

Organizing the Attic Furnishing the Parlor

Thoughts Moving Forward

Lee Courtney

Software Collection Committee / 1620 Restoration Project

Computer History Museum

Attic & Parlor

- Barriers to Success
- What Does the Data Tell Us?
- Moving Forward

Challenges to Collecting Software Artifacts

- How-To
- Resources
 - Community
 - Management
 - Repository technology (software & hardware)
- Artifact Availability
 - Existence
 - Donor Willingness and Ability
- IP Encumbrances
 - Competitive Considerations
 - Copyright
 - License Restrictions
 - Patents
 - Non-disclosures
 - Ownership

Challenges to Collecting Software Artifacts

- How-To Others working
- Resources Well understood precedents
 - Community
 - Management
 - Repository technology (software & hardware)
- Artifact Availability
 - Existence Really Important!
 - Donor Willingness and Ability Who, concerns?
- IP Encumbrances Really Important!
 - Competitive Considerations
 - Copyright
 - License Restrictions
 - Patents
 - Non-disclosures
 - Ownership

What Does the Data Tell Us?

- Grady's Original List

Classic Software - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

 <http://www.computerhistory.org/cgi-bin/wishlist.cgi> 

[Customize Links](#) [Bugz Home Page](#) [Dictionary.com](#) [LAUNCHcast Radio S...](#) [mail2.computerhistory...](#) [Moontaxi - Tour the U...](#) [Motorola W5AN - finch](#)

CLASSIC SOFTWARE1-25 of 152NextLast

Software Name	Category	Significance	Author/Point of Contact	Source	Suggested by
Aegis	operating system	first network file system	-	-	Michael Fischer
Algol-60 compiler	language	classic language	Edsger Dijkstra, Tony Hoare, Dr.F.E.J.Kruseman Aretz (kruseman@win.tue.nl)	British Computer Society	Jim Rumbaugh, Paul Clements, Andy Tanenbaum, Brian Randell, Richard Brent, Jim Horning, Lance Hoffman
Alto OS	operating system	classic operating system	-	-	Douglas Comer, Jeanette Wing
Amiga Kickstart	operating system	classic operating system	-	-	Ron Jeffries, Jokob Eriksson
Apache	web	classic open source Web product	Brian Belhendorf	-	Grady Booch, Brian Dollery
APL	language	classic language	Iverson	-	Ron Jeffries, Paul Clements, Gene Spafford, Jim Horning, Roger Needham
Apollo navigation system	application	classic/historically significant application	-	-	Jeanette Wing
Atlas OS	operating system	first demand paging operating system	-	-	Gene Spafford
Basic (Dartmouth)	language	classic language	-	-	Gene Spafford, Capers Jones, Gordon Bell
Basic (Gates)	language	classic language	Bill Gates	-	Grady Booch, Gordon Bell
BBN TCP/IP	web	essential application	-	-	Douglas Comer, Carl Kesselman, Jeanette Wing, Bill Chaisson

Done

Refining The List...

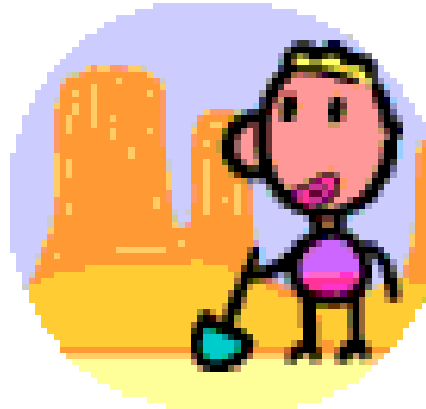
- Weight (importance)
 - Where to concentrate efforts
 - Weight = number of “votes”
- Collection Challenges
 - IP Restrictions
 - Availability
- Imperfect subjective measure

