

**ACTUARIAL RESEARCH CLEARING HOUSE
1993 VOL. 3**

***Systematized Access to Information:
An Analysis of the Realizable Potential***

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Atlanta, Georgia
September 14, 1993

SYSTEMATIZED ACCESS TO INFORMATION: AN ANALYSIS OF THE REALIZABLE POTENTIAL

INTRODUCTION

The latter part of this century, and particularly the decade of the nineties, is regarded in many disciplines as the "Information Era." Large quantities of data and information are particularly essential to the actuarial profession, as is the ability to perform research with each new problem that emerges. It therefore appears that the actuary needs a tool so as to be able to access information in a *fast, efficient, and comprehensive* manner.

A computer database is undoubtedly the tool with which to handle the problem. The concept is to create what is referred to herein as an "information database." Such a database would contain a record including some basic information for each publicly available or otherwise potentially useful publication or service. Such publications and services can include reports, studies, papers, brochures, journals, memoranda, pieces of software, on-line services, etc. The basic information for each such publication or service can include the author/editor, title/description, date, physical location, etc. The computer's ability can then be tapped to search, sort, examine, add to, and print the records, in a "hands on" forum right at the actuary's desk.

The concept of an information database is not an unfamiliar one. What is less familiar is the realizable potential of the concept, and how the details of a useful and successful database system can be implemented, at the personal computer level or otherwise.

ANALYSIS

The following concepts should be kept in mind when constructing an information database:

- (1) Basic information about a publication or service can be valuable even if the actuary does not have actual possession of the publication or service within his department or company.
- (2) As part of (1) above, it is often valuable to have access to series of journals and other important information available at a local university library. While the papers and other publications themselves need not be on hand, a record for each journal series, as well as a record for each of the most important papers within each journal series, should be included in the information database. Such records would point the user to the appropriate journal series and volume within the university library. In this manner, the paper can be within reach of the actuary based upon a telephone call and a visit to the library by the actuary's assistant.
- (3) As part of (1) above, it is often valuable to have on hand brochures and listings of publications and services from various industry organizations. Brochures are generally free of charge and can be obtained from a large number of organizations systematically with merely a series of telephone calls for placement on mailing lists. While the publications and services listed in the brochures need not be on hand, a record for each brochure on hand, as well as for each of the most important publications and services offered within each brochure, should be included in the

information database. Such records would point the user to the appropriate brochure so that the publication or service can be within reach of the actuary based upon a telephone call and an overnight package.

- (4) The publications which are on hand within the actuary's department or company need not be in the same physical location provided that a field is included in the database indicating the physical location for each publication.
- (5) The spelling or phraseology of the author, title, subject, or other aspects of the record corresponding to a publication or service should not be material due to the search capabilities of the database software. When formulating a database record which involves a commonly used abbreviation, the searching capabilities of the database can be enhanced if both the abbreviation and the full name are entered, e.g., "AMA" immediately followed by "(American Medical Association)."
- (6) A comments field should be used in the database to indicate any noteworthy comments or idiosyncracies about the publication or service which do not logically fit into one of the other fields.
- (7) An information database should not only be capable of storing records about publications and services, but should also be capable of labeling publications which are on hand within the actuary's department or company. This is particularly true for publications which logically belong in a central filing system on a one-item-to-a-folder basis (e.g., a "documents" library), for which folder labels are essential.

In this fashion, the folder labels will appear with the same wording as in the information database. Thus, a uniform, comprehensive system can be achieved which encompasses both the information database and the physical files.

- (8) An information database should be capable of printing a single record as well as the entire database. The printout of a single record can be a convenient "carrying tool" for use in tracking down the publication.

- (9) As part of (8) above, the printout of a single record can also be useful for insertation into a file for cross-referencing purposes. For example, a publication which is used for a given project generally needs to be filed with that particular project; however, if the publication has potential generic use, it would be desirable to file it in a library of documents, texts, or other publications. An answer to this problem is to enter a record for the publication into the information database, print out the single record, and file the printout into the file for the particular project while filing the publication itself into a library of documents or texts. When the file for the particular project is referred to at a later date, the existence of the record printout within the file will indicate that the publication was used for the project but is now located in the more central location indicated thereon.

