic
DD	data dictionary; device driver; Double Density
DDA	digital differential analyzer
DDBMS	distributed database management system
DDC	Dewey Decimal Classification; Distance Delivery Consortium
DDCMP	Digital Data Communications Message Protocol
DDD	direct distance dialing; digital digital digital
DDE	Dynamic Data Exchange
DDES	digital data exchange specifications; digital data exchange standard
DDI	direct dialing in
DDK	Device Driver Kit; driver development kit
DDL	data description language; data definition language
DDLC	Data Description Language Committee
DDP	Datagram Delivery Protocol; distributed data processing
DDPP	direct digital printing plate
DDS	data description specifications; Digital Data Service; Digital Data Storage; Dataphone Digital
DDT	Digital Equipment Corporation software debugging program
DDX	digital data exchange
DE	Delaware
DEC	Digital Equipment Corporation
Dec.	December
DECdns	DEC distributed name service
DECmcc	DEC management control center
DECT	digital European cordless telephone
DEL	DElete (character)
Del.	Delaware
dele	delete
DELTA	Developing of European Learning through Technological Advance
dept.	department
DES	Data Encryption Standard; digital editing system
DESC	Defence Electronics Supply Center

DesCAF	design-controlled automated fabrication	DMAC	direct memory access controller
descr.	description: descriptive	DMD	deformable mirror device
DESRA	Defense Supercomputing Research Alliance	DME	distributed computing environment; distributed management environment
DFB-laser	distributed-feedback laser	DME	Distributed Management Environmen
DFC	data flow chart; data flow control	DMI	Desktop Management Interface
DFD	data flow diagram	DML	database management language; data manipulation language
DFP	design for profitability	DMM	Digital Multi-Meter
DFR	Double Frequency Recording	DM-M	delay modulation, mark
dg	decigramme	DMN	digital multimedia network
DGIS	direct graphics interface specification	DMOS	double-diffused metal-oxide semiconductor
DGT	Data Graphics Toolkit	DM-S	delay modulation, space
DHCP	Dynamic Host Configuration Protocol	DMSD	digital multistandard decoding
dia	diapositive	DMTF	Desktop Management Task Force
DIA	document interchange architecture	DMUX	demultiplexer
diagr(s).	diagram(s)	DMX	demultiplexing
DIANE	direct information access network for Europe	DN-1	Datanet 1
DIB	device-independent bitmap	DNA	DEC Network Architecture
dicc.	diccionario	DNI	Desktop Network Interface (Token Ring adapter card)
dict.	dictionary	DNIC	data network identification code
DID	direct inward dialing	DNS	Distributed Naming Service; Domain Name Service; Domain Naming System; dynamic noise suppression
DIF	data-interchange format; document interchange format; document interchange facility	do.	ditto
Digicipher	digital television compression and transmission system	DoC	Department of Commerce
Digital	Digital Equipment Corporation	DOC	documentation
DIN	Deutsches Institut für Normalization; Deutsche Industrie Norm	doc.	document; documentary
DIP	dual in-line package	DoD	Department of Defense
DIR	Directory	DOD	drop on demand
direct.	directory	DoE	Department of Energy
DIS	document information system	DOE	Distributed Objects Everywhere
dis.	distributing	DOMF	Distributed Object Management Facili
DISC	disconnect	DOMS	Distributed Object Management Systeme
discog.	discography	DOR	Digital Optical Recording
DISOSS	Distributed Office Supported System	DOS	Disk Operating System
diss.	dissertation(s)	DOSX	DOS Extender
DISW	data link switching	DP	data processing
DIX	Digital Equipment, Intel, and Xerox Ethernet standard	DPCM	differential pulse-code modulation
D-max	densilty, maximum	DPDT	Double Pole Double Throw
D-min	densilty, minimum	dpi	dots per inch
DJ	dust jacket	dpl	dots per line
dl	deciliter	dpm	documents per minute
DLA	data link adapter; direct line attachment	DPM	Double Panel Meter
DLC	Data Link Control; High-level Data Link Control	DPMI	DOS protected mode interface
DLCI	Data Link Connection Identifier	DPMS	display-power management system; DOS protected mode services
DLE	Data Link Escape	DPNSS	digital private network signaling system
DLL	data link layer; Dynamic Link Library	DPR	digital player recorder
dm	decimeter	DPSK	differential phase-shift keying; Digital Phase Shift Keying
DM	desktop manufacturing; delay modulation	DPST	Double Pole Single Throw
DMA	Defense Mapping Agency; direct memory access	dpt	dioptré
		DPU	display processing unit
		DQDB	Distributed Queue Dual Bus

DR density ratio; data rate  
 DRA Data Research Associates  
 DRAM dynamic RAM  
 DRAW direct read-after write  
 DRC data recording control  
 DRD data recording device  
 DRDA Distributed Relational Database Architecture  
 DR-DOS Digital Research Disk Operating System  
 DRO destructive read  
 DS digital signal; digital service; distant shot; Double Side  
 DS/DD Double Sided/Double Density  
 DS/ED Double Sided/Enhanced Density  
 DS/HD Double Sided/High Density  
 DS/ND Double Sided/Normal Density  
 DSA Distributed System Architecture  
 DSAP destination service access point;  
 DSD data set definition; data structure diagram  
 DSI digital speech interpolation  
 DSOM Distributed System Object Model  
 DSP digital signal processor; digital sound processor; display system protocol  
 DSPU downstream physical unit  
 DSR Data Set Ready; digital satellite radio  
 DSS digital signature standard; Distributed Security Service  
 DSSI digital storage system interconnect  
 DSSSL document style semantics and specification language  
 DST digital storage technology; data services task; dedicated service tools  
 DSU/CSU data service unit/channel service unit  
 DSV digital sum variation  
 DT diffusion transfer; dynamic tracking  
 DTC dynamic tape tension control  
 DTE data terminal equipment  
 DTF document type definition  
 DTI desktop imaging  
 DTL diode-transistor logic  
 DTM digital terrain model; Touch-tone dialing system  
 DTMF dual tone multiple frequency  
 DTP Desktop Publishing  
 DTR data terminal ready; data transfer rate  
 DTS DeskTop Server; Distributed Time Service  
 DTV desktop video  
 DUT Device Under Test  
 DV-I digital video-interactive  
 DVC digital video cartridge  
 DVD direct view display  
 DVE digital video effects  
 DVR digital video recording

DVST direct view storage tube  
 DVTR digital videotape recorder  
 DVX digital voice exchange  
 DXC digital cross connect  
 DXF data exchange format; drawing interchange format.

## E

E emulsion; enable  
 E & G educational and general expenditures  
 E notation floating-point notation  
 E time execution time  
 e. east; eastern  
 E. exa-  
 E.A.M. electronic accounting machine card  
 e.g. exempli gratia (Latin: for example)  
 E.S. engine-sized  
 EA Electronic Array  
 EAN European article numbering  
 EAPRON electrically alterable programmable read-only memory  
 EARN European Academic Research Network  
 EAROM electrically alterable read-only memory  
 EAU erase all unprotected  
 EAV end of active video  
 EAX electronic automatic exchange  
 EB. exabyte  
 EBCDIC Extended Binary Coded Decimal Interchange Code  
 Ebeam electron beam  
 EBONE European Backbone  
 EBR electronic beam recorder  
 EBU European Broadcast Union  
 EC European Commission  
 ECB event control block; electronic codebook  
 ECC error checking and correcting; error correction code  
 ECD error correction decoder  
 ECHO European Community Host Organization  
 ECIS European Centre for Infrastructure  
 ECITC European Committee for IT&T Testing and Certification  
 ECL emitter-coupled logic  
 ECM Electronic Counter Measures  
 ECMA European Computer Manufacturers' Association  
 ECQAC Electronic Components Quality Assurance Committee  
 ECS European communications satellite  
 ECSA Exchange Carriers Standards Association  
 ECT explicit call transfer  
 ECU extreme close up  
 ed. edited; edition; editor  
 EDAC error detection and correction

EDC	error detection code	EOB	End Of Block
EDCB	Enhanced Disk Coprocessor Board	EOC	End Of Character; End Of Conversion
EDDC	Extended Distance Data Cable	eod	every other day
EDH	error detection and handling	EOF	end-of-file
EDI	electronic data interchange	EOJ	end-of-job
EDIF	electronic design interchange format	EOL	end of line
EDIFACT	electronic data interchange for administration commerce and transport	EOP	end of page
edit.	edited; edition; editor	EOR	Electro-Optical Reconnaissance; end-of run; Exclusive OR; XOR
EDL	edit decision list	EOT	the end-of-transmission character; end-of-tape marker
EDP	electronic data processing	EPA	Environmental Protection Agency
EDQ	Extended Distance Quit Cable	EPBX	electronic private branch exchallge
educ.	education	EPC	electronic page composition
EEMS	Enhanced Expanded Memory Specification	epi	characters per inch
EEPROM	electrically erasable programmable read-only memory	epi	characters per line
EFI	Electronics For Imaging	EPLD	erasable programmable read only memory
EFL	Emitter-Follower Logic	EPM	electronic photocomposing machine
EPF	electronic field production	EPOS	European PTT open learning service
EFT	electronic funds transfer	EPP	Enhanced Parallel Port
EGA	Enhanced Graphics Adapter	EPRI	Electric Power Research Institute
EGCS	extended graphic character set	EPROM	erasable programmable read-only memory
EGP	Exterior Gateway Protocols	EPS	Encapsulated PostScript
egs	centimeter-gramme-second	EPSCOR	Experimental Program to Stimulate Competitive Research
EHF	extremely high frequency	EPF	Encapsulated PostScript file
EHLAPI	Emulator High-Level Language Application Programming Interface	EPSS	electronic performance support system
EHT	extremely high tension	EQ	equalization
EI	external interrupt	ER	error recovery (procedures)
EIA	Electronics Industries Association	ERI	Enhanced Referential Integrity
EIS	executive information system	ERIC	Educational Resources Information Center
EISA	Enhanced Industry Standard Architecture	ERMES	European radio messaging system
EIU	Economist Intelligence Unit	ERR	Error
EIUF	European ISDN users' forum	ERTI	European Round Table of Industrialists
ELD	electro-luminescent display	ESA	European Space Agency
ELF	extremely low-frequency (emission)	ESC	escape character
ELINT	ELectronic INTelligence	ESCON	Enterprise System Connections
ELS	enterprise library services	ESD	electronic software distribution; electrostatic discharge
ELS NetWare	Entry Level System NetWare	ESDI	Enhanced Small Device Interface
e-mail	electronic mail	ES-IS	End System-to-Intermediate System ro
EMB	Extended Memory Block	ESL	electronic software licensing
EMC	cye movement camera	ESP	electronic still picture; Emulation Sensing Processor
EMF	electromotive force	esp.	especially
EMI	electromagnetic interference	ESPRIT	European Strategic Program for Research Information Technology
EMM	expanded memory manager	ESRI	European Systems Research Institute
EMS	Expanded Memory Specification	ESS	electronic still store
encycl.	encyclopedia	EST	Eastern standard time
ENG	electronic news gathering	ESTV	Enhanced Definition Television
Eng.	England; English	E-to-B	emulsion-to-base
Engl.	English		
ENIAC	electronic numerical integrator and calculator		
enl.	enlarged		
ENQ	ENquiry control character		
E-NRZ	enhanced nonreturn to zero		
ENS	European nervous system		
ENV	environment		

E-to-E	electronics-to-elect emulsion	FCC	Federal Communications Commission;
ET	exchange termination		function class code;
et al.	et alii		fiber channel standard;
et seq	et sequens		Federal Communications Council
et seqq.	et sequentes;	FCCSET	Federal Coordinating Council for Science, Engineering and Technology
	& the following ones;		flux changes per inch
	et sequentia;	fci	flux change length
	& those that follow	FCS	frame check sequence;
etc	et cetera		function control sequence;
ETL	electrotechnical laboratory		fiber channel standard
ETNO	European Telecom Network Operators	FD	floppy disk;
ETP	End of Transmission Block		full duplex
ETR	European technical report	FDC	floppy disk controller
ETS	European telecommunication system;	FDD	floppy disk drive
	European telecommunications standard	FDDI	Fiber Distributed Data Interface
ETSI	European Telecommunications Standard Institute	FDM	frequency-division multiplexing
ETU	Emulation Transfer Utility	FDP	field-developed program
ETV	educational television	FDX	full duplex
ETX	end-of-text	FE	Framing Error
EUTELSAT	European Telecommunication Satellite Organisation	Feb.	February
EVE	European videotelephony experiment	FED	field emission display;
EW	Electronic Warfare		Research and Development Association for Future Electron Devices
EXCA	exchangable card architecture	fed.	federal; federation
EXE	executable file	FEP	front-end processor
EXP	expand	FET	field-effect transistor
		FF	fast forward; female-female;
			flip-flop; form feed
		FFS	flash file system;
			floating foil security
		FFT	fast Fourier transform;
			Final Format Text
		FFTDCA	Final-Form-Text DCA
		FG's	Folded gathered sheets
		FHWA	Federal Highway Administration
		FIAP	Federation Internationale de Archives du Film
		fict.	fiction
		FID	International Federation for Documentation
		FIF	fractal image format
		FIFO	first in, first out
		filmog.	filmography
		FILO	first in, last out
		filol.	filologia; filologia
		filos.	filosofia; filosofia
		Fin.	Finland; Finnish
		FIPS	Federal Information Processing Standards
		FIT	International Federation of Translators
		FITS	functional interpolating transformational systems
		fjg	figure
		FL	Florida
		fl.	floures; flourished
		FL.	Floureit; Flourished