What's Important - Refining Grady's List

<u>Software Name</u>	<u>Weight</u>	<u>Suggested By</u>
Fortran	16	Tony Hoare, Bran Selic, Paul Clements, Gene Spafford, Andy Tanenbaum, Richard Brent, Gordon Bell, Jim Horning, Moshe Vardi, Tom Van Vleck, Lance Hoffman, Jim Gray, David Patterson, Roger Needham, Paul McJones, Watts Humphrey
Unix	14	Jim Rumbaugh, Paul Clements, Gene Spafford, Andy Tanenbaum, Douglas Comer, Tony Wasserman, Gordon Bell, Michael Fischer, Jim Gray, Ralph Johnson, Jeanette Wing, David Patterson, Paul McJones
Multics	10	Jim Rumbaugh, Gene Spafford, Andy Tanenbaum, Ira Pohl, Tony Wasserman, Richard Fateman, Michael Fischer, Tom Van Vleck, Peter Neuman, David Patterson
VisiCalc	10	Grady Booch, Tony Wasserman, Capers Jones, Gordon Bell, Michael Fischer, Terry Winograd, Tom Van Vleck, Jim Gray, Ralph Johnson, Jeanette Wing
Smalltalk-72	9	Bran Selic, Ron Jeffries, Douglas Comer, Tony Wasserman, Gordon Bell, Terry Winograd, Ward Cunningham, Jeanette Wing, Bill Chaisson
OS/360	8	Grady Booch, Ron Jeffries, Paul Clements, Gene Spafford, Tim Daly, Capers Jones, Jim Gray, Watts Humphrey
Mosaic	7	Rick Kazman, Carl Kesselman, Dale Dehemery, Capers Jones, Gordon Bell, Jeanette Wing, David Patterson
Algol-60 compiler	7	Jim Rumbaugh, Paul Clements, Andy Tanenbaum, Brian Randell, Richard Brent, Jim Horning, Lance Hoffman
Lisp 1.5	7	Jim Rumbaugh, Ron Jeffries, Gene Spafford, Jim Fischer, Jeanette Wing, David Patterson, Paul McJones
Pascal	7	Andy Tanenbaum, Carl Kesselman, Richard Brent, Jim Horning, Michael Fischer, Paul McJones, Bill Chaisson
C	6	Ron Jeffries, Richard Brent, Gordon Bell, Michael Fischer, Paul McJones, Bill Chaisson
TeX	6	Maria Klawe, Dale Dehemery, Dossy Shiobara, Terry Winograd, Peter Neuman, Paul McJones
DOS	6	Grady Booch, Paul Clements, Andy Tanenbaum, Gordon Bell, Jim Gray, Jeanette Wing
Emacs	5	Jim Rumbaugh, Douglas Comer, Gordon Bell, Peter Neuman, Jeanette Wing
troff	5	Rick Kazman, Andy Tanenbaum, Douglas Comer, Richard Fateman, Moshe Verdi
APL	5	Ron Jeffries, Paul Clements, Gene Spafford, Jim Horning, Roger Needham
Bravo	5	Jim Horning, Jim Gray, Jeanette Wing, David Patterson, Paul McJones
COBOL	5	Gordon Bell, Moshe Vardi, Jim Gray, Paul McJones, Watts Humphrey
Mac OS	5	Grady Booch, Gene Spafford, Douglas Comer, Gordon Bell, Paul McJones
Pong	5	Grady Booch, Gene Spafford, Capers Jones, Jeanette Wing, David Patterson

What Does This Mean?

- Great! Dig Here!



- Where Do Artifacts Come From?
- Appearance From Donor Side?

Who, Concerns, and IP – Impact

<u>Software Name</u>	<u>IP Owner</u>	<u>Weight</u>
Fortran		16
Unix (AT&T and Berkeley)		14
Multics		10
VisiCalc		10
Smalltalk-72		9
OS/360		8
Mosaic		7
Algol-60 compiler		7
Lisp 1.5		7
Pascal		7
C		6
TeX		6
DOS		6
Emacs		5
troff		5
APL		5
Bravo		5
COBOL		5
Mac OS		5
Pong		5

Who, Concerns, and IP – Impact

<u>Software Name</u>	<u>IP Owner</u>	<u>Weight</u>
Fortran	IBM	16
Unix (AT&T and Berkeley)	ATT & U. of California	14
Multics	Bull	10
VisiCalc	unknown	10
Smalltalk-72	Xerox?	9
OS/360	IBM	8
Mosaic	U. of Illinois	7
Algol-60 compiler	unknown	7
Lisp 1.5	unknown	7
Pascal	unknown	7
C	ATT	6
TeX	SRI	6
DOS	Microsoft	6
Emacs	unknown	5
troff	unknown	5
APL	IBM	5
Bravo	Xerox?	5
COBOL	IBM	5
Mac OS	Apple	5
Pong	unknown	5