- (10) People tend to avoid using things unless they are easy to use. This is particularly true of computer tools, and is more true of the occasional user than of the frequent user. A popular and user-friendly database software environment is therefore recommended for the information database.¹

The ILLUSTRATION section below presents a number of examples demonstrating how the above concepts can be fleshed out.

ILLUSTRATION

The attached exhibits demonstrate several examples of different records within the information database that the author of this writeup has constructed. The examples have been chosen so as to illustrate a variety of different capabilities.

Example 1

The Problem: The actuary is interested in studies and other pertinent information relating to products liability.

The Approach: The actuary calls up his information database and performs a search on the alphabetical sequence *PRODUCT*. (Note that the actuary intentionally searches on *PRODUCT* rather than *PRODUCTS* since he believes that either spelling might be used for a publication.)

¹The author of this writeup has used Lotus 1-2-3[®] to construct the information database demonstrated herein.

The Result: Among other records, the actuary is pointed toward the record shown in the attached Exhibit 1. Note the following fields shown for that record:

- (1) **Author/Editor** - U.S. General Accounting Office.
- (2) **Title/Description** - Product Liability: Verdicts and Case Resolution in Five States.
- (3) **Approximate Date** - 09/01/89.
- (4) **Form** - Report/Study. (Note that the most appropriate classification of each publication or service in this respect is assigned judgmentally by the user.)
- (5) **Frequency per Year** - None. (Note that this is the frequency per year of issue or update, if applicable.)
- (6) **Publicly Available** - Yes. (Note: assigned judgmentally)
- (7) **Physical Location of Original or Copy** - DOCS. (As indicated in the notes which appear in the database and which pertain to the fields, "DOCS" represents a documents library which the actuary has access to within his department.)
- (8) **Approximate Date Original or Copy Placed into CompanyName Library** - Jun-92. (Note that this field can serve a variety of tracking purposes. Note also that "CompanyName" refers to the name of the actuary's company.)

(9) Location to Which to Refer - None. (Note that the use of this field will be demonstrated in subsequent examples.)

(10) Comments - None.

The actuary then goes to his department's *DOCS* or documents library and pulls the folder containing the product liability study.

Example 2

The Problem: The actuary is interested in *Best's Aggregates & Averages, Property-Casualty*, but does not know the date or the availability of the latest version within his department or company.

The Approach: The actuary calls up his information database. Note that the default order of the database is by Author/Editor, by Title/Description. Therefore, the actuary looks up under the Author *Best, A.M.* and the Title *Best's Aggregates & Averages*.

The Result: The actuary views the record shown in the attached Exhibit 2. Among other information, the record indicates that the 1993 version (i.e., data as of 12/31/92) is currently available, and that a copy of that version is located in the TEXTS library, i.e., a library of textbooks and books within the actuary's department.

Example 3

The Problem: The actuary is interested in which actuarial standards apply to the classification of risks.

The Approach: The actuary calls up his information database. The actuary performs a search on the alphabetical sequence *CLASSIF*.

The Result: Among other records, the actuary is pointed toward the record shown in the attached Exhibit 3, Sheet 1. The Author is *ASB (Actuarial Standards Board)*, the Title is *Concerning Risk Classification*, and the Form is *SOP* or statement of principles/position. The actuary notes that the Physical Location field shows up as blank, but that the Location to Which to Refer field reads *ASB Handbook, Actuarial Standard of Practice #12*.

The actuary then looks up in his database under *ASB (Actuarial Standards Board)* for the Author. The actuary finds a record for the *ASB's Handbook of Standards and Guidelines*, as shown in the attached Exhibit 3, Sheet 2. The actuary notes that the form indicated therein is an *SOP Series*, and that the handbook or series is physically located in two locations, *AAA* and *BBB*. These two abbreviations represent the initials of two personnel within the actuary's department, possibly including himself. The actuary then locates the handbook in the "library" at either of *AAA's* or *BBB's* workstations, and subsequently locates *Actuarial Standard of Practice #12* therein.