## F

F	Fahrenheit; Female; Function
F key	function key
F-8	Fairchild's 8-bit microprocessor
f.	farad; following
f.p.m.	feet per minute
f.p.s.	frames per second
F/V	Frequency to Voltage Converter
Fac.	Facsimile
fac.	faculty
FACE	framed access command environment
facsim.	facsimile
FAMOS	Floating gate Avalanche Metal-Oxide Semiconductor
FAMT	fully automatic machine translation
FAQ	frequently asked questions
fasc.	fascicule
FAT	file allocation table
FAX: fax	facsimile
FAX4	facsimile group 4
FBIS	Foreign Broadcast Information Service
FBS	Fallback Switch
FC	full color
FCB	file control block

Fla.	Florida
FLC	ferro-electric liquid crystal
flexo	flexography
FLOP	floating-point operations
FLOPS	floating-point operations per second
FM	facility management; frequency modulation; frequency multiplexing
FM encoding	frequency modulation encoding
FMV	full-motion video
Indtn.	foundation
fo.	folio
fol.	folio
foll.	followed
FOV	Film-based Optical Videodisc
FP	floating point
FPD	full-page display
FPGA	Field Programmable Gate Array
FPH	freephone supplementary service
tpi	frames per inch
FPLA	field programmable logic array
FPLMTS	future public land mobile telephone services
FPLS	Field Programmable Logic Sequencer
fpm	feet per minute
FPO	for position only
FPP	Floating Point Package
fps	feet per second; frames per second
FPU	floating point unit
Fr., fr.	frame; France; French
FRAM	ferric RAM
FRG	Federal Republic of Germany (West Germany)
fri	flux reversals per inch
FRM	form
front.	frontispiece
fs	femtosecond
FS	File Separator
Fs.	facsimile
FSC	Full Scale range
FSK	frequency shift keying
FSN	full service network
FSS	fixed satellite service
FST	fast square tube
FT	file transfer; flow time
ft.	foot, or feet
FT2	fixed thermal transfer
FTAM	File Transfer Access and Management
FTC	fractal transform compression
FTD	fluorescent tube display
FTE	full-time equivalent
FTP	file transfer program; File Transfer Protocol; folded, trimmed and packed (books)
FTS	favourite track selection
FTSA	fault tolerant systems architecture

FTTH	fiber-to-the-home
FTTO	fiber-to-the-office
FTTZ	fiber-to-the-zone
fwd.	foreword
FX	effects
FYI	for your information

## G

G	giga- (1 billion); gauss
G&E	exchange department
g.t., g.t.e.	gilt top
GA; Ga.	Georgia
GaAs	gallium arsenide
GASP	graphic application subroutine package
GATER	guide to acquisition in technology and emerging research
GATT	General Agreement on Tariffs and Trade
Gb	gigabit
GB	gigabyte
Gb/s	gigabit per second
GBU	graphics business unit
GC	graphics context
GCR	gray component removal or replacement; group character recording; group coded recording
GDA	Global Directory Agent
GDDM	graphical data display manager
GDF	graphics data file
GDI	graphics device interface
GDP	graphic draw primitives
GDR	German Democratic Republic (East Germany)
GDS	graphic design system; Global Directory Service
GDU	graphical display unit
GDV	graphic deflection vector
GE	general electric; greater than or equal to
GEM	graphical environment manager
gen.	general
GENie	General Electric Network for Information Exchange
genlocking	generator lock
Ger.	Germany; German
Gesell.	Gesellschaft
GHz	gigahertz
GI	General Instruments (manufacturer)
GIF	Graphics Interchange Format
GIGO	garbage in, garbage out
GIP	graphic interactive processing
gips	giga instructions per seconds
GIS	geographic information system
Gk.	Greek
GKD	Gordon-Kendall-Davison (notation)

GKRS	Graphic Knowledge Retrieval System
GKS	Graphical Kernel System
GM	general MIDI
GMD	general material designation
GML	generalized markup language
GND	ground
GOCA	graphic object content architecture
GOCO	government-owned, contractor-operated
GOGO	government-owned, government-operated
GOSIP	Government Open Systems Interconnection Profile
govt.	government
GP	general purpose; graphics processor
GPF	general protection fault
GPG	graphics program generator
GPGS	general purpose graphic system
GPI	graphics programming interface; general purpose interface
GPIB	general purpose interface bus
GPO, G.O.P.	Government Printing Office (U.S.)
GPS	graphic programming services; global positioning system
GPSS	General Purpose Systems Simulator
GRACE	Graphic Arts Composing Equipment
GRASP	graphic system for online plotting
GS	graphics standard; General MIDI Mode Specification; general synthesizer
GSF	gross space fact
GSM	groupe speciale mobile
GSS	graphics symbol set
GT	greater than
GTF	generalized trace facility
GUI	graphical user interface

## H

H	henry; hexadecimal; huc
h	hecto
H&J	hyphenation and justification
H.P.	hot pressed
h.t.	half title
H-sync	horizontal synchronization signal
ha	hectare
HAMT	hllman aided machine translation
HAR	highway advisory radio
HBA	host bus adapter
HCSS	High Capacity Storage System
HD	high density; half duplex; hard disk
HDBMS	hierarchical database management system

HDCD	high density compact disc
HDD	hard disk drive
HDDR	high density digital recording
HDLC	High-level Data Link Control
HD-MAC	high definition-multiplexed analog components
HDSL	High-bit-rate Digital Subscriber Line
HDTR	high density tape recorder
HDTV	high-definition television
HDX	half-duplex
HEA	Higher Education Act
HEAT	Help Desk Expert Automation Tool
Heb.	Hebrew
hex	hexadecimal
HF	high frequency
HFPT	host front end processor
HFS	Hierarchical File System
HFT	host file transfer
hg	hectogramme
HGC	Hercules Graphics Card
Hi-Fi; HIFI	high fidelity
Hi8	high-band 8 mm
HIPPI	High Performance Parallel Interface
HiRes	high resolution
hist.	history; historical
HIT	human interface technology
HI	Hawaii
hl	hectoliter
HLL	High-Level Language
HLLAPI	High-Level Language Application Programming Interface
HLS	hue, luminance and saturation; hue-lightness-saturation
hm	hectometer
HMA	high memory area
HMD	head mounted display
HMI	Hub Management Interface
HMM	Hidden Markov Model
HMOS	high density MOS
HMS	hours, minutes and seconds
HMSO.	Her (His) Majesty's Stationary Office (UK)
H.M.S.O.	Office (UK)
HOL	High-Order Language
HOLD	call on hold
HP	Hewlett-Packard Company
HPCCP	high performance computing and communication program
HPCN	high performance computing and networking
HPCS	high performance computing systems
HPFS	High Performance File System
HPGL	Hewlett-Packard Graphics Language; plotter files created by AutoCAD
HPIB	Hewlett-Packard Interface Bus
HPPCL	Hewlett-Packard Printer Control Language
HPPI	high performance parallel interface
HQ	high quality

hr	high reduction	IASL	International Association of School Librarianship
hr.	hour	IATUL	International Association of Technological University Libraries
HRAF	Human Relations Area File	IAYF	information at your fingertips
HS	high speed	Ib.	ibidem
HSA	high speed adapter	IBBY	International Board on Books for Young People
HSAC	high speed analog computer	IBC	inside back cover
HSB	heu saturation-brightness	IBCN	integrated broadband communications network
HSD	high speed data	IBG	interblock gap
HSDB	Hazardous Substance Data Bank	ibid.	ibidem
HSDL	high speed data line	IBM	International Business Machines Corporation
HSELINE	Health & Drug Information Library. The	IBM XA	IBM extended architecture
HSG	High Sierra Group	IBY	International Book Year
HSI	hue saturation intensity	IC	integrated circuit
HSL	hue, saturation and luminance	ICA	integrated communications adapter; International Communication Association;
HSM	hierarchical storage management		International Council on Archives
HSP	high speed printer	ICAR	Inventory of Canadian Agri-Food Research
HSR	high speed reader	ICC	International Children's Center
HSSI	High-Speed Serial Interface	ICCM	International Council of Museums
HSV	heu-saturation-value	ICCP	International Conference on Cataloging Principles
HSYNC	Horizontal SYNChronization	ICDA	integrated cached disk array
HT	half-tone; half total	ICE	In-Circuit Emulation
HTL	High Threshold Logic	ICG	interactive computer graphics
HTML	Hypertext Markup Language	ICIS	International Copyright Information Center
HTTP	Hypertext Transport Protocol	ICLAE	International Council of Library Association Executives
Hung.	Hungary; Hungarian	ICLG	International and Comparative Librarianship Group
HWD	hight-width-depth	ICMP	Internet Control Message Protocol
HYP	hyphen	ICOM	International Council of Museums
Hz.	Hertz	ICOMP	Intel comparative microprocessor performance index
		ICON	image converter
		ICOT	Institute for New Generation Computer Technology
		ICR	intelligent character recognition
		ICRSC	International Council for Research in the Sociology of Cooperation
		ICSSD	International Committee for Social Sciences Documentation
		ICSU	International Council of Scientific Unions
		ICU	image converter unit; interactive chart utility
		ID	Idaho; user identification; identifier;
		Id.	idem
		IDA	integrated digital access; Intelligent Drive Array
		IDAC	Intelligent Drive Array Controller
		IDAPI	Independent Database Application Programming Interface

## I

I	integrated
I&R	information and referral service
i.e.	id est (Latin: that is)
I/O	input/output
I <sup>2</sup> L	integrated injection logic
IA	integrated adapter; Iowa
IAALD	International Association of Agricultural Librarians and Documentalists
IAB	Internet Architecture Board
IAC	Information Access Corporation; er-application communication
IACODLA	International Advisory Committee on Documentation Libraries and Archives
IAL	international algebraic language
IALL	International Association of Law Libraries
IAMCR	International Association for Mass Communication Research
IAML	International Association of Music Libraries
IAOL	International Association of Orientalist Librarians
IAS	immediate access storage
IASA	International Association of Sound Archives

IDC	International Documentation Center	Ill.	Illinois
IDE	integrated development environment; integrated drive electronics	ill.	illustrated; illustration; illustrator
IDF	interactive data facility	illus.	illustrated; illustration; illustrator
IDL	intruder detection/lockout	ILO	International Labor Organization
IDN	integrated digital network	IM	imaging model; intermodulation
IDN1	integrated digital network 1*64 kbit/s	IMA	International Multimedia Association; Interactive Multimedia Association;
IDN30	integrated digital network 30*64 kbit/s	IMAGE	International MIDI Association Integrated Mapping and Geographic Encoding
IDOS	image display operating system	IMAP	Internet Message Access Protocol
IDP	integrated data processing	IMC	integrated multiplexer channel
IDPIA	integrated document production architecture	IMCE	International Meeting of Cataloging Experts
IDRP	Interdomain Routing Protocol	IMD	intermodulation distortion
IDS	image distribution system; Integrated Design Strategies Inc.	IMIS	integrated management information system
IDTV	improved definition television	IMM	integrated memory module
IE	information environment	IMP	Interface Message Processor
IEAB	Internacia Esperanto Asociode Bibliotekistoj (International Association for Esperanto Speaking Librarians)	IMPACT	Information Market Policy Actions
IEC	International Electrotechnical Commission	IMS	information management system; intelligent manufacturing system; interactive multimedia services
IEEE	Institute of Electrical and Electronics Engineers (USA)	IN	Interface Management System
IEN	individualized electronic newspaper	IN	Indiana; intelligent network
IERE	Institute of Electrical and Radio Engineers (UK)	in.	inch
IET	Image Enhancement Technology	Inc.	Incorporated
IETF	Internet Engineering Task Force	INCIRS	International Communication Information Retrieval System
IFEN	intercompany file exchange network	incl.	includes; including
IFIP	International Federation of Information Processing	Ind.	Indiana; Industry and Education
IFIS	International Food Information Service	INFOTERM	International Information Center for Terminology
IFLA	International Federation of Library Associations	INGRES	interactive graphics and retrieval system
ifr	inches per flux reversal	INIS	International Nuclear Information System
IFS	interactive filesharing; installable file system	init	initialization program
IFT	ink film thickness	INMARSAT	International Maritime Satellite organization
IGDS	interactive graphic design system	INS	insert
IGES	Initial Graphics Exchange Specification	INSPEC	International Information Services for the Physics and Engineering Communities
IGS	interactive graphics software; interactive graphics system	inst.	instant; institute; institution
IHE	Inherited Rights Filter	INT	interrupt(ion)
IHF	image handling facility	INTAMEL	International Association of Metropolitan City Libraries
IIA	Information Interchange Architecture	Intel	Integrated Electronics
III	integrated injection logic; interlibrary loan	internat.	international
IIPRC	International Intellectual Property Rights Committee	internet	internetwork
IIT	information and instructional technology	introd.	introduction; introductory
IL	Illinois	INTUG	International Telecommunications Users Group
		IOC	input/output channel
		IOCS	input/output control system
		IOCTL	input/output control

