

Software Collection & Preservation

Richard P. Gabriel PhD MFA
The Hillside Group, Inc.

Why Preserve?

- architecture and its evolution
- data structures and algorithms
- approaches to problems
- attention to communicating with people
- performance and other tradeoffs
- use of and evolution of programming languages
- coding styles, idioms, and their evolution
- influences from other disciplines and genres
- literature of source code
- critical literature

Deliberate vs Collaborative Collection

- clear historical significance
 - part of historical narrative
 - association with hardware collection
 - issues of the display of software
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- diversity
 - evolution of ideas
 - teaching software design and implementation

Deliberate Collection

- Collection directed and executed by Museum Staff and Advisory Board
- Artifacts are available for scholarly study and display in the Museum
- Collection techniques and guidelines are established by Museum Staff and Advisory Board
- Deliberate Collection
- Principle of Historical Collection
 - the most historically significant software shall be collected before less historically significant
 - the oldest software shall be collected before newer
 - software in danger of being lost shall be collected before software that is safely being held or preserved

Deliberate Collection

- Principle of Unbiased Significance

decisions about what to collect shall not be biased by whether the software was of commercial, industrial, or academic significance

Deliberate Collection

- Principle of Accurate Display

wherever possible, a piece of software shall be displayed and executed in circumstances that approximate as accurately as possible the historical circumstances such a display or execution would have enjoyed

Collaborative Collection

- Nonprofit with a governing board
- Not legally affiliated with the Computer History Museum but acknowledged relationship
- Operates on a set of goals, principles, and guidelines consistent with the Museum
- Membership by agreement to the principles and after a seconded nomination
- Members decide what they will collect
- Primary goal is source code and design documents in machine-readable form
- Annotated artifacts & Restorations (emulators & executable code)
- Concept evolution wiki

Collaborative Collection

- Principle of Unbiased Collection

collection without consideration for the following:

- ❖ type of software
- ❖ programming language
- ❖ approach or philosophy behind the work
- ❖ identity or nature of the developer or development group
- ❖ level of success or failure of the software
- ❖ country or region of origin
- ❖ purpose the software serves
- ❖ architecture, design approach, or methodology
- ❖ time period in which the software was developed
- ❖ media in which the artifact is captured

Collaborative Collection

- Principle of Service

collection of artifacts shall not enrich any party—neither the collectors, the owners, nor anyone claiming fair use

Shared Principles

- Principle of Thorough Collection
- Principle of Precise Recording and Authentication
- Principle of Safekeeping
- Principle of Respect for Ownership
- Principle of Fair Use
- Principle of Transparency

Thorough Collection

- design, requirements, and architectural description documents
- programming language manuals
- whatever may be required to execute the program in the future

Precise Recording and Authentication

- location and time of collection
- name or names of the developers
- the circumstances of its creation
- the chain of possession from creation to collection

Safekeeping

- once collected, an artifact shall be subject to the best effort for long-term preservation

Respect for Ownership

- must be able to gather proprietary, copyrighted, trade secret, or patented software
- provisions shall be made to keep secret and otherwise protect the contents of the artifact to the satisfaction of its owner until it can be released for study and observation

Fair Use

- copies, transcriptions, and descriptions of artifacts shall be available for study and to create derived works
- no bias about who can access the material or how it can be used

Transparency

All aspects of collection shall be open to public scrutiny

- the identities of the members of the collection group
- the principles and practices of collection
- the procedures to exercise fair use
- descriptions of all collected items

Proposal for First Steps

- Refine and agree to principles
- Establish the Collaborative Software Collection Group
- Determine the relationship between the Museum and CSCG
- Select 3–5 pieces of software for the Museum to “practice” on:
 - ❖ commercial, university, research, military, ...
 - ❖ 1950s, 1960s, 1970s, 1980s, 1990s, 2000s
 - ❖ assembler, procedural, functional, OO, ...
 - ❖ games, utilities, applications, frameworks, language implementations, operating systems, ...
 - ❖ USA, Europe, Asia, Soviet, ...
 - ❖ microcode, <1000 lines, 10,000, 100,000, ...

Proposal for First Steps

- Choose 1–3 pieces of software for the CSCG to practice on
- Practice while...
 - ❖ ...writing down procedures and standards for collection
 - ❖ ...reviewing and refining the principles
 - ❖ ...understanding how the Deliberate and Collaborative Collection groups interact
 - ❖ ...determining what else to collect