Note that in this example, the *SOP* did not have a physical location in itself, but did have an existence within a handbook of *SOP's*. The database is formulated this way because it is the handbook and not the *SOP* located therein that the actuary needs to track down.

Example 4

The Problem: The actuary is interested in investigating territorial ratemaking methodologies currently being used in the insurance marketplace for various lines of insurance.

The Approach: The actuary calls up his information database. The actuary performs a search on the alphabetical sequence *TERRITOR*.

The Result: Among other records, the actuary is pointed toward the record shown in the attached Exhibit 4. The Author of the publication shown therein is *Various Commercial Insurance Carriers* and the Title is *Various Rate Filings and Rate & Rule Manuals*. The actuary notes that the Comments field reads *Document Type: Territory Filing* and that the Physical Location field reads *FILINGS*, i.e., a library of publically available insurance rate filings and rate & rule manuals located within the actuary's department.

The actuary may have a separate *FILINGS* information database which is specially designed to keep track of rate filings and manuals on hand. (For example, the fields of the *FILINGS* database can be State, Company Name, Line(s) of Insurance, Subline(s) of Insurance, Filing Date, Effective Date, Type of Document, and Comments.) The actuary then searches the separate *FILINGS* database for the alphabetical sequence *TERRITOR*. The actuary will be pointed toward any territorial filings which are on hand based upon the *Type of Document* field in that *FILINGS* database.

Example 5

The Problem: The actuary is interested in financial data for various insurance companies.

The Approach: The actuary calls up his information database. The actuary performs a search on the alphabetical sequence *FINAN*.

The Result: Among other records, the actuary is pointed toward the record shown in the attached Exhibit 5, Sheet 1. The Author is *NAIC (National Association of Insurance Commissioners)*, and the Title is *InsureNet (Insurance Industry Financial Data On-Line Service)*. The actuary notes that the Physical Location field shows up as blank, but that the Location to Which to Refer field reads *Brochure - NAIC, Publications and Database...*

The actuary then locates the record with *NAIC (National Association of Insurance Commissioners)* as the Author and *Publications and Database Products Catalog* as the Title (see the attached Exhibit 5, Sheet 2). The actuary notes that this brochure is located in the *DOCS* or documents library within his department. The actuary then pulls the brochure, investigates the description and cost of the NAIC on-line service, calls the telephone number provided in the brochure to obtain answers to questions, and acts accordingly.

Example 6

The Problem: The actuary wishes to investigate the topic of insurance company solvency in some detail.

The Approach: The actuary calls up his information database. The actuary performs a search on the alphabetical sequence *SOLVEN*.

The Result: Among other records, the actuary is pointed toward the record shown in the attached Exhibit 6, Sheet 1. The publication shown therein is a paper entitled *Assessing the Solvency and Financial Strength of a General Insurance Company*. Although the Physical Location field shows a blank, the Location to Which to Refer field reads *JIA, 1987, Vol. 113, p. 1*.

The actuary then looks at the notes within the database to find out more about *JIA*. He sees that the notes for the Location to Which to Refer field read as follows:

"For a journal series, note the following abbreviations along with the Author/Editor and Title/Description for the record in this database providing more information (including the location) for the journal series:

JIA - Institute of Actuaries / Journal of the Institute of Actuaries

The actuary then looks up the record with the above Author and Title. He finds the record shown in the attached Exhibit 6, Sheet 2. He notes that the Physical Location field is blank, indicating that no part of the Journal of the Institute of Actuaries series is available within his department or company. However, the Location to Which to Refer field reads *Georgia State University* (i.e., a nearby university library), along with the Library of Congress or LC catalog number .15764.02954.J86. The actuary now has all of the information needed with which to approach the university library to obtain a copy of the paper regarding insurer solvency.

Example 7

The Problem: An actuarial student is in need of laws relating to loss and loss expense reserves, as part of her study for the actuarial examinations.

The Approach: The actuary calls up his information database. This time, the actuary performs a sort (not a search) on the Form field of the database. In this manner, all of the records containing *Laws, etc.* within the Form field can be examined in sequence.