IONL	Internal Organization of the Network Layer	ISBD	International Standard for Bibliographic Description
IOS	input/output system	ISBN	International Standard Book Number
IP	image processor; intelligent peripheral; Internet Protocol	ISCC	Inter-Society Colour Council
IPA	International Pharmaceutical Abstracts; international phonetic alphabet; International Publishers Association	ISCED	International Standard Classification of Education
IPC	interprocess communication	ISDN	Integrated Services Digital Network
IPCS	interactive problem control system	ISDN-UP	isdn-user part
IPF	image processing format; image processing facility	ISDN2	isdn-connection 2b+d
IPG	interactive presentation graphics	ISDN30	isdn-connection 30b+d
iph	impressions per hour	ISDS	International Serials Data System
IPL	initial program load	ISFL	International Scientific Film Library
IPLS	instant program location system	IS-IS	Intermediate System-to-Intermediate System Routing
IPMS	interpersonal messaging system	ISI	Information Storage Inc.: Institute for Scientific Information;
IPng	Internet Protocol new generatic)n	ISIS	Intersymbol Interface Integrated Set of Informayion Systems;
IPP	in-plant printing	ISIS	Intel System Implementation Supervisor
IPR	intellectual property rights	ISM	Intra System Matrix
IPS	image processing system	ISMD	International Standard Matcriagraphic Description
ips.	inches per second	ISMEC	Information Services in Mechanical Engineering
IPSS	instant program search system	ISO	International Organization for Standardization (often incorrectly identified as International Standards Organization)
IPX	Internetwork Packet eXchange	ISO 9660	CD-ROM standard 9660 adopted by the International Organization for Standardization
IPX/SPX	Internetwork Packet eXchange/Sequenced Packet Exchange	ISO/OSI	International Organization for Standardization/Open System Interconnection Model
IPXODI	Internetwork Packet eXchange/Open Datalink Interface	ISODOC	International Information Center for Standards in Information and Documentation
IR	information retrieval; infrared; instruction register	ISORID	International Information System on Research in Documentation
IRC	Internet Relay Chat	ISPF	interactive system productivity facility
IRD	information resource dictionary	ISPICS	International Standardized Profile Implementation-Conformance Statement
IRDA	infrared data association	ISR	image storage and retrieval
IRF	Inherited Rights Filter	ISS	image symbol set
IRG	inter-record gap	iss.	issue
IRGB	Intensity Red Green Blue	ISSN	international standard serial number
IRI	Industrial Research Institute	ist.	istituto
IRIG	Inter-Range Instrumentation Group	ISV	independent software vendor
IRIS	Integrated Risk Information System	I-TIME	instruction time
IRLA	International Research Libraries Association	I-time	instruction time
IRM	information resource management; Inherited Rights Mask		
IRQ	interrupt request lines		
IRS	International Referral System; interrecord-separator character		
IRTF	Internet Research Task Force		
IS	information system; Intermediate System		
ISA	Industry-Standard Architecture		
ISAD	Information Science and Automation Division		
ISAM	indexed sequential access method		

IT	image technology; information technology
It.	Italy; Italian
ital.	italic
ITFS	instructional Television fixed service
ITSC	International Technical Support Center
ITSEC	information technology security evaluation criteria
ITT	International Telephone and Telegraph
ITU	International Telecommunications Union
ITV	instructional television; interactive television
IV	interactive video
IVD	interactive videodisc
IVHS	intelligent vehicle-highway systems
IVR	interactive voice response
IVS	interactive videodisc system
I-way	information highway
IWF	inter working function
IWPS	infowindow presentation system
IX	index register

## J

J	Jump Instruction
JAN	Joint Army Navy
Jan.	January
JANET	Joint Academic Network
Jap.	Japan; Japanese
JAWS	Jamming And Warning System
JCL	job control language
JCMA	Japan Construction Mechanisation Association
JEIDA	Japan Electronic Industry Development Association
JES	Japanese Engineering Standards
JESSI	Joint European Submicron Silicon Initiative
JFIF	JPEG interchange file format
Jhrb.	Jahrbuch
JICST	Japan Information Center for Science and Technology
JIPDEC	Japan Information Processing Development Center
JIT	just in time
JMSC	Japan Midi Standards Council
jour.	journal
JPEG	Joint Photographic Experts Group
JPS	Japan Society for the Promotion of Science
JSIMM	Japan Society of Industrial Machinery Manufacturers
JSMR	Japan shared mobile radio
JTAG	Joint Test Action Group
JTEC	Japanese Technology Evaluation Center
JTM	job transfer and manipulation

## K

K	Kelvin; kilo- (1000 or 1024)
K.C.	Kyle Classification
KAI	Kurzweil Applied Intelligence
Kan.	Kansas
Kat	Katalog
Kb	kilobit
KB	kilobyte
Kb/i	kilobits per inch
Kb/s	kilobit per second
Kbit	kilobit
Kbps	kilobits per second
Kbyte	kilobyte
KCMS	Kodak color management system
KCS	kilo characters per second
KDS	key display system
Kf/cm	Kilo flux reversals per centimeter
kg	kilogram
kHz	kilohertz
KLIC	Key-Letter in Context
km.	kilometer
KRI	Kansai Research Institute
krit.	Kritik; kritisch
KRS	knowledge retrieval system
KS	Kansas
Ksr	keyboard send/receive terminal (teletype terminal)
Kt/i	Kilotransitions per inch
kV	kilovolt
KW	Kilowatt
KWAC	Keyword Alongside of Context Index
KWAIC	Keyword Augmented in Context
KWEST	Keyword Extracted as a String of Terms Index
kWh	kilowatt-hour
KWIC	keyword-in-context
KWOC	keyword-out-of-context
KWOT	keyword-out-of-title
KY; Ky.	Kentucky

## L

L	low
l.c.	loco citato (in the place cited)
L.p.	large paper copy
l.p.	large paper copy or edition
L.S., LS	library school; Locus sigilli
L.V.	Locus variis
LA; La.	Louisiana
LADDR	layered device driver architecture
LAMA	Library Administration and Management Association (ALA division)
LAN	local-area network

LANC	local application numerical control	Linasec	a line a second
lang.	language	ling.	linguistics; linguistic
LAP	Link Access Procedure	LIP	Large Internet Packet
LAPB; LAP-B	Link Access Procedure-Balanced; link access protocol b-channel	LIPS	laser image processing scanner; linear inferences per second
LAPD; LAP-D	link access protocol d-channel	LIPX	Large Internetwork Packet Exchange
laser	light amplification by stimulated emission of radiation; London and South-Eastern Region	LISP	LISt Processing language
LAST	liquid archival sound treatment	lit.	literature; literary
LAT	Local Area Transport	LITA	Library and Information Technology Association (ALA division)
Lat.	Latin	Lith.	Lithuania; Lithuanian
LATA	Local Access and Transport Area	litt.	litterature; litteraire; litteratur
Latv.	Latvia; Latvian	LJ	laser jet
LBE	lower band edge; location based entertainment	ll.	leaves; lines of type
LBI	Library Binding Institute	LLC	logical link control
LBR	laser beam recorder	LM	landscape monitor
LC	Library of Congress; lower case	lm	lumen
LCA	lowercase alphabet	LNA	low noise amplifier
LCC	leaderless chip carrier; Library of Congress Classification	LNC	low noise block down converter
LCD	liquid crystal display	LO	lead out; left out
LCD printer	liquid crystal display printer	loc.cit	loco citato (in the same place)
LCMARC	Library of Congress MACHine- Readable Cataloging	LOR	lead operated relay
LCSH	Library of Congress Subject Headings	LP	line printer; long play
LCT	low color temperature	lpc	lines per centimeter
LD	line driver	lph	lines per hour
LDAP	Lightweight Directory Access Protocol	lpi	lines per inch
LDCS	linear direct conversion system	Lpi	sound pressure level
LDR	light dependent resistance; light dependent resistor	lpm	lines per minute
LE	less than or equal to	lps	lines per second
LEB	local ethernet bridge	LPT	line printer
LEC	local exchange carrier	LQ	laser quality; letter quality
lect.	lecture	LRC	learning resources center; longitudinal redundancy check
LED	light-emitting diode	LS	lectori salutem; link status; locus sigilli (in the place of the seal); long shot
LED printer	light-emitting diode printer	LS-API	Licensing Server API
LEO	laser and opto electronics; low-earth orbit satellites	LSA	LAN security architecture; Library Science Abstract
lett.	lettere; letteratura; letterario	LSB	least significant bit
LF	line feed; low frequency	LSC	least significant character; linear sequential circuit
LFO	low frequency oscillator	LSCA	Library Services and Construction Act
LH	LoadHigh	LSD	least significant digit
LI	lead in; left in	LSI	large scale integration
LIA	limited intelligence agent	LSL	link-support layer
lib.	liber (Latin); library; librarian	LSR	linear shift register
libr.	librairie	LT	less than; line termination
LIC	last-in-chain; licensed internal code; line interface coupler	LTC	longitudinal time code
LIFO	last in, first out	ltd.	limited
LILO	last in, last out	LU	logical unit
LIM	Lotus/Intel/Microsoft	LU 6.2	Logical Unit 6.2
LIM EMS	Lotus/Intel/Microsoft Expanded Memory Specification	LUFO	least used, first out
		LULOP	London Union List of Periodicals
		LUT	look-up table
		LV	Laser Videodisc

LVDT	linear variable differential transformer	MBO	management by objectives
LWX	LAN/WAN Exchange	MBONE	Multicast Backbone
lx	lux	Mbps	megabits per second
LZW	Lempel Ziv Welch	Mbyte	megabyte
		MC	machine coated; megacycle; meter candle
		mc	megacycle
		MCA	Micro Channel Architecture; multi channel access
		MCB	memory control block
		MCC	multichannel communication; Micro Electronics and Computing Technology Consortium
		MCD	master copy distribution; multimedia cartridge drive
		MCGA	Multi-Color Graphics Array
		MCI	Media Control Interface
		MCID	malicious call identification
		MCM	multichip module technologies
		MCP	Macintosh Control Program
		MCT	manufacturer's center line tape
		MCU	multiport control unit; medium close up
		MD	Make Directory; Maryland; minidisc; monochrome display
		MD ROM	minidisc read only memory
		Md.	Maryland
		MDA	Monochrome Display Adapter
		MDB update	master database update
		MDI	media control interface; multiple document interface
		MDK	multimedia development kit
		MDR	Memory Data Register
		MDS	Microprocessor Development System
		MDU	multidrive unit
		ME	Maine; Micro Express (Company)
		Me.	Maine
		MEDLARS	Medical Literature Analysis and Retrieval System
		meg	megabyte
		MELA	Middle East Librarian's Association
		mem.	memory; memorial
		MEMO	memorandum
		MESA	music editor, scorer, and arranger
		MESI	modified, exclusive, shared, invalid
		METRO	New York Metropolitan Reference and Research Library Agency, Inc.
		MF	machine finish; male-female; mediation function; medium frequency
		MFC	Microsoft Foundation Classes
		MFLOPS	million floating-point operations per second
		MFM	modified frequency modulation
		MFM encoding	modified frequency modulation encoding
		MFP	multi-frequency pulsing

MFS	Macintosh File System; modified filing system; multiple file systems	MN	Minnesota
mg	milligramme	MNP	Microcom Networking Protocol; multiple network protocols
MGC	manual gain control	M-O	magnito-optic
MH	message handler; MAC header	MO	magnetic optical disc; magneto-optical drives; Missouri
MHIDAS	Major Hazard Incident Data Service	MO; Mo.	Missouri
MHS	Message Handling Service, Novell	mod.	modern
MHz	megahertz	modem	MODulator/DEModulator
MI	multiple inheritance	MOL	maximum output level
MIAS	multipoint interactive audiovisual system	monog.	monograph
MIB	Management Information Base	monoling.	monolingual
Mich.	Michigan	Mont.	Montana
MICR	magnetic ink character recognition	mops	million operations per second
MIDI	medium independent digital image; Musical Instrument Digital Interface	morphing	metamorphosing
MIF	management information format	MOS	metal-oxide semiconductor; modem operating system
MIFF	Management information format file	MOSFET	metal-oxide semiconductor field-effect transistor
MIG	metal in gap	MOTIS/MHS	message oriented text interchange system/message handling system
MIM	metal-insulator-metal	MOU	memorandum of understanding
MIME	Multipurpose Internet Mail Extensions	MP	multiprocessor
mimeo.	mimeograph	MP/M	MultiProgramming Monitor (MultiProgramming Control Program for Microprocessors)
MIN	minimum	MPC	Multimedia PC (personal computer)
min.	minute, -s	MPDN	materials properties data network
Minn.	Minnesota	MPEG	Motion Picture Experts Group
MIPS	millions of instructions per second	MPG	multimedia presentation generator
MIS	management information service; management information system	MPL	multimedia presentation language
misc.	miscellaneous	MPS	multimedia presentation system
Miss.	Mississippi	MPT	Ministry of Post and Telecommunication
MIT	Massachusetts Institute of Technology	MPTN	Multiprotocol Transport Network
MITI	Ministry of International Trade and Industry	MPU	main power unit
mks	meter-kilogram-second	MPU	microprocessor unit
mksa	meter-kilogram-second ampere	MPX	multiplexer
MI	Michigan	MQI	Message Queuing Interface, IBM
ml	milliliter	mr	medium reduction
MLA	Modern Language Association; Music Library Association	MR	Modem Ready; memory read; multiport repeater
MLI	Multiple Link Interface	MRB	Management Request Broker
MLID	multiple-layer interface driver; multi-link interface driver	MRCF	Microsoft real-time compression format
MM	male-male; multimedia	MRCI	Microsoft real-time compression interface
mm.	millimeter(s)	MRDF	machine-readable data file
MMA	MIDI Manufacturers Association	MRE	(Japan-US) Manufacturing Research Exchange
MMC	meet-me conference; Multimedia Marketing Council	MRM	maximum right mask
MME	multimedia extensions	MRS	music reading software; Materials Research Society
MMI	man-machine interface; Monolithic Memories, Inc.	MS	medium shot; Microsoft; Mississippi; mobile station
MMPM	Multimedia presentation manager	ms	millisecond
MMU	memory management unit	MS-DOS	Microsoft Disk Operation System manuscript; manuscripts
		ms.	manuscript; manuscripts
		MSAC	Micro Sync to Async Converter
		MSAV	Microsoft Anti-Virus program