Who, Concerns, and IP – Impact

<u>Software Name</u>	<u>IP Owner</u>	<u>Source State</u>	<u>Weight</u>
Fortran	IBM		16
Unix (AT&T and Berkeley)	ATT & U. of California		14
Multics	Bull		10
VisiCalc	unknown		10
Smalltalk-72	Xerox?		9
OS/360	IBM		8
Mosaic	U. of Illinois		7
Algol-60 compiler	unknown		7
Lisp 1.5	unknown		7
Pascal	unknown		7
C	ATT		6
TeX	SRI		6
DOS	Microsoft		6
Emacs	unknown		5
troff	unknown		5
APL	IBM		5
Bravo	Xerox?		5
COBOL	IBM		5
Mac OS	Apple		5
Pong	unknown		5

Classic Software Buckets

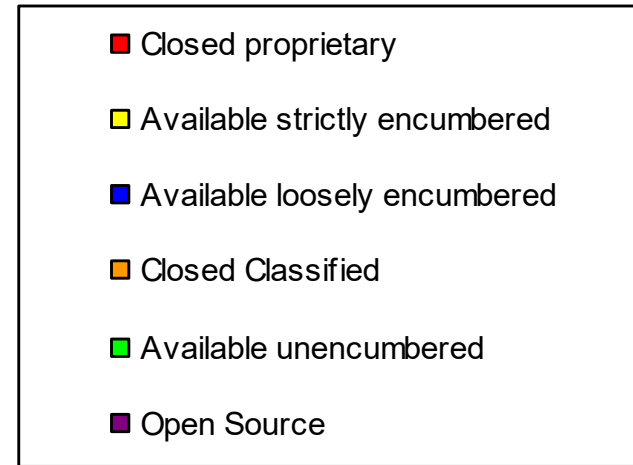
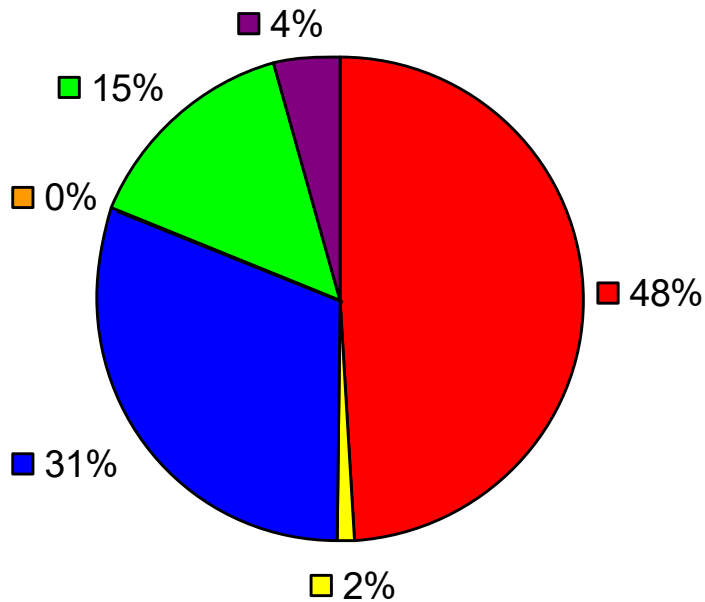
Closed proprietary	Source code not released because of proprietary, competitive, or marketplace concerns. (eg: Windows XP)
Available strictly encumbered	Source code released thru agreement strictly restricting use or redistribution of the source code. (Example: HP MPE-V source code available under source code non-disclosure agreement)
Available loosely encumbered	Source code released after signed agreement loosely restricting use or redistribution. (Example: Educational institution or development consortium software. Precedes contemporary open source)
Available unencumbered	Source code released source code into the public domain with no copyright or other licensing burden. (Example: IBM OS/360?)
Open Source	Source code for the system under any of the open source licenses (GPL, LGPL, BSD, Artistic, etc.).
Closed Classified	System owned by government organization for which source code is not available due to security concerns. (Example: DoD AWACS)
Unknown	Unknown IP encumbrance on original source code.