The Result: The actuary looks over all of the *Laws, etc.* records and comes across the record shown in the attached Exhibit 7. The Author of the publication is *New*

York Insurance Laws and the Title is Assets and Deposits; Investments; Loss and Loss Expense Reserves. The Physical Location is DOCS. The actuary then points the student to his department's documents library to obtain the compendium.

Example 8

The Problem: It is six months prior to the events as described in Example 7. As part of a project, the actuary just obtained the compendium described in that example. He wishes to place it into his information database system so that it can be accessed easily at a later date.

The Approach: The actuary calls up his information database. The actuary enters a new record for the new publication. With respect to the new record, the actuary then activates the database command for creating a label for a single record as well as the command for printing a single record.²

The Result: For labeling purposes, a page is printed as shown in the attached Exhibit 8. As shown in that exhibit, only the Author/Editor and Title/Description are printed for labelling purposes. The page can then be used as a folder label in one of a number of different ways. The actuary then hands a folder (including both document and label) to his secretary for filing into his department's *DOCS* or documents library, which is sorted by Author, by Title.

²In his information database in Lotus 1-2-3®, the author of this writeup uses an alt-L macro for labeling purposes and an alt-R macro for record printing purposes.

For record printing purposes, a page is printed as shown in the attached Exhibit 7. The actuary then places this exhibit into the file for the project which brought about the copy of the law compendium. The presence of the page within that file indicates that the law compendium was used for that project but has now been placed in a more useful location so as to be accessible for other projects as well.

CONCLUSION

By utilizing the Physical Location, Location to Which to Refer, and Comments fields of the information database, a number of different types of situations can be handled in pointing the actuary to a useful publication or service.

The attached APPENDIX A shows a printout of the information database constructed by the author of this writeup and demonstrated herein.³ Note that for this purpose, the author has shown only those records described in the above eight examples, and has changed some confidential names to fictitious names.⁴

The information access concept demonstrated herein is applicable to any actuarial discipline as well as to other fields of endeavor.

The concept of an information access system can be an intuitive and practical tool, capable of bringing a world of information to the actuary's fingertips. It can allow the actuary to save large amounts of time and maximize productivity with regard to accessing data and information in the everyday workplace.

³The author of this writeup uses an alt-P macro for purposes of printing his entire Lotus 1-2-3® information database.

⁴As of the time of this writing, the author's information database contained over 3,000 records. The author can perform a demonstration of his complete information database upon request.

Information Access System - Printout for a Single Record

Author/Editor: U.S. General Accounting Office
Title/Description: Product Liability: Verdicts and Case Resolution in Five States
Approximate Date: 09/01/89
Form: Report/Study
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: DOCS
Approximate Date Original or Copy Placed into CompanyName Library: Jun-92
Location to which to Refer: ---
Comments: ---

Information Access System - Printout for a Single Record

Author/Editor: Best, A.M.
Title/Description: Best's Aggregates & Averages, Property-Casualty (1993)
Approximate Date: 12/31/92
Form: Report/Study
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: TEXTS
Approximate Date Original or Copy Placed into CompanyName Library: Sep-93
Location to which to Refer: ---
Comments: ---

Information Access System - Printout for a Single Record

Author/Editor: ASB (Actuarial Standards Board)
Title/Description: Concerning Risk Classification
Approximate Date: 10/12/89
Form: SOP
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: ---
Approximate Date Original or Copy Placed into CompanyName Library: ---
Location to which to Refer: ASB Handbook, Actuarial Std of Practice #12
Comments: ---

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EXHIBIT
SHEET 1

Information Access System - Printout for a Single Record

Author/Editor: ASB (Actuarial Standards Board)
Title/Description: Handbook of Standards and Guidelines
Approximate Date: Various
Form: SOP Series
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: AAA,BBB
Approximate Date Original or Copy Placed into CompanyName Library: Jun-93
Location to which to Refer: ---
Comments: ---

Information Access System - Printout for a Single Record

Author/Editor: Various Commercial Insurance Carriers
Title/Description: Various Rate Filings and Rate & Rule Manuals
Approximate Date: Various
Form: Various
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: FILINGS
Approximate Date Original or Copy Placed into CompanyName Library: Aug-93
Location to which to Refer: ---
Comments: Document Type: Territory Filing