MSB	most significant bit	NH	New Hampshire
MSC	MIDI show control; mobile service switching station; most significant character	N.J.	New Jersey
MSCDEX	Microsoft Compact Disc Extensions	NM	New Mexico
MSD	most significant digit	N.O.P.	not out publication
msec	millisecond	n.p.	new paragraph; no place; no price; no publisher; no price; no place of publication; no printer's name; no publisher's name
MS-NET	Microsoft Network	N.S.	Nova Scotia
MSF	minutes, seconds and frames	N.S.W.	New South Wales
MSI	midium-scale integration	N.T.	New Testament; Northern Territory
MSN	multiple subscriber number	N.W.T.	Northwest Territories
MSP	Microsoft's Windows Paint	N.Y.	New York
mss	manuscript; manuscripts	n.y.p.	not yet published
MSS	mass storage system	n.y.r.	not yet received from publisher
MT	machine translation; Montana	N.Z.	New Zealand
MTA	Message Transfer Agent; motion time analysis	n:o	numero
MTBF	mean time between failures	NA	not available; not assigned
MTC	MIDI time code; Musical Instrument Digital Interface (MIDI) Time Code	NAB	National Association of Broadcasters
MTF	modulation transfer function	NACL	National Advisory Commission on Libraries
MTP	message transfer part	NACO	Name Authority Cooperative
MTS	multichannel television sound; message transfer system	NADS	National Advanced Driving Simulator
MTTF	mean-time-to-failure	NAEC	Novell Authorized Education Center
MTTR	magnetic tape recorder/reproducer; mean time to repair	NAFPD	North American flat panel display
MTU	magnetic tape unit	NAFTA	North American Free Trade Agreement
MUD	Multiuser Dungeon	NAK	Negative Acknowledgement
Multimedia		NAL	National Agricultural Library
MUMPS	Massachusetts utility multiprogramming system	NAMM	National Association of Music Merchants
mupi	meublier urbain pour publicité et information	NAND	logical NOT-AND
MUPS	multiprocessing system	NAP	National Academy Press
mus	museum	NAPLPS	North American presentation level protocol syntax
MUSE	multiple sub-Nyquist sampling encoding	NAS	network application support; National Academy of Sciences; network applications services
mux	multiplexer	NASA	National AeroSpace Administration
mv	millivolt	NASIS	National Association for State Information Systems
MVP	most valuable product	NAS-NRC	National Academy of Science- National Research Council
MVS	multiple virtual storage	nat.	national
MW	memory write	NATIS	National Information Systems
MX	multiplexing	NAU	network-addressable unit
Mz	Mezzo Soprano	NB	narrow band
		NBA	National Braille Association
		NBC	National Broadcast Corporation
		NBM	non-book materials
		NBS	National Bureau of Standards
		NC	network control; no connection; North Carolina; numerical control
<b>N</b>			
N	negative-appearing microfilm		
n	nano- ( $10^{-9}$ ); north		
n. pag.	no pagination		
N.B.	New Brunswick		
NC	North Carolina		
n.c.	not cataloged		
n.d.	no date		
ND	North Dakota		
N.F.	neue Golge		

NCAIR	National Center for Automated Information Retrieval	NFAIS	National Federation of Abstracting and Indexing Services
NCB	Network Control Block; nickel cadmium battery	Nfld.	Newfoundland
NCC	National Computing Centre; new common carrier	NFS	Network File System
NCGA	National Computer Graphics Association	NG	no good
NCIC	National Cartographic Information Center	NH	New Hampshire
NCL	network control language	NHTSA	National Highway Traffic Safety Administration
NCLIS	National Commission on Libraries and Information Science	NI	Non-Interlaced
NCP	NetWare Core Protocol; Network Control Program	NIB	nickel iron battery
NCR	no carbon required	NIC	network interface card
NCSA	National Center for Supercomputing Applications; National Computer Security Association	NICE	network information and control exchange
NCSC	National Computer Security Center	NIDER	Netherlands Instituut voor Documentatie en Registratuur
ND	North Dakota	NIE	National Institute of Education
NDAC	not data accepted	NIFTP	network independent file transfer protocol
NDD	NetWare Directory Database	NII	National Information Infrastructure
NDDE	networking enabled dynamic data exchange	NIMH	nickel metal-hydride
NDDK	network device driver kit	NIOSHTIC	National Institute for Occupational Safety and Health
NDIS	Network Driver Interface Specification	NIOSHTIC	National Institute of Occupational Safety and Health
NDK	network development kit	NIP	non-impact printer
NDR	nondestructive readout	NISC	National Information Services Corporation
NDRO	nondestructive readout	NISO	National Information Standards Organization
NDS	Novell Directory Services (formerly NetWare Directory Services)	NIST	National Institute of Standards and Technology
NDSU	North Dakota State University	NISTEP	National Institute of Science and Technology Policy
NE	Nebraska; new edition in preparation; not equal to	NITCs	National Information Transfer Centers
NEAP	Novell Educational Academic Partner	Ni-Zn	nickel-zinc
Neb.	Nebraska	NIU	North American ISDN users' forum; network interface unit
NEC	Nippon Electric Corporation	NJ	New Jersey
NEDO	New Energy and Industrial Technology Development Organization	NL	new-line character
NEF	network element fullction	NLA	Nigerian Library Association
NEGA	National Computer Graphics Association	NLB	National Library for the Blind
NEQ	not equal to	NLM	National Library of Medicine; NetWare Loadable Module
NESE.DB	National Economic, Social, and Environmental Data Bank	NLQ	near-letter-quality; near-laser-quality
NET	Norme Européenne de Télécommunications	NLS	oN Line System
NetBEUI	NetBIOS Extended User Interface	NLSP	NetWare Link Service Protocol
NetBIOS	Network Basic Input/Output System	nm	nanometer
NetDDE	Network Dynamic Data Exchange	NM	New Mexico
netiquette	network etiquette	NMA	National Micrographics Association
NEU	network expansion unit	NMDA	New Media Development Association
Nev.	Nevada	NMI	non-maskable interrupt
new ser.	new series	NMO	network management option
newsl.	newsletter	NMOS	negative channel metal-oxide semiconductor; The N-channel MOS
		NMP	Network Management Protocol



OLDT on-line data transmission  
 OLE Object Linking and Embedding;  
 on-line equipment  
 OLFREFL outline font reflection  
 OLFSHAD outline font shadow  
 OLIR on-line information retrieval  
 OLRT online real time operation  
 OLTP On-Line Transaction Processing  
 OM-CARD optical memory card  
 OMA Object Management Architecture  
 OMDR optical memory disc recorder  
 OMEGA open-ended modular electronic graphic  
 arts  
 OMG Object Management Group  
 OMI open messaging interface  
 OMR optical mark reader  
 OMS office mail system  
 OMT Object Modeling Technology  
 ONA open network architecture  
 ONC Open Network Computing  
 ONMS Open Network Management System  
 Ont. Ontario  
 OOP object oriented programming  
 OOS out of sync;  
 object oriented software  
 OP out of print  
 Op. no. opus number  
 op.cit. opere citato (in the work quoted)  
 OPAC online public access catalog  
 OPC odd parity check  
 opcode operation code  
 OPI open prepress interface  
 opm operations per minute  
 opp. opposite  
 OPT Open Protocol Technology  
 OR optical reader; Oregon;  
 orientation ratio  
 Or. Oregon  
 Orig.: orig. original; originally  
 ORNL Oak Ridge National Laboratory  
 OROM Optical Read-Only Memroy  
 ORPC object remote procedure call  
 ORTA Office of Research and Technology  
 Application  
 ortho orthochromatic  
 OS operating system;  
 out of stock  
 OS/2 Operating System/2  
 OSA open system architecture;  
 open scripting architecture  
 OSD on screen display  
 OSEP Office of Special Education  
 Programs  
 OSF Open Software Foundation;  
 operations system function  
 OSH Occupational Safety and Health  
 OSI Open Systems Interconnections  
 model;  
 open systems integration;  
 out of stock indefinitely  
 OSPF Open Shortest Path First

OSRD Office for Standard Reference  
 Data  
 OSTC Open System Test Consortium  
 OSTP Office for Science and  
 Technology  
 OSU optical storage unit  
 OTA Office of Technology Assessment  
 OTP one time programmable  
 OTR one touch timer recording  
 OTT Office of Technology Transfer  
 (NIH)  
 OV overflow; object vision  
 OVPC odd vertical parity check  
 oz ounce

## P

P peta-;  
 positive-appearing microfilm;  
 Press  
 p. pico- ( $10^{-12}$ )  
 p., pp. page; pages  
 P.D. public domain  
 P.E.I. Prince Edward Island  
 p.p. privately printed  
 p.p.s. pictures per second  
 P.R. Puerto Rico  
 p.t.o. please turn over  
 PA, Pa. Pennsylvania  
 PABX Private Automatic Branch Exchange  
 PAC paging area controller  
 PAD packet assembler-disassembler  
 PADU package assembling/disassembling unit  
 pag. pagination  
 PAIS Public Affairs Information Service  
 PAL phase alteration line;  
 programmable array logic  
 PALE Phase alternating line encoding  
 PAM pulse amplitude modulation  
 PAP Packet-level Procedure;  
 Printer Access Protocol  
 par. paragraaf  
 PARC Palo Alto Research Center  
 paren. parenthesis  
 PAS performance animation system  
 PASC precision adaptive sub-band codig  
 pat. patented  
 PATH Program on Advanced Technology  
 for the Highway  
 PAX private automatic exchange  
 PB petabyte  
 pbk. paperback  
 PBP Packet Burst Protocol  
 PBX private branch exchange  
 PC parity check;  
 personal computer;  
 printed circuit;  
 program counter

PC-DOS	Personal Computer Disk Operating System	PGA	pin grid array; Professional Graphics Adapter
PCB	PC-board; printed-circuit board	PGD	Planar Gas Discharge display
PCC	personal communication computer	PgDn key	Page Down key
PCI	peripheral component interconnect; Peripheral Component Interface; personal computer interconnect; protocol control information	PGF	presentation graphics feature
PCIS	PC Integration Service	PGR	presentation graphics routines
PCL	Printer Control Language; Programming Control Language	PgUp key	Page Up key
PCM	pulse-code modulation	PH	page heading; packet handler
PCMCIA	PC Memory Card International Association	PHIGS	programmer's hierarchical interactive graphics standard
PCMS	precision color management system	philol.	philology
p-code	pseudocode	philos.	philosophy
PCN	personal communication network	photo(s)	photograph(s)
PCOS	parallel code operated switch	PHP	personal handy phone
PCR	polychromatic color removal	PI	program identification; performance index
PCS	personal communication system; personal communication services; Personal Computing System	PIC	personal intelligent communicator; priority interrupt controller
PCSA	personal computing systems architecture	PICS	Protocol Implementation Conformance Statement
PCX	PC Paintbrush file format	PICT	picture
PDA	personal digital assistant	PIECE	productivity, information, education, creativity, entertainment
PDC	peripheral device controller; primary domain controller	PIF	programmable interface; program information file
PDF	portable document file	PIL	publishing interchange language; precision in-line
PDH	plesiochronous digital hierarchy	PILOT	Programmed Inquiry, Language Or Teaching
PDI	product data interchange	PIM	parallel inference machine; Personal Information Manager
PDL	page-description language	PIMOS	PIM operating system
PDLC	polymer dispersed liquid crystal	PIN	personal identification number
PDM	pulse duration modulation	PING	Packet INternet Groper
PDN	public data network	PIO	Programmed Input/Output; Public Information Office
PDS	partitioned data set; Premises Distribution System; processor direct slot	PIP	page image processor; peripheral interchange program; picture in picture
PDU	power distribution Unit; Protocol Data Unit	PISC	parallel instruction set computing
PE	parity error; personal electronics; phase encoding; press error; printer's error	PIT	Programmable Interval Timer
PEL	picture element (pixel)	PIU	Path Information Unit
PEM	Privacy Enhanced Mail	pixel	PICTureS ELeMent
PERT	Program Evaluation and Review Technique	PJ/NF	Projection-join normal form
PET	Personal Electronic Transaction computer	PJL	printer job language
PF	page footing	pl.	place
pf	PicoFarad	Pl. no	plate number
pf. PF.	portfolio	PL/I	Programming Language I
PFL	pre fade listening	PL/M	Programming Language for Microprocessors
PFM	Portrait-Format Monitor; printer font metrics; pulse frequency modulation	PLA	programmable logic array; Public Library Association (ALA division)
PFR	power-fail resist	PLCC	plastic leadless chip carrier
PFS	personal filing system	PLD	programmable logical device
		PLL	Phase Locked Loop
		PLMN	public land mobile network
		PLO	Phase Locked Oscillator
		PLV	production level video

PM	photomultiplier; Presentation Manager	PRI	primary-rate interface
PMA	program memory area	priv. print.	privately printed
PME	privileged mode extensions	PRM	protocol reference model
PMH	production per man hour	PRMD	private managed domain
PMI	Precision Monolithics, Inc.	PRML	partial-responses maximum likelihood
PMMU	paged memory management unit	PRN	printer; pseudorandom noise
PMOS	P-channel Metal Oxide Semiconductor	pro tem.	pro tempore
PMS	Pantone Matching System	PROC	procedure
PMT	photomechanical transfer	proc.	proceedings
PNC	paging network controller	PROFS	Professional Office System
PnP	Plug and Play	prol.	prologue
POD	printing-on-demand	PROLOG	PROgramming in LOGic
POF	program operator interface; point of failure	PROM	programmable read-only memory
POH	power-on hours	Prov.	Provence; Provencal
POI	point of information	PRT	printer
Pol.	Poland; Polish	PrtScr key	Print Screen key
POLIS	Parliamentary Online Information System	ps	picosecond
POPST	postulated-based permuted Subject Indexing	PS	presentation services; programmed symbols; programmed symbol set; PostScript
port.	portrait	PSD	programmable sharing device
Port.	Portugal; Portuguese	PSDN	Public switched data network
ports	portraits	PSE	paper surface efficiency
POS	point of sale; programmable option select	psec	picosecond
POSIX	Portable Operating System Interface	pscud.	pseudonym
POST	power-on self test	PSK	phase-shift keying
pot	potentiometer	PSN	packet switching network
POV	point of view	PSP	Program Segment Prefix
P-P	peak-to-peak	PSPDN	Packet-Switched Public Data Network
pp	pages	PSTN	public switched telephone network
PPBS	planning-programming-Budgeting System	PSW	Program Status Word
PPC	portable personal computer; program-to-program communications	psych.	psychology; psychological
PPF	photoplastic film	Pt	part
ppH	prints per hour	PT	pitch
PPISC	Professional Publishers Interchange Specification Committee	pt.	point
PPM	pages per minute; pulse position modulation	PTE	Packet Transport Equipment
PPP	Point-to-Point Protocol	PTM	pulse time modulation
PPQN	pulses per quarter note	PTP	paper tape punch
PPS	page printing system	PTR	paper tape reader; printer
PQFP	plastic quad flat pack	PTT	Postal Telephone and Telegraph
PR	pseudorandom; Puerto Rico	PU	physical unit
pr.	printed	pub.	publication; publisher; published; publishing
PRA	primary rate access	PUS	performance upgrade socket
PRAM	parameter RAM	PVA	polyvinyl-acetate adhesive
PRBS	pseudorandom binary sequence	PVC	permanent virtual circuit
pre-cat.	precataloging	PWB	printed wire board
precis	PREserved Context Index System	PWI	public Windows interface
pref.	preface	PWM	pulse-width modulation
PREP	PowerPC reference platform	PWR	power
PREV	previous		
prev.	previously		

