Librarian's Helper Stoned: Legacy Records, Legacy Viruses
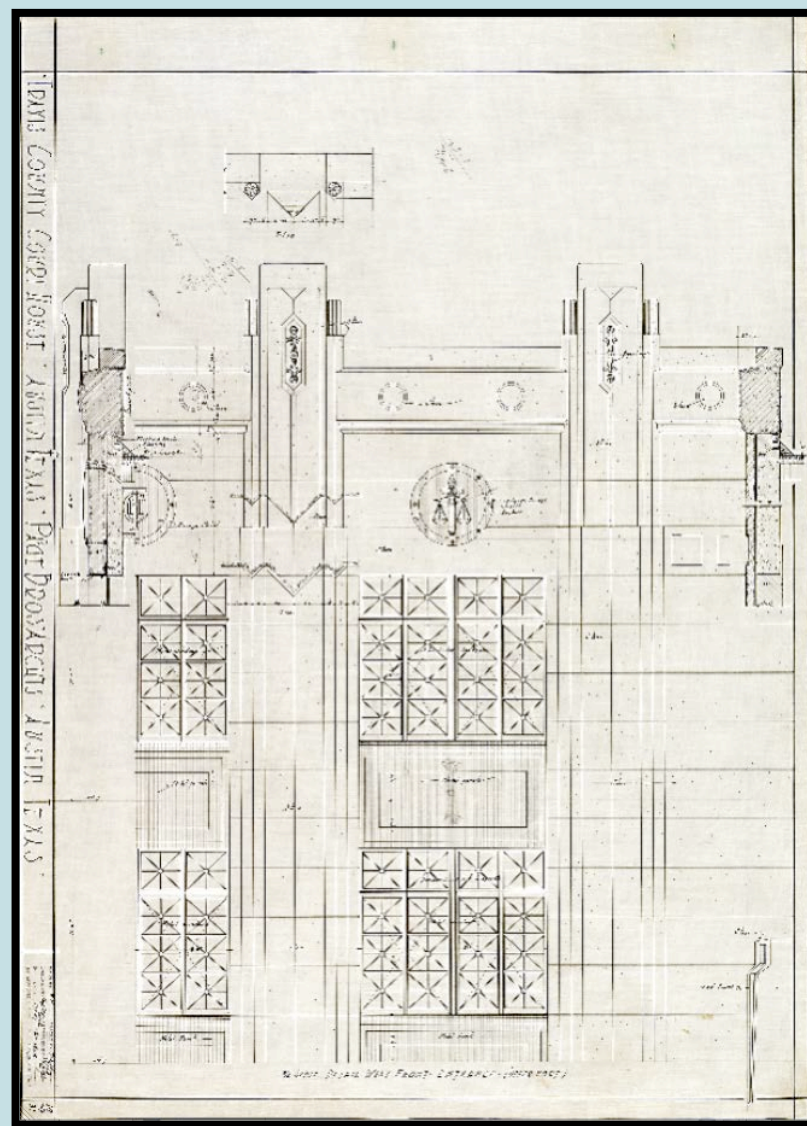
Jane Gruning, Carol Brock, and Kathryn Garvey
School of Information, The University of Texas at Austin

Overview

The Austin History Center is the official repository for the historical records of Austin, Texas, and houses an architectural archives as part of this mission. In the late 1980s the AHC began to use a software program called Librarian's Helper to create card catalog records representing their architectural collections. Recently, the AHC decided to transition to a more modern system for storing their architectural catalog records, but first they needed to retrieve their legacy catalog records from obsolete magnetic storage media. Carol Brock, Kathryn Garvey, and Jane Gruning took on that task as a project for Dr. Patricia Galloway's Problems in the Permanent Retention of Electronic Records course at the University of Texas at Austin School of Information.