Who, Concerns, and IP – Impact

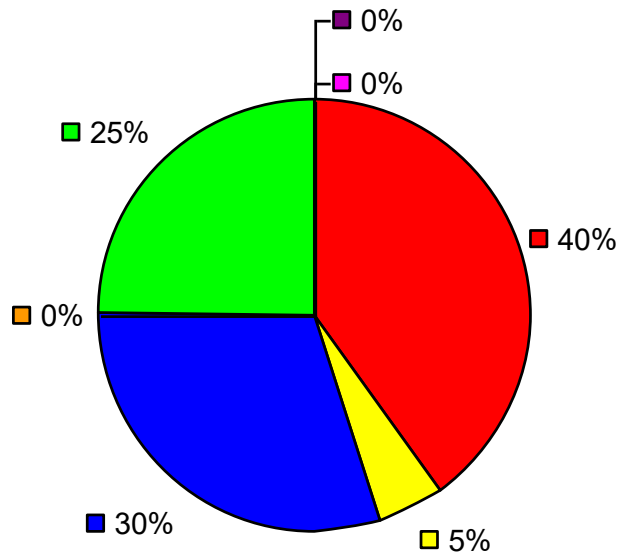
<u>Software Name</u>	<u>IP Owner</u>	<u>Source State</u>	<u>Weight</u>
Fortran	IBM	Available unencumbered	16
Unix (AT&T and Berkeley)	ATT & U. of California	Available strictly encumbered	14
Multics	Bull	Closed proprietary	10
VisiCalc	unknown	Closed proprietary	10
Smalltalk-72	Xerox?	Available loosely encumbered	9
OS/360	IBM	Available unencumbered	8
Mosaic	U. of Illinois	Available loosely encumbered	7
Algol-60 compiler	unknown	Available unencumbered	7
Lisp 1.5	unknown	Available unencumbered	7
Pascal	unknown	Available unencumbered	7
C	ATT	Available loosely encumbered	6
TeX	SRI	Available loosely encumbered	6
DOS	Microsoft	Closed proprietary	6
Emacs	unknown	Available loosely encumbered	5
troff	unknown	Available loosely encumbered	5
APL	IBM	Closed proprietary	5
Bravo	Xerox?	Closed proprietary	5
COBOL	IBM	Closed proprietary	5
Mac OS	Apple	Closed proprietary	5
Pong	unknown	Closed proprietary	5

Classic Software – IP Status

All Entries



TOP-20



What Does It Mean?

- Most artifacts from Corporate sector
- Non-trivial IP Challenges

Attic & Parlor from Corporate Donor Side



Attic & Parlor from Corporate Donor Side

Risk

- Insecure
- Liability Exposure
- Expense
- Legal Hassle
- Why Bother?

Attic & Parlor from Corporate Donor Side

Risk

- Insecure
- Liability Exposure
- Expense
- Legal Hassle
- Why Bother?

Mitigation

- Documented Policies and Procedures
- Ownership transfer etc.
- Make donation EASY
- Make donation EASY
- Provide recognition and benefit

Moving Forward

- Attic & Parlor must address Corporate needs:
 - Demonstrate IP understanding
 - Flexible approaches to IP issues
 - Acknowledge Corporate requirements (Even if unencumbered)
- Attic under Parlor Legal Umbrella
- Attractive Incentives to Donate
 - **Significant** Acknowledgement
 - Peace of Mind
 - Benefit(s)
- “Market” Exemplars and success stories (e.g. Augment/NLS and Boeing)

Specific Action Items

- Document successful Corporate donation (e.g. Augment/NLS)
- Survey 2-3 Vendors Regarding Corporate Donations
 - Bull (Multics specifically)
 - Microsoft
 - Unisys
- Develop 2-3 Corporate donation “tests”
 - Apple MacPaint
 - Hewlett-Packard MPE
 - Microsoft Powerpoint
 - IBM APL