**Q**

QA	Q-adapter; quality analysis; quality assurance
QAM	quadrature amplitude modulation; queued access method
QBE	query by example
QC	quality control
QCIF	quarter common intermediate format
QEMM	Quarterdeck Expanded Memory Manager
QIC	quarter-inch cartridge
QL	query language
Qld.	Queensland
QOS	quality of service
QPL	Qualified Products List
QPSK	quadrate phase shift keying
qq.v.	quae vide
QRC	quick reference card
QRG	quick reference guide
QSAM	queued sequential access method
Qsld.	Queensland
qt.	quart
QTAM	Queued Teleprocessing Access Method
quad.	quadraphonic; quadrat
quart.	quarterly
Que.	Quebec
QUIP	quad in-line Package
q.v.	quantum vis; quod vide

**R**

R	red; reset; register; registered; request; ring indicator
R&D	research and development
R.I.	Rhode Island
R.P.	reprinting
R.S.F.S.R.	Russian Soviet Federated Socialist Republic
R/W	Read/Write
RA	random access; right ascension
RACE	Research and development Advanced Communication in Europe Radiocommunications
RAID	redundant array of inexpensive disks; retrieval and information database
RALU	Register-equipped ALU
RAM	random-access memory
RAS	Row Address Strobe
RATFOR	Rational FORTRAN
RB	return to bias
RBOC	regional Bell operating companies
R-C	Register-Capacitor

RC	rewritable consumer; remote concentrator
RCA	Radio Corporation of America
RCC	Range Commanders Council
RCR	Research and development Center for Radio systems
RCV	receive(r)
R-DAT	rotary digital audio tape
RD	Receiv Data; Remove Directory
RDB	relational database
RDBMS	relational database management system
RDC	Remote Datagram Control
RDE	Received Data Enable
RDIR	Research and Development in Russia
RDOS	Real-time Disc-Operating System
ref.	reference
REJ	reject
relig.	religion; religious
REM	remark
REP	repeat; resolution enhancement procedure
reprod.	reproduced; reproduction
REPROM	reprogrammable read only memory
rept.	report
REQ	request
RES	reserve; reset signal
RET	resolution enhancement technology; return
RETMA	Radio Electronics and Television Manufacturers Association
REV	reverse
rev.	revise; revised; revision; review
REW	rewind
REXX	Restructured eXtended eXecutor
RF	radio frequency
RFA	remote file access
RFC	request for comments
RFI	radio-frequency interface
RFP	Request for Proposals
RFQ	Request for Quotes
RFS	remote file service
RFT	revisable form text
RGB	red-green-blue
RH	relative humidity
RI	Referential Integrity; Right in
RIC	radio identity code
RIDE	Rapid Integrated Drive Electronics
RIFF	resource interchange file format
RIM	Retrieval Interface Manager
RIN	Reference Indicator Number
RIP	raster image processor; remote imaging protocol; Routing Information Protocol

RIS Research Information Systems  
 Ris Rule Interpretations  
 RISC reduced instruction set computer  
 RIT raad voor informatie technologie  
 RITE Research Institute for Innovative Technology for the Earth  
 RJE Remote Job Entry  
 RI Rhode Island  
 RLE run-length encoded  
 RLG Research Libraries Group  
 RLIN Research Libraries Information Network  
 RLL run length limited (data coding)  
 RLV Recordable Laser Videodisc  
 RMI resource manager interface  
 RMS root mean square  
 RMT remote  
 RMV remove  
 RMW Read-Modify-Write cycle  
 R-NRZ-L randomized nonreturn to zero, level  
 RND Remote Name Directory  
 RO read only; receive-only  
 RO terminal read-only terminal  
 ROD rewritable optical disc  
 ROM read-only memory  
 ROM BIOS read-only memory basic input/output system  
 Rom. Romania; Romanian  
 ROP run of press  
 ROS real-time operating system  
 ROSE Remote Operations Service Element  
 ROV Reflective Optical Videodisc  
 RP rapid prototyping;  
 rear projection  
 RPC Remote Procedure Call  
 RPG Report Program Generator language  
 rpm revolutions per minute;  
 rotations per minute  
 RPN Reverse Polish notation  
 RPROM reprogrammable read only memory  
 RPS rapid prototyping system  
 rps revolutions per second  
 rpt. reprint  
 RQBE relational query by example  
 RS Register Select  
 RSA Rivest, Shamir, Adleman  
 RSU remote switching unit  
 RT related term  
 RTC real time clock  
 RTECS Registry of Toxic Effects of Chemical Substances  
 RTF Rich Text Format  
 RTL Run-time library  
 RTMP routing table maintenance protocol  
 RTOS Real Time Operating System  
 RTS Ready To Send;  
 Request To Send  
 RTV real-time video  
 RU request unit or response unit  
 Rus. Russia; Russian

RUSA Reference and User Services Association (ALA division)  
 RVA recorded voice announcement  
 RW, R/W read-write  
 RWC read write calibration;  
 real world computing  
 RWD rewind  
 RWW read-while-writing  
 RXD Receive Data  
 RZ Return to Zero

## S

S Select  
 S. soprano  
 s. south  
 S. Aust. South Australia  
 s. caps small capitals  
 s.a. see also  
 s.c. small capitals;  
 super-cabdered paper  
 S.C. South Carolina  
 S.D. South Dakota  
 s.n. Sine nominc (without a name)  
 S.S.; s/s Same size  
 S.S.R. Soviet Socialist Republic  
 S.T. Small type  
 S/F store and forward  
 S/H Sample and Hold  
 S/N signal-to-noise ratio  
 S/O send only  
 S/PDIF Sony/Philips digital interface  
 SA selective availability  
 SAA Society of American Archivists;  
 Systems Application Architecture  
 SAC Single Attachment Concentrator  
 SAE Society of Automotive Engineers  
 SAG SQL Access Group  
 SANE standard Apple numeric extension  
 SAP Service Access Point;  
 Service Advertising Protocol  
 SAPI Service Access Point Identifier  
 SAS Singe Attachment Station;  
 single-attached station;  
 statistical analysis system  
 SASI Shugart Associates System Interface  
 Sask. Saskatchewan  
 SAV start of active video  
 SAW surface acoustic wave  
 SBC single board computer  
 SBDC Small Business Development Center  
 SBN Standard Book Number  
 sc single column  
 SC South Carolina  
 sc. scilicet  
 SC/MP Simple Cost-effective Microprocessor

SCADA	Supervisory Control and Data Aquisition	ser.	Serial; series; Service
Scan.	Scandinavia; Scandinavian	Serb.	Serbia; Serbian
SCANDI	surveillance, control and driver information system	SES	Société Européenne des Saellites
SCART	Syndicat des Constructeurs d'Appareils, Radiorécepteurs et Téléviseurs	SF.	Silent Film
SCC	serial communications controller	SFBI	shared frame buffer interconnect
SCCP	signalling connection control part	SFD	switching field distribution
SCCS	Southern California Computer Society	SFT	System Fault Tolerance
SCI VIS	scientific visualization	SFX	sound effects; special effects
SCMS	serial copy master system	SGML	Standard Generalized Markup Language
SCOLCAP	SCOTISH Libraries Cooperative Automation Project	SHD	super high definition
SCOP	Single Copy Order Plan; Systematic Computerized Processing in Cataloging	SHF	super high frequency
SCOS	Serial Code Operated Switch	SHIP	Slater Hall Information Products
SCP	service control point	SI	Serial Input
SCR	silicon-controlled rectifier	si	silent
SCSI	Small Computer System Interface	Si	silicium
sculpt.	sculpsit; engraved	SI	Système International d'Unités; system information; the shift-in character; System Integrator
SD	Send Data; South Dakota	SIA	Semiconductor Industry Association; Systems Integration Associates (Company)
sd.	sound	Sic.	thus; in this manner
SDA	screen design aid; sense data included	SID	symbolic instruction debugger
SDF	screen definition facility; serial data field	SIDF	system independent data format
SDH	Synchronous Digital Hierarchy	sif	Standard Interface Format
SDI	Selective Dissemination of Information; serial digital interface	SIG	signal; special interest group
SDK	Software Developer's Kit; System Development Kit	sig.	signature
SDLC	Synchronous Data Link Control	SIGLE	System for Information on Grey Literature in Europe
SDM	selective dissemination of microfiche; space-division multiplexingsystem development methodology	SIMMs	single-in-line memory modules
SDP	structured data processing	SIMNET	simulation network
SDU	Service Data Unit	SIO	Simultaneous Interface Operation
SDVN	switched digital video network	SIP	single in-line package
SE	Sign Extend	SIU	system input unit
SEC, sec.	second(s)	SL	service layer
SECAM	Sequentiel Couleur à Memoire	Sl.	silent
SECT	sector	SL., s.l.	sine loco
sect.	section	Slav.	Slavic
SEDBASE	Meyler's Side Effects of Drugs	SLED	single large expensive disk; Statewide Library Electronic Doorway
SEG	segment; special effects generator	SLIP	Serial line Internet Protocol
SEL	select	SLSI	Super Large Scale Integration
scl.	selected	sm. cap	small capitals
SEM	scanning electronic microscopy; semiconductor manufacturing	SMAE	Systems Management Application Entity
scp.	separate	small caps	small capitals
Scpt.	September	SMAP	systems management application process
seq.	sequens	SMB	Server Message Block; storage module drive
seqq	sequentes; sequentia	SMC	sheet molding compound
sequel	structured query language	SMD	specific material designation
SER	satellite equipment room	SMDs	multimegabit data service; Switched Multimegabit Data Service
		SME	Society of Manufacturing Engineers

SMF	standard MIDI file	SPP	song position pointer (multimedia)
SMFA	Systems Management Functional Area	SPSS	Statistical Paekage for the Social Sciences
SMI	Static Memory Interfacc	SPST	Single Pole Single Throw
SMM	system management mode	SPX	Sequenced Packet Exchange
SMP	symmetrical multiprocessing	sq.	square
SMPTE	Society of Motion Picture and Television Engineers	SQA	software quality assurance
SMS	Scientific Micro Systems: service management system: Storage Management Services	SQL	structured query language
SMT	surface mount technology	SR	Status Register
SMTP	Simple Mail Transfer Protocol	SRAM	static random-access memory
SNA	Systems Network Architecture	SRI	Stanford Research Institute
SNADS	SNA Distribution Services	SS	Single Side; Solid State
SNI	Standard Network Interconnection	SS/DD	single sided/double density
SNMP	Simple Network Management Protocol	SS/ND	single sided/nonnal density
SNOBOL	StriNg-Oriented SymBolic Language	SSCI	Social Science Citation Index
SNOS	super network operating system	SSD	solid state disk
SNPA	Subnetwork Point of Attachment	SSDA	Synchronous Serial Data Adaptor
SNR	signal-to-noise ratio	SSDL	storage structure definition language
SNS	Switched Network Server	SSI	Small Scale Integration
SO	Serial Output; Shift-Out bit	SSN	Standard Serial Number
so.	southern	SSP	service switching point
SOA	semiconductor optical amplifier	SSR	Solid State Relay
SOB	Start-of-block	SSTV	slow-scan television
soc.	society; sociolinguistics; sociolinguistic	s-t	small type
SOF	sound on Film	S-VGA	super video graphics array
SOH	Start of Header	ST	straight tip connector
SOHO	small office/home office	STA	Science and Technology Agency; Spanning Tree Algorithm
SOLINET	Southeastern Library Network	STAIRS	storage and information retrieval system
SOM	start of message; system object model; System Object Model	START	system for analysis, research and training
SONET	Synchronous Optical Network	stat mux	statistical multiplexing
SOS	silicon-on-sapphire	STD	Standard
SOT	sound on tape	stereo.	stereophonic
SP	Stack Pointer; standard play	STL	stereo lithography
Sp.	Spain; Spanish	STM	scanning tunneling microscopy; synchronous transfer mode; synchronous transport module
SPA	Software Publisher's Association	STP	shielded twisted-pair cable; signal transfer point; Spanning Tree Protocol
SPAAR	Special Program for African Agricultural Research	STRICOM	simulation, training and instrumentation
SPARC	Scalable Performance Architecture (Sun Mictosystems, Inc.); Scalar Processor ARChitecture	STRN	Standard Technical Report Number
SPDT	Single Pole Double Throw	STTL	Standard Transistor-Transistor Logic
spec	specification	STV	subscription television
spec. iss.	special issue	STX	Start of Text
spec. sect.	special section	SUB	subaddressing
SPECOL	SPE Customer Oriented Language	SUBST	substitute
SPG	sync pulse generator	sum.	summary
SPIE	Society of Photo-Optical Instrumentation Engineers	supp., suppl.	supplement
SPL	sound pressure level	supt.	superintendent
Spool	simultaneous peripheral operation on line	SUT	Socket Under Test
		SVD	simultaneous voice/data
		SVGA	Super Video Graphics Array
		S-VHS	super video home system
		SVID	System V Interface Definition