Information Access System - Printout for a Single Record

Author/Editor: NAIC (National Association of Insurance Commissioners)
Title/Description: InsureNet (Insurance Industry Financial Data On-Line Service)
Approximate Date: ---
Form: On-Line Svc
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: ---
Approximate Date Original or Copy Placed into CompanyName Library: ---
Location to which to Refer: Brochure - NAIC, Publications and Database...
Comments: ---

Information Access System - Printout for a Single Record

Author/Editor: NAIC (National Association of Insurance Commissioners)
Title/Description: Publications and Database Products Catalog
Approximate Date: Various
Form: Brochure
Frequency per Year: 1
Publically Available: Yes
Physical Location of Original or Copy: DOCS
Approximate Date Original or Copy Placed into CompanyName Library: Jun-92
Location to which to Refer: ---
Comments: ---

Information Access System - Printout for a Single Record

Author/Editor: Daykin, C. D., et al
Title/Description: Assessing the Solvency and Financial Strength of a General Insurance Co
Approximate Date: 09/01/87
Form: Paper
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: ---
Approximate Date Original or Copy Placed into CompanyName Library: ---
Location to which to Refer: JIA, 1987, Vol. 113, p. 1
Comments: ---

Information Access System - Printout for a Single Record

Author/Editor: Institute of Actuaries
Title/Description: Journal of the Institute of Actuaries
Approximate Date: Various
Form: Journal Series
Frequency per Year: 1
Publically Available: Yes
Physical Location of Original or Copy: ---
Approximate Date Original or Copy Placed into CompanyName Library: ---
Location to which to Refer: Georgia State University, LC# .I5764.02954.186
Comments: Origin: London, England; Dates: 1851-pres.

Information Access System - Printout for a Single Record

Author/Editor: New York Insurance Laws
Title/Description: Assets and Deposits; Investments; Loss and Loss Expense Reserves
Approximate Date: ---
Form: Laws, etc.
Frequency per Year: --
Publically Available: Yes
Physical Location of Original or Copy: DOCS
Approximate Date Original or Copy Placed into CompanyName Library: Jul-93
Location to which to Refer: ---
Comments: Copy provided by BBB Exam 8 (1989)

CompanyName
 DepartmentName

Information Access System

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
Author/Editor	Title/Description	Approximate Date	Form	Freq per Year Available	Publically	Original or Copy	Physical Location of into	Original CompanyName Library	Location to which to Refer	Comments
ASB (Actuarial Standards Board)	Concerning Risk Classification	10/12/89	SOP	--	Yes	---	---	ASB Handbook, Actuarial Std of Practice #12		---
ASB (Actuarial Standards Board)	Handbook of Standards and Guidelines	Various	SOP Series	--	Yes	AAA,BBB	Jun-93			---
Best, A.M.	Best's Aggregates & Averages, Property-Casualty (1993)	12/31/92	Report/Study	--	Yes	TEXTS	Sep-93			---
Daykin, C. D., et al	Assessing the Solvency and Financial Strength of a General Insurance Co	09/01/87	Paper	--	Yes	---	---	JIA, 1987, Vol. 113, p. 1		---
Institute of Actuaries	Journal of the Institute of Actuaries	Various	Journal Series	1	Yes	---	---	Georgia State University, LC# .I5764.02954.I86	Origin: London, England; Dates: 1851-pres.	
NAIC (National Association of Insurance Commissioners)	InsureNet (Insurance Industry Financial Data On-Line Service)	---	On-Line Svc	--	Yes	---	---	Brochure - NAIC, Publications and Database...		---
NAIC (National Association of Insurance Commissioners)	Publications and Database Products Catalog	Various	Brochure	1	Yes	DOCS	Jun-92			---
New York Insurance Laws	Assets and Deposits; Investments; Loss and Loss Expense Reserves	---	Laws, etc.	--	Yes	DOCS	Jul-93			Copy provided by BBB Exam 8 (1989)
U.S. General Accounting Office	Product Liability: Verdicts and Case Resolution in Five States	09/01/89	Report/Study	--	Yes	DOCS	Jun-92			---
Various Commercial Insurance Carriers	Various Rate Filings and Rate & Rule Manuals	Various	Various	--	Yes	FILINGS	Aug-93			Document Type: Territory Filing

NOTES:

(A) - For author names, the full name including middle initial is used whenever known.