Results

With the help of two of our classmates, we were able to retrieve the records from all of the disks (including virus infected disks). Jocelyn Petyak found the Linux command that allowed us to create a text dump of each disk, and because the Librarian's Helper files were essentially plain text, this allowed us to retrieve the catalog records. Mark Cooper wrote a Perl script that stripped the virus code and disk formatting from the record text, and converted that text to .csv files (the format requested by the AHC). Team member Kathryn Garvey built a database for the AHC's architectural catalog records in a separate project.
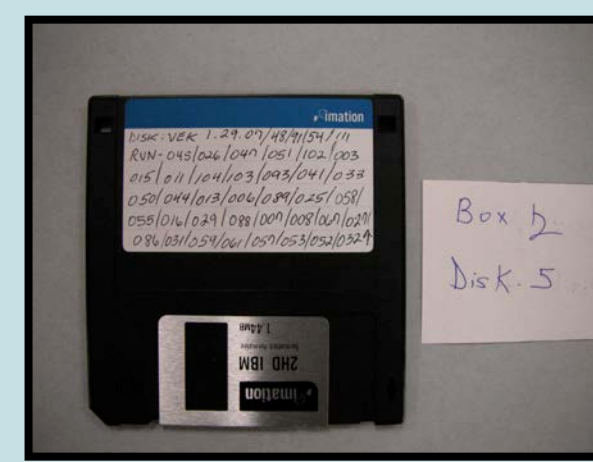

Inventory spreadsheet.

The Records

The Austin History Center's catalog records for their Architectural Archives were all stored on either 3.5" or 5.25" floppy disks. The 3.5" disks were still accessible to the AHC, but they had no way to access and migrate the records that were on the 5.25" disks.

The Formats

"A floppy disk is a disk storage medium composed of a disk of thin and flexible magnetic storage medium, sealed in a rectangular plastic carrier lined with fabric that removes dust particles" (Wikipedia). The Librarian's Helper records were stored on 5.25" and 3.5" floppies.

Tasks and Procedures

Pre-Processing:
• Photograph and inventory all collection materials

Processing:
• Image 5.25 and 3.5 inch floppy disks (create archival copies)
• Generate hash values for each disk image as they are created to ensure authenticity
• Scan for viruses
• Make working copies of the disk images for access
• Migrate recovered files to .csv format

For the processing steps of the project, we used a computer that was built for legacy record retrieval by Russell Corley of the Goodwill Computer Museum in Austin, Texas. This computer, known as "Frankenstein," is essentially a motherboard connected (via a RAID controller) to five different hard drives, each of which runs a different operating system. Several different drives (floppy and optical) were hooked up to Frankenstein to allow access to different types of storage media.