SW	Status Word
SWALCAP	South-West Academic Libraries Cooperative Automation Project
SWDT	synchronization word detect time
Swed.	Sweden; Swedish
SWIFT	Society for Worldwide Interbank Financial Transactions
Switz.	Switzerland
SYLK file	Symbolic Link File
SYN	synchronizing character
sync	synchronization; synchronize; synchronizing; synchronous;
sync singal	synchronization signal
SYNTOL	Syntagmatic Organization Language
SYS	system
Sys Req key	System Request key
SysEx	system exclusive
sysgen	system generation
sysop	system operator

## T

T	Tenor; tera- ( $10^{12}$ ); True
t.	tome
t.e.g.	top edges gilt
t.f.	title frame
T.H.	Territory of Hawaii
t.p.	title page
t.s.	transcpt; tub-sized
T.S.	typescript; tub-sized
TA	Telecommunication Administration; terminal adaptor
TAA	track average amplitude
TAB	tabulate
TalAE	Taligent application environment
TalDE	Taligent development environment
TalOS	Taligent object services
TAPI	telephone application programming interface
Tas.	Tasmania
TASI	time assignment speech interpolation
TATS	Tone Activated Power Switch
Tb	terabit
TB	terabyte; Trillion Bytes (1000 GB)
TBC	time base corrector
TBE	time base error
TBF	time between failure
TBMT	Transmitter Buffer Empty
TC	telecommunication; Technical Committee; transaction capabilities
TCal	thermal calibration
TCAM	Telecommunications Access Method
TCC	transmission control character
TCM	trellis-coded modulation

TCP	terminal control program; Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TCU	Tight close up
tcysitcyg	the-color-you-see-is-the-color-you-get
TD	Transmitted Data
TDM	time-division multiplexing
TDMA	time division multiple access
TDP	transactional data processing
TDR	time-domain reflectometer
TDT	telephonic data transmission
TE	terminal equipment
TE1	terminal equipment 1 ISDN
TE2	terminal equipment 2 non ISDN
TEI	Terminal End Point Identifier Telephone
TELEX	teletype exchange
TEMP	temperature; temporary
Tenn.	Tennessee
TEPCO	Tokyo Electric Power Company
TEST	Thesaurus of Engineering and Scientific Terms
Tex.	Texas
TFT	thin film technology; thin film transistor
TFTP	Trivial File Transfer Protocol
TGA	truevision Targa
THD	total harmonic distortion
theol.	theological; theology
THIC	Tape Head Interface Committee
TI	Texas Instruments; tone index
TIA	Telecommunications Industry Association
TIAAP	Telecommunications and Information Infrastructure Assistance Program
TIFF	tagged image file format
TIGA	Texas Instrument Graphics Architecture
TIGER	topologically integrated geographic coding and referencing
TIRIS	Texas Instruments Registration and Identification System
TLA	three letter acronym
TLI	Transport Level Interface; Transport Library Interface
TMN	telecommunications management network
TMSF	times, minutes, seconds and frames
TN	Tennessee
TOC	table of content
TOD	Time of Day
TOF	top-of-file
TOHO	tiny office home office
TOP	Technical Office Protocol
Top	Temporarily out of print
TOPS	Tone Operated Power Switch
TOS	tape operating system;

Tos	Tramiel operating system	typog.	typographical
TOS	Temporarily out of stock		
TOV	Transparent Optical Software		
TP	Transmissive Optical Videodisc teleprocessing; terminal portability; twisted-pair cable		
TPA	transient program area		
TPC	text processing center; Transaction Processing Council; transparent photoconductor film		
TPD	tape packing density		
tpi	tracks per inch		
TPM	third party maintenance		
TPS	tape program search; thermally processed silver		
TQC	total quality control		
TQM	task queue management; total quality management		
TR	terminal ready		
tr.	transactions; translation; translator		
TRN	token ring-network		
TRS	time reference signal		
trs.	transpose		
TRSDOS	TRS Computer Disk Operating System Standard		
TSAPI	telephony service application interface		
Tsapi	telephony services applications programming interface		
TSAT	T1 small aperture terminal		
TSCL	time sharing command language		
TSO	time sharing option		
TSR	terminate-and-stay-resident program		
TSS	Time-Sharing System		
TST	Triple Super Twist		
TSTN	triple super twisted nematic		
TTE	transient tape errors		
TTFN	ta-ta-for-now (goodbye)		
TTI	Transitional Technology Inc.		
TTL	transistor-transistor logic; trough the lens		
TTP	tape-to-printer		
TTS	teletypesetter; teletypesetting; Transaction Tracking System		
tts.	teletypesetting		
TTU	Tape Test Utility		
TTY	teletype; teletypewriter		
TU	tape unit		
TUP	telephone user part		
TUT	transistor under test		
TV	television		
TVT	television typewriter		
TWA	terminal working area		
TWAIN	technology without an important name		
TWT	Travelling Wave Tube		
TX	Texas		
TXD	Transmit Data		
TXT	text		
			<b>U</b>
		U	underflow
		u	mu (micro 10 <sup>-6</sup> )
		U&LC	upper case and lower case
		U.K.	United Kingdom
		U.S.	United States
		U.S.S.R.	Union of Soviet Socialist Republics
		UAE	Unrecoverable Application Error
		UAP	Universal Availability of Publications
		UART	universal asynchronous receiver-transmitter
		UBC	Universal Bibliographic Control
		UBE	upper band edge
		UC	upper case
		UCA	under color addition
		UCC	universal classification system
		UCR	under color removal
		UCS	universal character set; uniform chromaticness scale
		UCSD	University of California at San Diego
		UD	ultra density
		UDC	universal decimal classification
		UDP	user datagram protocol
		UDTV	ultra high definition television
		UF	used for
		UHF	Ultra high Frequency
		uhr	ultrahigh reduction
		UIMS	User Interface Management System
		UKMARC	United Kingdom Machine-Readable Cataloging
		Ukr.	Ukraine; Ukrainian
		ULC	Urban Libraries Council
		ULL	Underwriters Laboratories Listed
		ULSI	ultra large scale integration
		ult.	ultimo; last
		UMA	upper memory area
		UMB	Upper Memory Block
		UMI	University Microfilm Incorporated
		UNA	universal network architecture
		UNC	University of North Carolina
		UND	University of North Dakota
		UNDIS	United Nations Documentation Information System
		UNESCO	United Nations Educational, Scientific and Cultural Organization
		UNI	user-network interface
		UNIDO	United Nations Industrial Development Organization
		UNIMARC	Universal MARC Format

UNISIST	United Nations Information System in Science and Technology	Va.	Virginia
univ.	university	VAB	voice answer back
Univ.-verl.	Universitätsverlag	VAC	value added carrier; volts alternating current
UNIX	uniform executive	VAFC	VESA advanced feature connector
UNMA	Unified Network Management Architecture	VAN	value added network; vehicle area network
UNO	universal network object	VANS	value added network services
unpub.	unpublished	VAP	value added process; video access point
UP	University Press	VAR	value added reseller
UPC	Universal Product Code	var.	variant
UPD	update	VAT	value added tax
UPI	Universal Peripheral Interface	VAWP	Voice Activated Word Processor
UPS	uninterruptible power supply	VBNS	Very high-speed Backbone Network Services
URL	Uniform Resource Locator	VBR	variable area network
URN	universal resource name	VBR	variable bit rate
USART	Universal Synchronous/Asynchronous Receiver/Transmitter	VC	video conferencing; virtual container
USB	Universal Serial Bus	VCA	video capture adapter
USC	United States Code	VCC	Virtual Channel Connection
USCEA	US Council for Energy Awareness	VCE	visual color efficiency
USDC	US display consortium	VCO	voltage-controlled oscillator
USENET	USEr NETwork	VCPI	Virtual Control Program Interface
USERID	user identification	VCR	Video Cassette Recorder
USITC	US International Trade Commission	VCS	virtual computing system
USL	UNIX System Laboratories	VDD	virtual device driver
USM	unsharp masking	VDE	vertical doping engineering; voice data entry
USMARC	United States MARC	VDI	Video Display Input; video display interface
USPTO	US Patent and Trademark Office	VDL	Vienna Definition Language
USRT	universal synchronous receiver-transmitter	VDM	Video Display Metafile; virtual DOS machine
UT	Utah	VDP	Video Display Processor
UTC	universal teletex controller	VDS	video direct slot
UTIL	utility	VDT	video display terminal
UTP	unshielded twisted pair	VDU	video display unit
UTP	unshielded twisted-pair cable	VE	virtual environment
UTS	ultimedia tools series	VEMM	virtllal expanded memoly manager
UUCP	UNIX-to-UNIX CoPy	Ver.	version
UUCP	UNIX-to-UNIX copy program	Verl.	Verlag
UUS	user-to-user signaling	VESA	Video Electronics Standards Association
UUT	unit under test	VFN	vendor feature node
UV	ultraviolet	VFS	Virtual File System
UV PROM	ultraviolet programmable read-only memory	VfW	video for Windows
UV ROM	ultraviolet read-only memory	VGA	Video Graphics Array; visual graphics adaptor
<b>V</b>			
V	version; volt	VGC	Video Graphics Color
v.	versus; against; vide; see; vice; in lace of; violino; violin; voce; voice; Volume	VGM	Video Graphics Monochrome
v.d.	various dates	VHD	very high density; Video High Density
V.I.	Virgin Islands	VHF	very high frequency
V/F	Voltage to Frequency Converter	vhf	very high resuction
VA	video amplifier; Virginia; voltampere	VHS	Video-home system
		VHSIC	very-high-speed integrated circuit
		VI	Virgin Islands
		VI&P	visual, intelligent & personal



WOOD	Write-Once Optical Disc
WORM	write once, read many
WOSA	Windows Open System Architecture
WP	word processing
WPG	WordPerfect Graphic format
wpm	words per minute
WPMA	Windows and Presentation Manager Association
WPOM	word processing-output microfilm
WPS	Word Processing System
WS	workstation
WSF	workstation function
WV	West Virginia; Working Voltage
WVP	wireless voice platform
WWR	write while read
WWW	World Wide Web
WXmodem	Windowed-Xmodem
WY	Wyoming
WYNIWYG	what you need is what you get
Wy.	Wyoming
WYSIWYG	What You See Is What You Get
WYSYHYG	what you see you hope you get

## X

x	see from; data transfer rate from CD-ROM equals 150KByte/scc
XA	extended architecture
XAPIA	X.400 api association
XCMD	external command
XDS	X/Open Directory Service
Xerox PARC	Xerox Palo Alto Research Center
XFCN	external function
XGA	Extended Graphics Adapter; Extended Graphics Array
XIP	execute in place
XIS	Xerox imaging system
XMIT	Transmit
XMOS	High-speed Metal Oxide Semi-conductor
XMS	Extended Memory Specification
XMT	Transmit
XNS	Xerox Network System
X-OFF	transmitter off
X-ON	transmitter on
XOR	exclusive OR
XPG	X/open portability guide
XPT	external page table
XR	external reset
XSMD	extended storage module drive interface
XT	extended technology
XT keyboard	PC/XT keyboard
XTAL	crystal
xx	see also from

## Y

Y	yellow
YALSA	Young Adult Library Services Association (ALA division)
yd	yard
YMC	yellow, magenta and cyan
YMCK	yellow, magenta, cyan and black
YMD	year/month/day
Yukon	Yukon Territory
YTD	year to date
YUV	intensity, hue and value

## Z

ZAB	zinc air battery
ZBB	zero-base budgeting
ZDS	Zenith Data System
Zeits.	Zeitschrift
ZIF	Zero Insertion Force
ZIF socket	Zero Insertion Force socket
ZIP	Zone Information Protocol
ZIT	Zone Information Table
ZMA	Zone Multicast Address

## Appendix B

# Selected Library and Information Science Listservs and Discussion Groups

There are many LISTSFRVs and discussion groups that deal with library and information science. They can often be identified by examining the home pages of various library and information science organizations.