(C) - For textbooks, this is generally the latest date of copyright or printing.

(E) - This is the frequency per year of issue or update, if applicable.

(Continued on next page)

EXHIBIT 5

New York Insurance Laws

Assets and Deposits; Investments; Loss and Loss Expense Reserves

(I) - Note the following abbreviations:

AAA - Albert A. Adams (CompanyName DepartmentName Actuary) Library
AS - CompanyName DepartmentName Annual Statements Library
BBB - Brenda B. Boxer (CompanyName DepartmentName Associate Actuary) Library
CCC - Christopher C. Cringle (CompanyName DepartmentName Associate Actuarial Assistant) Library
CN - CompanyName Library
DDD - Darlene D. Davidson (CompanyName DepartmentName Associate Actuarial Technician) Library
DOCS - CompanyName DepartmentName Documents Library
FILINGS - CompanyName DepartmentName Filings Library
MAGS - CompanyName DepartmentName Magazines Library
PROMO - CompanyName DepartmentName Promotional Materials Library
TEXTS - CompanyName DepartmentName Texts Library

(II) - For a journal series, note the following abbreviations along with the Author/Editor and Title/Description for the record in this database providing more information (including the location) for the journal series:

AIIJ - Australian Insurance Institute / Australian Insurance Institute Journal
ARAB - Association Royale des Actuaristes Belges / Bulletin
ASTIN - International Actuarial Association / ASTIN Bulletin
CASDPP - CAS (Casualty Actuarial Society) / Discussion Paper Program
CASP - CAS (Casualty Actuarial Society) / Casualty Actuarial Society forum
CASSIS - CAS (Casualty Actuarial Society) / Special Interest Seminar
CEMSA - Institut des Hautes Etudes de Belgique / Colloque: Les Mathematiques en Sciences Actuarielles
CFCUJ - American Inst for Chartered Prop and Liab Underwriters / CFCU Journal
GIB - Unknown / General Insurance Bulletin
GIRO - General Insurance Study Group / GIRO Bulletin
GIS - Institute of Actuaries of Australia / General Insurance Seminar
IAM - Instituut voor Actuariele Wetenschappen / Katholieke Universiteit te Leuven, Dekenstraat 2, B-3000, Leuven, Belgium
IMA - Institute of Mathematics and its Applications / Unknown
IME - Elsevier Science Publishers / Insurance: Mathematics and Economics
JAP - University of Sheffield - Dept of Probability and Statistics / Journal of Applied Probability (Applied Probability Trust)
JF - John Wiley & Sons, Inc. / Journal of Forecasting
JIA - Institute of Actuaries / Journal of the Institute of Actuaries
JIR - NAIC (National Association of Insurance Commissioners) / Journal of Insurance Regulation
JRI - University of Georgia / Journal of Risk and Insurance
MUSEFS - Macquarie University - School of Econ and Financial Studies / School of Occasional Papers
NRG - Nederlandse Reassurantie Groep N.V. / Unknown

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PCAS - CAS (Casualty Actuarial Society) / PCAS (Proceedings of the Casualty Actuarial Society)
PIASA - Insurance Accounting and Statistical Association / Proceedings of the Insurance Accounting and Statistical Association
SAA - Swiss Association of Actuaries / Bulletin
SAJ - Danish Society of Actuaries, et al / Scandinavian Actuarial Journal
T6ICA - International Actuarial Association / Transactions of the 11th International Congress of Actuaries
TASA - Actuarial Society of America (predecessor of SOA) / Transactions of the Actuarial Society of America
TICA - International Congress of Actuaries / Transactions of the International Congress of Actuaries
TIANZ - Institute of Actuaries of Australia / Transactions of the Institute of Actuaries of Australia and New Zealand
TRBJ - Unknown / The Risk & Benefits Journal
TSA - Society of Actuaries / Transactions of the Society of Actuaries

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