Librarian's Helper

The Austin History Center acquired Librarian's Helper, a computer program created by Scarecrow Press, Inc., in the mid to late 1980s to help create catalog cards for the architectural drawings in the archives. After a set of drawings is cataloged, a staff member or volunteer would input catalog information into the appropriate fields in Librarian's Helper to electronically create catalog records. These records were then printed using a dot matrix printer and filed in the card catalog in the reading room. The Librarian's Helper program saves records in .dat format. This type of file is used by many programs and can hold a variety of types of data, such as text files, images, and videos, but Librarian's Helper uses .dat files essentially as formatted text files.
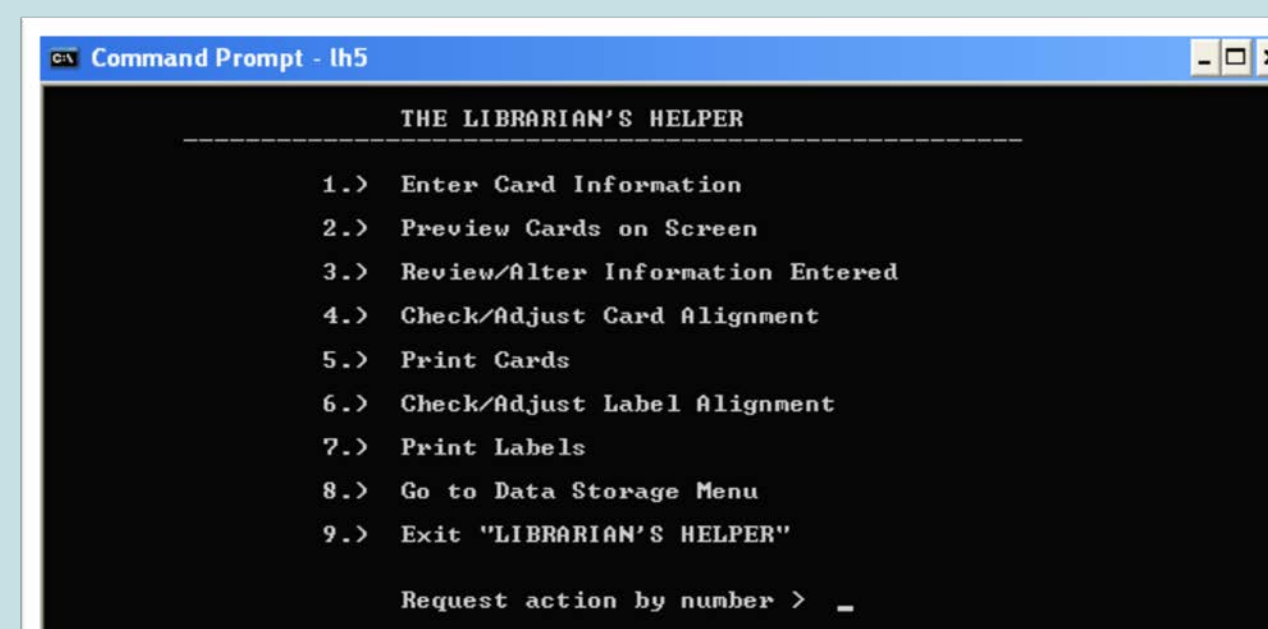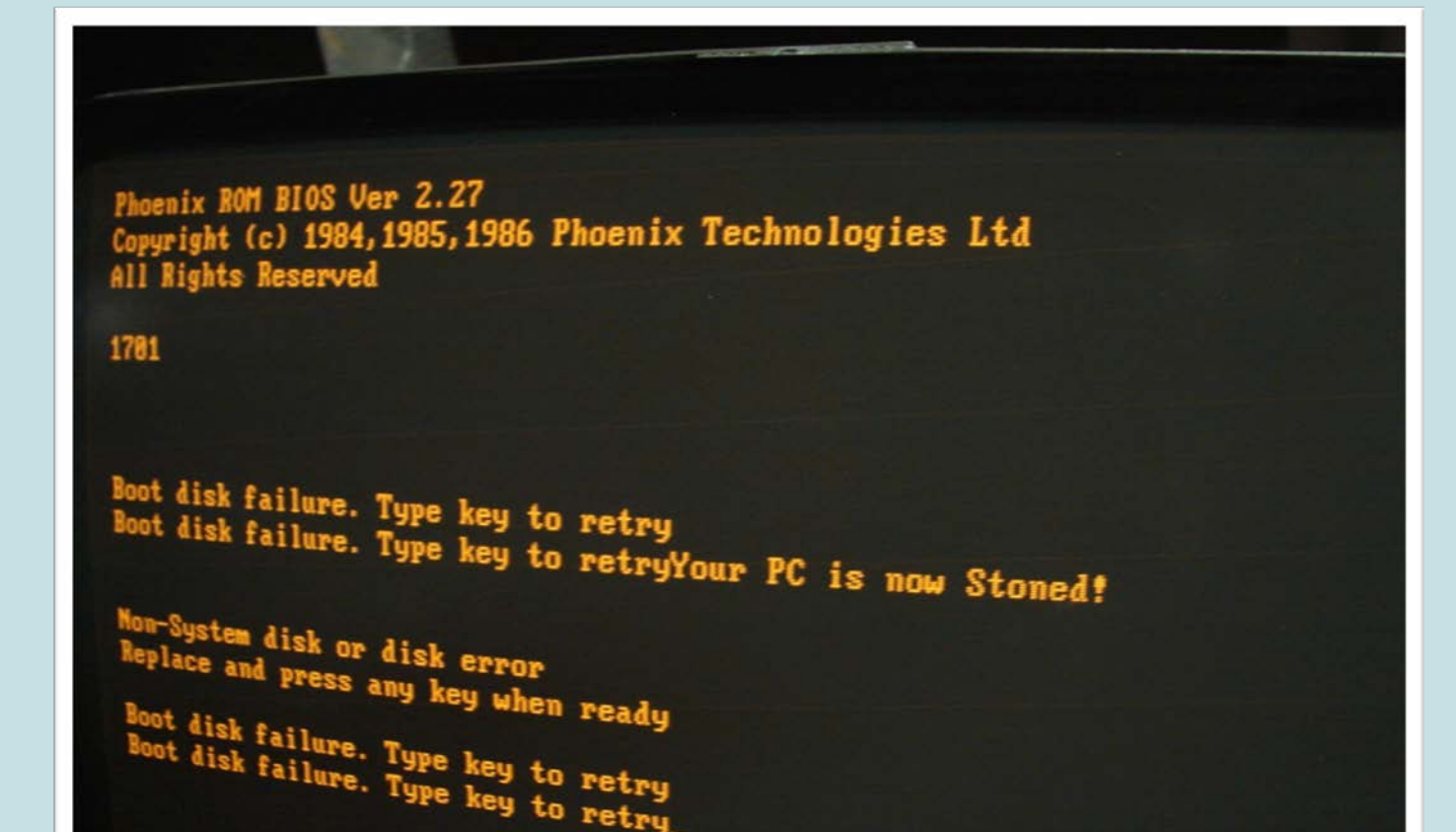