AALLNET	American Association of Law Librarians (AALL)
ACRL-FRM	Association of College and Research Library Forum (ALA)
ALAOIF	Office of Intellectual Freedom (ALA)
ALASC-L	Student chapters of ALA
ALA-WON	ALA Washington Office Newslite
ALAWORLD	International Relations Round Table (ALA)
ALSC-L	Association for Library Service to Children (ALA)
ARCHIVES	Society of American Archivists
ARL-EJOURNAL	Association of Research Libraries (Discussion of management of electronic journals).
ARL-ERESERVE	Association of Research Libraries (Discussion of the management of electronic reserves)
ARLIS-L	Art Library Societies
ASIS-L	American Society for Information Science (ASIS)
ELMSS	American Association of Library Media Specialist (ALA)
EURSLA-I	SLA International Relations Committee (SLA)
FUBLIB	Public library issues
INFOLIT	National Forum on Information Literacy (ALA)
JESSE	Association for Library and Information Science Education
LITA-L	Library and Information Technology (ALA)
MARS-L	RUSA Machine Assisted Reference Section (ALA)
MFDLIB-L	Medical Library Association (MLA)
MLA-L	Music Library Association
PUBYAC	Youth services issues
SLAGR	SLA Governmental Relations (SLA)
SLMS21ST	School Library Media Specialist in the 21st Century (ALA)
YALSA-L	Young Adult Library Services Association (ALA)

## Appendix C

### ASCII Character Set

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	00	NUL (Null)	34	22	"	68	44	D
1	01	SOH (Start of heading)	35	23	#	69	45	E
2	02	STX (Start of text)	36	24	\$	70	46	F
3	03	ETX (End of text)	37	25	%	71	47	G
4	04	EOT (End of transmission)	38	26	&	72	48	H
5	05	ENQ (Enquiry)	39	27	'	73	49	I
6	06	ACK (Acknowledge)	40	28	(	74	4A	J
7	07	BEL (Bell)	41	29	)	75	4B	K
8	08	BS (Backspace)	42	2A	*	76	4C	L
9	09	HT (Horizontal tab)	43	2B	+	77	4D	M
10	0A	LF (Linefeed)	44	2C	,	78	4E	N
11	0B	VT (Vertical tab)	45	2D	-	79	4F	O
12	0C	FF (Formfeed)	46	2E	.	80	50	P
13	0D	CR (Carriage return)	47	2F	/	81	51	Q
14	0E	SO (Shift out)	48	30	0	82	52	R
15	0F	SI (Shift in)	49	31	1	83	53	S
16	10	DLE (Data link escape)	50	32	2	84	54	T
17	11	DC1 (Device control 1)	51	33	3	85	55	U
18	12	DC2 (Device control 2)	52	34	4	86	56	V
19	13	DC3 (Device control 3)	53	35	5	87	57	W
20	14	DC4 (Device control 4)	54	36	6	88	58	X
21	15	NAK (Negative acknowledge)	55	37	7	89	59	Y
22	16	SYN (Synchronous idle)	56	38	8	90	5A	Z
23	17	ETB (End transmission block)	57	39	9	91	5B	[
24	18	CAN (Cancel)	58	3A	:	92	5C	\
25	19	EM (End of medium)	59	3B	;	93	5D	]
26	1A	SUB (Substitute)	60	3C	<	94	5E	^
27	1B	ESC (Escape)	61	3D	=	95	5F	_
28	1C	FS (File separator)	62	3E	>	96	60	`
29	1D	GS (Group separator)	63	3F	?	97	61	a
30	1E	RS (Record separator)	64	40	@	98	62	b
31	1F	US (Unit separator)	65	41	A	99	63	c
32	20	<space>	66	42	B	100	64	d
33	21	!	67	43	C	101	65	e

## Appendix C

### ASCII Character Set

Dec	Hex	Char									
102	66	f	110	6E	n	118	76	v	126	7E	~
103	67	g	111	6F	o	119	77	w	127	7F	DEL (Delete)
104	68	h	112	70	p	120	78	x			
105	69	i	113	71	q	121	79	y			
106	6A	j	114	72	r	122	7A	z			
107	6B	k	115	73	s	123	7B	{			
108	6C	l	116	74	t	124	7C	~			
109	6D	m	117	75	u	125	7D				

## Appendix D

### IBM Extended Character Set

Dec	Hex	Cbar									
128	80	Ç	156	9C	£	184	B8	ƒ	212	D4	ℓ
129	81	ü	157	9D	¥	185	B9	‡	213	D5	ƒ
130	82	é	158	9E	₽	186	BA	‖	214	D6	π
131	83	â	159	9F	f	187	BB	‡	215	D7	‡
132	84	ä	160	A0	á	188	BC	‡	216	D8	‡
133	85	à	161	A1	í	189	BD	‡	217	D9	‡
134	86	ã	162	A2	ó	190	BE	‡	218	DA	‡
135	87	ç	163	A3	ú	191	BF	‡	219	DB	■
136	88	ê	164	A4	ñ	192	C0	ℓ	220	DC	■
137	89	ë	165	A5	Ñ	193	C1	ℓ	221	DD	‡
138	8A	è	166	A6	ª	194	C2	‡	222	DE	‡
139	8B	ï	167	A7	º	195	C3	‡	223	DF	■
140	8C	î	168	A8	¿	196	C4	—	224	E0	α
141	8D	ì	169	A9	ƒ	197	C5	‡	225	E1	β
142	8E	Ä	170	AA	ƒ	198	C6	‡	226	E2	Γ
143	8F	Å	171	AB	¼	199	C7	‡	227	E3	π
144	90	É	172	AC	¼	200	C8	ℓ	228	E4	Σ
145	91	æ	173	AD	ı	201	C9	‡	229	E5	σ
146	92	Æ	174	AE	«	202	CA	‡	230	E6	μ
147	93	ô	175	AF	»	203	CB	‡	231	E7	τ
148	94	ö	176	B0	∞	204	CC	‡	232	E8	Φ
149	95	ò	177	B1	∞	205	CD	‡	233	E9	Θ
150	96	û	178	B2	■	206	CE	‡	234	EA	Ω
151	97	ù	179	B3		207	CF	‡	235	EB	δ
152	98	ÿ	180	B4	‡	208	D0	‡	236	EC	∞
153	99	Ö	181	B5	‡	209	D1	‡	237	ED	φ
154	9A	Û	182	B6	‡	210	D2	‡	238	EE	ε
155	9B	ç	183	B7	‡	211	D3	ℓ	239	EF	∞

## Appendix D IBM Extended Character Set

<i>Dec</i>	<i>Hex</i>	<i>Char</i>									
240	F0	≡	244	F4	∫	248	F8	○	252	FC	η
241	F1	±	245	F5	∫	249	F9	●	253	FD	ι
242	F2	≥	246	F6	÷	250	FA	•	254	FE	•
243	F3	≤	247	F7	≈	251	FB	√	255	FF	

## Appendix E

### Apple Macintosh Extended Character Set

<i>ASCII</i>	<i>Hex</i>	<i>Times</i>	<i>New York</i>	<i>Courier</i>	<i>Zapf Dingbats</i>	<i>Symbol</i>
128	80	À	À	À	(	
129	81	Á	Á	Á	)	
130	82	Ç	Ç	Ç	(	
131	83	È	È	È	)	
132	84	Ñ	Ñ	Ñ	(	
133	85	Ö	Ö	Ö	)	
134	86	Û	Û	Û	<	
135	87	á	á	á	>	
136	88	à	à	à	{	
137	89	â	â	â	}	
138	8A	ä	ä	ä	!	
139	8B	ã	ã	ã	~	
140	8C	â	â	â	{	
141	8D	ç	ç	ç		
142	8E	é	é	é		
143	8F	è	è	è		
144	90	ê	ê	ê		
145	91	ë	ë	ë		
146	92	í	í	í		
147	93	ì	ì	ì		
148	94	î	î	î		
149	95	ï	ï	ï		
150	96	ñ	ñ	ñ		
151	97	ó	ó	ó		
152	98	ò	ò	ò		
153	99	ô	ô	ô		
154	9A	ö	ö	ö		
155	9B	õ	õ	õ		
156	9C	ú	ú	ú		
157	9D	ù	ù	ù		
158	9E	û	û	û		
159	9F	ü	ü	ü		
160	A0	†	†	†		

## Appendix E Apple Macintosh Extended Character Set

ASCII	Hex	Times	New York	Courier	Zapf Dingbats	Symbol
161	A1	°	°	°	Ⓐ	Y
162	A2	¢	¢	¢	Ⓑ	'
163	A3	£	£	£	Ⓒ	≤
164	A4	§	§	§	Ⓓ	/
165	A5	•	•	•	Ⓔ	∞
166	A6	¶	¶	¶	Ⓕ	f
167	A7	ß	ß	ß	Ⓖ	♣
168	A8	®	®	®	Ⓗ	♦
169	A9	©	©	©	Ⓘ	♥
170	AA	™	™	™	Ⓚ	♠
171	AB	'	'	'	Ⓛ	↕
172	AC	..	..	..	Ⓜ	↕
173	AD	≠	≠	≠	Ⓝ	↑
174	AE	Æ	Æ	Æ	Ⓞ	↕
175	AF	ø	ø	ø	Ⓟ	↓
176	B0	∞	∞	∞	Ⓠ	°
177	B1	±	±	±	Ⓡ	±
178	B2	≤	≤	≤	Ⓢ	"
179	B3	≥	≥	≥	Ⓣ	N
180	B4	¥	¥	¥	Ⓤ	X
181	B5	μ	μ	μ	Ⓥ	R
182	B6	θ	θ	θ	Ⓦ	θ
183	B7	Σ	Σ	Σ	Ⓧ	•
184	B8	Π	Π	Π	Ⓨ	+
185	B9	π	π	π	Ⓩ	π
186	BA	∫	∫	∫	Ⓚ	#
187	BB	±	±	±	Ⓛ	!
188	BC	°	°	°	Ⓜ	∴
189	BD	Ω	Ω	Ω	Ⓨ	—
190	BE	æ	æ	æ	Ⓩ	—
191	BF	ø	ø	ø	Ⓚ	↑
192	C0	¿	¿	¿	Ⓛ	X
193	C1	¡	¡	¡	Ⓜ	Y
194	C2	¬	¬	¬	Ⓨ	Z
195	C3	√	√	√	Ⓩ	Ⓢ
196	C4	f	f	f	Ⓚ	Ⓢ
197	C5	≈	≈	≈	Ⓛ	Ⓢ
198	C6	Δ	Δ	Δ	Ⓧ	Ⓢ
199	C7	«	«	«	Ⓨ	Ⓢ
200	C8	»	»	»	Ⓩ	Ⓢ
201	C9	...	...	...	Ⓚ	Ⓢ
202	CA	—NBSP (nonbreaking space)—			Ⓛ	Ⓢ
203	CB	À	À	À	Ⓧ	Ⓢ

## Appendix E Apple Macintosh Extended Character Set

ASCII	Hex	Times	New York	Courier	Zapf Dingbats	Symbol
204	CC	Ã	Ã	Ã	ⓐ	©
205	CD	Ô	Ô	Ô	ⓑ	©
206	CE	Œ	Œ	Œ	ⓒ	©
207	CF	œ	œ	œ	ⓓ	©
208	D0	-	-	-	ⓔ	©
209	D1	—	—	—	ⓕ	©
210	D2	“	”	“	ⓖ	©
211	D3	”	”	”	ⓗ	©
212	D4	‘	’	‘	ⓘ	©
213	D5	’	’	’	ⓙ	©
214	D6	÷	+	÷	ⓚ	©
215	D7	◊	◊	◊	ⓛ	©
216	D8	ÿ	ÿ	ÿ	ⓜ	©
217	D9	ÿ	ÿ	ÿ	ⓝ	©
218	DA	/	/	/	ⓞ	©
219	DB	▣	▣	▣	ⓟ	©
220	DC	<	<	<	ⓠ	©
221	DD	>	>	>	ⓡ	©
222	DE	fi	fi	fi	ⓢ	©
223	DF	fi	fi	fi	ⓣ	©
224	E0	‡	‡	‡	ⓤ	©
225	E1	·	·	·	ⓖ	©
226	E2	·	·	·	ⓗ	©
227	E3	”	”	”	ⓘ	©
228	E4	%o	%o	%o	ⓙ	©
229	E5	Â	Â	Â	ⓚ	©
230	E6	Ê	Ê	Ê	ⓛ	©
231	E7	Á	Á	Á	ⓜ	©
232	E8	Ë	Ë	Ë	ⓝ	©
233	E9	È	È	È	ⓞ	©
234	EA	Í	Í	Í	ⓟ	©
235	EB	Î	Î	Î	ⓠ	©
236	EC	Ï	Ï	Ï	ⓡ	©
237	ED	Ì	Ì	Ì	ⓢ	©
238	EE	Ó	Ó	Ó	ⓣ	©
239	EF	Ô	Ô	Ô	ⓤ	©
240	F0			Not Used		
241	F1	Ò	Ò	Ò	ⓖ	©
242	F2	Ú	Ú	Ú	ⓗ	©
243	F3	Û	Û	Û	ⓘ	©
244	F4	Ü	Ü	Ü	ⓙ	©
245	F5	ı	ı	ı	ⓚ	©
246	F6	ˆ	ˆ	ˆ	ⓛ	©

## Appendix E Apple Macintosh Extended Character Set

ASCII	Hex	Times	New York	Courier	Zapf Dingbats	Symbol
247	F7	·	·	·	⤴	}
248	F8	·	·	·	⤵	
249	F9	·	·	·	⤶	
250	FA	·	·	·	⤷	
251	FB	·	·	·	⤸	
252	FC	·	·	·	⤹	
253	FD	·	·	·	⤺	
254	FE	·	·	·	⤻	
255	FF	·	·	·	⤼	}

## Appendix F

### EBCDIC Character Set

<i>Dec</i>	<i>Hex</i>	<i>Name</i>	<i>Character</i>	<i>Meaning</i>
0	00	NUL		Null
1	01	SOH		Start of heading
2	02	STX		Start of text
3	03	ETX		End of text
4	04	SEL		Select
5	05	IIT		Horizontal tab
6	06	RNL		Required new line
7	07	DEL		Delete
8	08	GE		Graphic escape
9	09	SPS		Superscript
10	0A	RPT		Repeat
11	0B	VT		Vertical tab
12	0C	FF		Form feed
13	0D	CR		Carriage return
14	0E	SO		Shift out
15	0F	DI		Shift in
16	10	DLE		Data length escape
17	11	DC1		Device control 1
18	12	DC2		Device control 2
19	13	DC3		Device control 3
20	14	RES/ENP		Restore, enable presentation
21	15	NL		New line
22	16	BS		Backspace
23	17	POC		Program-operator communication
24	18	CAN		Cancel
25	19	EM		End of medium
26	1A	UBS		Unit backspace
27	1B	CU1		Customer use 1
28	1C	IFS		Interchange file separator
29	1D	IGS		Interchange group separator
30	1E	IRS		Interchange record separator
31	1F	IUS/ITB		Interchange unit separator/ intermediate transmission block
32	20	DS		Digit select
33	21	SOS		Start of significance
34	22	FS		Field separator
35	23	WUS		Word underscore
36	24	BYP/INP		Bypass/inhibit presentation
37	25	LF		Line feed