Librarian's Helper Menu
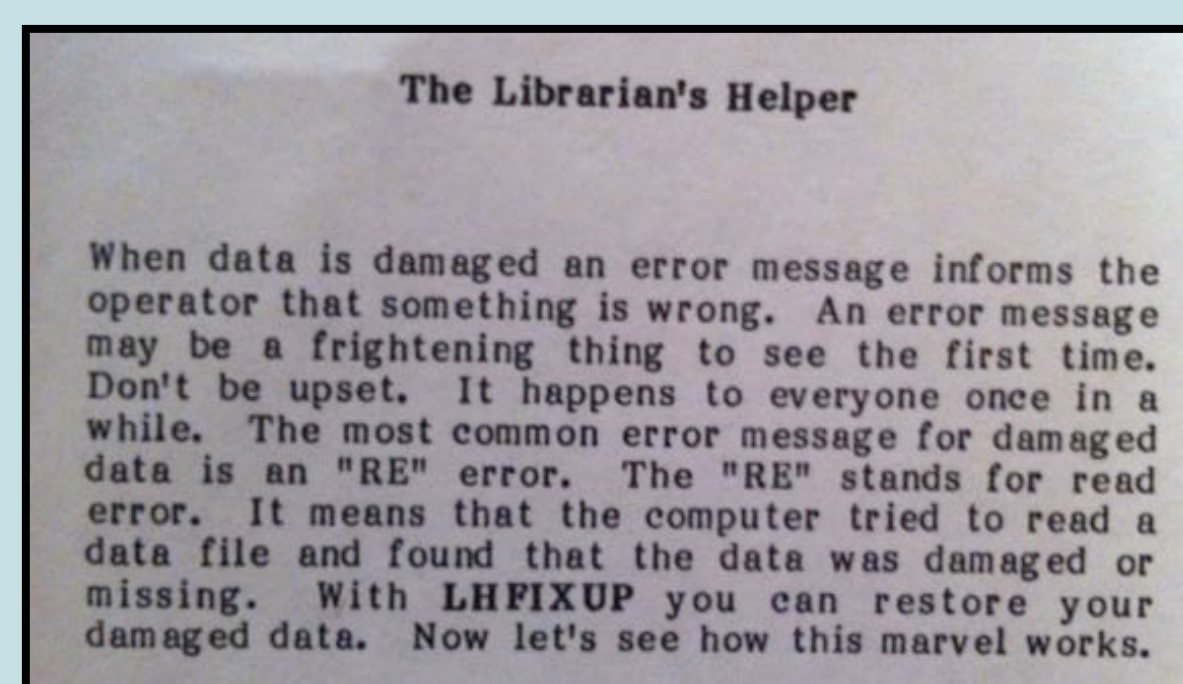
Helpful advice from the Librarian's Helper Manual.

The Virus

During our attempts to access the records on the 5.25" disks, we discovered that they were infected with a virus known as the Stoned virus. Stoned is a boot sector virus, first detected in New Zealand in 1988, that was passed via floppy disks. This type of virus moves the boot sector of the floppy disk to a new location and replaces it with virus infected boot sector code. If a computer tries to boot from an infected disk, the computer becomes infected and will then infect any floppy disk that it writes to after infection. These types of viruses proved to be very effective, because all floppy disks (including non-bootable disks) have a boot sector. The virus is called "Stoned" because one of its effects was that an infected computer might display the message "Your PC is now Stoned!" or a similar variant. Over 90 descendants of the Stoned virus have been found.

The Stoned virus message.