## Appendix F

### EBCDIC Character Set

Dec	Hex	Name	Character	Meaning
38	26	ETB		End of transmission block
39	27	ESC		Escape
40	28	SA		Set attribute
41	29	SFE		Start field extended
42	2A	SM/SW		Set mode/switch
43	2B	CSP		Control sequence prefix
44	2C	MFA		Modify field attribute
45	2D	ENQ		Enquiry
46	2E	ACK		Acknowledge
47	2F	BEL		Bell
48	30			(not assigned)
49	31			(not assigned)
50	32	SYN		Synchronous idle
51	33	IR		Index return
52	34	PP		Presentation position
53	35	TRN		Transparent
54	36	NBS		Numeric backspace
55	37	EOT		End of transmission
56	38	SBS		Subscript
57	39	IT		Indent tab
58	3A	RFF		Required form feed
59	3B	CU3		Customer use 3
60	3C	DC4		Device control 4
61	3D	NAK		Negative acknowledgment
62	3E			(not assigned)
63	3F	SUB		Substitute
64	40	SP		Space
65	41	RSP		Required space
66	42			(not assigned)
67	43			(not assigned)
68	44			(not assigned)
69	45			(not assigned)
70	46			(not assigned)
71	47			(not assigned)
72	48			(not assigned)
73	49			(not assigned)
74	4A		c	
75	4B		.	
76	4C		<	
77	4D		(	
78	4E		+	
79	4F			Logical OR
80	50		&	
81	51			(not assigned)
82	52			(not assigned)
83	53			(not assigned)
84	54			(not assigned)

## Appendix F

### EBCDIC Character Set

<b>Dec</b>	<b>Hex</b>	<b>Name</b>	<b>Character</b>	<b>Meaning</b>
85	55			(not assigned)
86	56			(not assigned)
87	57			(not assigned)
88	58			(not assigned)
89	59			(not assigned)
90	5A		!	
91	5B		\$	
92	5C		.	
93	5D		)	
94	5E		;	
95	5F		¬	Logical NOT
96	60		-	
97	61		/	
98	62			(not assigned)
99	63			(not assigned)
100	64			(not assigned)
101	65			(not assigned)
102	66			(not assigned)
103	67			(not assigned)
104	68			(not assigned)
105	69			(not assigned)
106	6A			Broken pipe
107	6B		,	
108	6C		%	
109	6D		_	
110	6E		>	
111	6F		?	
112	70			(not assigned)
113	71			(not assigned)
114	72			(not assigned)
115	73			(not assigned)
116	74			(not assigned)
117	75			(not assigned)
118	76			(not assigned)
119	77			(not assigned)
120	78			(not assigned)
121	79		`	Grave accent
122	7A		:	
123	7B		#	
124	7C		@	
125	7D		'	
126	7E		=	
127	7F		"	
128	80			(not assigned)
129	81		a	
130	82		b	
131	83		c	

## Appendix F

### EBCDIC Character Set

<i>Dec</i>	<i>Hex</i>	<i>Name</i>	<i>Character</i>	<i>Meaning</i>
132	84		d	
133	85		e	
134	86		f	
135	87		g	
136	88		h	
137	89		i	
138	8A			(not assigned)
139	8B			(not assigned)
140	8C			(not assigned)
141	8D			(not assigned)
142	8E			(not assigned)
143	8F			(not assigned)
144	90			(not assigned)
145	91		j	
146	92		k	
147	93		l	
148	94		m	
149	95		n	
150	96		o	
151	97		p	
152	98		q	
153	99		r	
154	9A			(not assigned)
155	9B			(not assigned)
156	9C			(not assigned)
157	9D			(not assigned)
158	9E			(not assigned)
159	9F			(not assigned)
160	A0			(not assigned)
161	A1		~	
162	A2		s	
163	A3		t	
164	A4		u	
165	A5		v	
166	A6		w	
167	A7		x	
168	A8		y	
169	A9		z	
170	AA			(not assigned)
171	AB			(not assigned)
172	AC			(not assigned)
173	AD			(not assigned)
174	AE			(not assigned)
175	AF			(not assigned)
176	B0			(not assigned)
177	B1			(not assigned)
178	B2			(not assigned)

## Appendix F EBCDIC Character Set

<i>Dec</i>	<i>Hex</i>	<i>Name</i>	<i>Character</i>	<i>Meaning</i>
179	B3			(not assigned)
180	B4			(not assigned)
181	B5			(not assigned)
182	B6			(not assigned)
183	B7			(not assigned)
184	B8			(not assigned)
185	B9			(not assigned)
186	BA			(not assigned)
187	BB			(not assigned)
188	BC			(not assigned)
189	BD			(not assigned)
190	BE			(not assigned)
191	BF			(not assigned)
192	C0		{	Opening brace
193	C1		A	
194	C2		B	
195	C3		C	
196	C4		D	
197	C5		E	
198	C6		F	
199	C7		G	
200	C8		H	
201	C9		I	
202	CA	SHY		Syllable hyphen
203	CB			(not assigned)
204	CC			(not assigned)
205	CD			(not assigned)
206	CE			(not assigned)
207	CF			(not assigned)
208	D0		}	Closing brace
209	D1		J	
210	D2		K	
211	D3		L	
212	D4		M	
213	D5		N	
214	D6		O	
215	D7		P	
216	D8		Q	
217	D9		R	
218	DA			(not assigned)
219	DB			(not assigned)
220	DC			(not assigned)
221	DD			(not assigned)
222	DE			(not assigned)
223	DF			(not assigned)
224	E0			Reverse slash
225	E1	NSP		Numeric space

## Appendix F EBCDIC Character Set

<i>Dec</i>	<i>Hex</i>	<i>Name</i>	<i>Character</i>	<i>Meaning</i>
226	E2		S	
227	E3		T	
228	E4		U	
229	E5		V	
230	E6		W	
231	E7		X	
232	E8		Y	
233	E9		Z	
234	EA			(not assigned)
235	EB			(not assigned)
236	EC			(not assigned)
237	ED			(not assigned)
238	EE			(not assigned)
239	EF			(not assigned)
240	F0		0	
241	F1		1	
242	F2		2	
243	F3		3	
244	F4		4	
245	F5		5	
246	F6		6	
247	F7		7	
248	F8		8	
249	F9		9	
250	FA			(not assigned)
251	FB			(not assigned)
252	FC			(not assigned)
253	FD			(not assigned)
254	FE			(not assigned)
255	FF	EO		Eight ones

## Appendix G

### Numeric Equivalents

<i>Decimal (Base 10)</i>	<i>Hexadecimal (Base 16)</i>	<i>Octal (Base 8)</i>	<i>Binary (Base 2)</i>
1	01	01	00000001
2	02	02	00000010
3	03	03	00000011
4	04	04	00000100
5	05	05	00000101
6	06	06	00000110
7	07	07	00000111
8	08	10	00010000
9	09	11	00010001
10	0A	12	00010010
11	0B	13	00010011
12	0C	14	00010100
13	0D	15	00010101
14	0E	16	00010110
15	0F	17	00010111
16	10	20	00100000
17	11	21	00100001
18	12	22	00100010
19	13	23	00100011
20	14	24	00100100
21	15	25	00100101
22	16	26	00100110
23	17	27	00100111
24	18	30	00110000
25	19	31	00110001
26	1A	32	00110010
27	1B	33	00110011
28	1C	34	00110100
29	1D	35	00110101
30	1E	36	00110110
31	1F	37	00110111
32	20	40	00100000
33	21	41	00100001
34	22	42	00100010
35	23	43	00100011
36	24	44	00100100
37	25	45	00100101

## Appendix G Numeric Equivalents

<i>Decimal (Base 10)</i>	<i>Hexadecimal (Base 16)</i>	<i>Octal (Base 8)</i>	<i>Binary (Base 2)</i>
38	26	46	00100110
39	27	47	00100111
40	28	50	00101000
41	29	51	00101001
42	2A	52	00101010
43	2B	53	00101011
44	2C	54	00101100
45	2D	55	00101101
46	2E	56	00101110
47	2F	57	00101111
48	30	60	00110000
49	31	61	00110001
50	32	62	00110010
51	33	63	00110011
52	34	64	00110100
53	35	65	00110101
54	36	66	00110110
55	37	67	00110111
56	38	70	00111000
57	39	71	00111001
58	3A	72	00111010
59	3B	73	00111011
60	3C	74	00111100
61	3D	75	00111101
62	3E	76	00111110
63	3F	77	00111111
64	40	100	01000000
65	41	101	01000001
66	42	102	01000010
67	43	103	01000011
68	44	104	01000100
69	45	105	01000101
70	46	106	01000110
71	47	107	01000111
72	48	110	01001000
73	49	111	01001001
74	4A	112	01001010
75	4B	113	01001011
76	4C	114	01001100
77	4D	115	01001101
78	4E	116	01001110
79	4F	117	01001111
80	50	120	01010000
81	51	121	01010001
82	52	122	01010010

## Appendix G Numeric Equivalents

<i>Decimal (Base 10)</i>	<i>Hexadecimal (Base 16)</i>	<i>Octal (Base 8)</i>	<i>Binary (Base 2)</i>
83	53	123	01010011
84	54	124	01010100
85	55	125	01010101
86	56	126	01010110
87	57	127	01010111
88	58	130	01011000
89	59	131	01011001
90	5A	132	01011010
91	5B	133	01011011
92	5C	134	01011100
93	5D	135	01011101
94	5E	136	01011110
95	5F	137	01011111
96	60	140	01100000
97	61	141	01100001
98	62	142	01100010
99	63	143	01100011
100	64	144	01100100
101	65	145	01100101
102	66	146	01100110
103	67	147	01100111
104	68	150	01101000
105	69	151	01101001
106	6A	152	01101010
107	6B	153	01101011
108	6C	154	01101100
109	6D	155	01101101
110	6E	156	01101110
111	6F	157	01101111
112	70	160	01110000
113	71	161	01110001
114	72	162	01110010
115	73	163	01110011
116	74	164	01110100
117	75	165	01110101
118	76	166	01110110
119	77	167	01110111
120	78	170	01111000
121	79	171	01111001
122	7A	172	01111010
123	7B	173	01111011
124	7C	174	01111100
125	7D	175	01111101
126	7E	176	01111110
127	7F	177	01111111

## Appendix G

### Numeric Equivalents

<i>Decimal (Base 10)</i>	<i>Hexadecimal (Base 16)</i>	<i>Octal (Base 8)</i>	<i>Binary (Base 2)</i>
128	80	200	10000000
129	81	201	10000001
130	82	202	10000010
131	83	203	10000011
132	84	204	10000100
133	85	205	10000101
134	86	206	10000110
135	87	207	10000111
136	88	210	10001000
137	89	211	10001001
138	8A	212	10001010
139	8B	213	10001011
140	8C	214	10001100
141	8D	215	10001101
142	8E	216	10001110
143	8F	217	10001111
144	90	220	10010000
145	91	221	10010001
146	92	222	10010010
147	93	223	10010011
148	94	224	10010100
149	95	225	10010101
150	96	226	10010110
151	97	227	10010111
152	98	230	10011000
153	99	231	10011001
154	9A	232	10011010
155	9B	233	10011011
156	9C	234	10011100
157	9D	235	10011101
158	9E	236	10011110
159	9F	237	10011111
160	A0	240	10100000
161	A1	241	10100001
162	A2	242	10100010
163	A3	243	10100011
164	A4	244	10100100
165	A5	245	10100101
166	A6	246	10100110
167	A7	247	10100111
168	A8	250	10101000
169	A9	251	10101001
170	AA	252	10101010
171	AB	253	10101011
172	AC	254	10101100

## Appendix G

### Numeric Equivalentents

<b>Decimal (Base 10)</b>	<b>Hexadecimal (Base 16)</b>	<b>Octal (Base 8)</b>	<b>Binary (Base 2)</b>
173	AD	255	10101101
174	AE	256	10101110
175	AF	257	10101111
176	B0	260	10110000
177	B1	261	10110001
178	B2	262	10110010
179	B3	263	10110011
180	B4	264	10110100
181	B5	265	10110101
182	B6	266	10110110
183	B7	267	10110111
184	B8	270	10111000
185	B9	271	10111001
186	BA	272	10111010
187	BB	273	10111011
188	BC	274	10111100
189	BD	275	10111101
190	BE	276	10111110
191	BF	277	10111111
192	C0	300	11000000
193	C1	301	11000001
194	C2	302	11000010
195	C3	303	11000011
196	C4	304	11000100
197	C5	305	11000101
198	C6	306	11000110
199	C7	307	11000111
200	C8	310	11001000
201	C9	311	11001001
202	CA	312	11001010
203	CB	313	11001011
204	CC	314	11001100
205	CD	315	11001101
206	CE	316	11001110
207	CF	317	11001111
208	D0	320	11010000
209	D1	321	11010001
210	D2	322	11010010
211	D3	323	11010011
212	D4	324	11010100
213	D5	325	11010101
214	D6	326	11010110
215	D7	327	11010111
216	D8	330	11011000
217	D9	331	11011001

## Appendix G

### Numeric Equivalents

<b>Decimal (Base 10)</b>	<b>Hexadecimal (Base 16)</b>	<b>Octal (Base 8)</b>	<b>Binary (Base 2)</b>
218	DA	332	11011010
219	DB	333	11011011
220	DC	334	11011100
221	DD	335	11011101
222	DE	336	11011110
223	DF	337	11011111
224	E0	340	11100000
225	E1	341	11100001
226	E2	342	11100010
227	E3	343	11100011
228	E4	344	11100100
229	E5	345	11100101
230	E6	346	11100110
231	E7	347	11100111
232	E8	350	11101000
233	E9	351	11101001
234	EA	352	11101010
235	EB	353	11101011
236	EC	354	11101100
237	ED	355	11101101
238	EE	356	11101110
239	EF	357	11101111
240	F0	360	11110000
241	F1	361	11110001
242	F2	362	11110010
243	F3	363	11110011
244	F4	364	11110100
245	F5	365	11110101
246	F6	366	11110110
247	F7	367	11110111
248	F8	370	11111000
249	F9	371	11111001
250	FA	372	11111010
251	FB	373	11111011
252	FC	374	11111100
253	FD	375	11111101
254	FE	376	11111110
255	FF	377	11111111