

ROCHESTER INSTITUTE OF TECHNOLOGY

**A Thesis Submitted to the Faculty of
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in Candidacy for the Degree of
MASTER OF FINE ARTS**

Computers in College Art and Design Programs

by

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Foreword

In a way, I began research for this thesis four years ago when personal circumstances caused me to seek out a Master's Degree program. I knew I wanted to study computers in relation to art, but I was not exactly sure what those types of courses would be called, or if degrees were offered. After spending many hours in the local library's reference section and after writing numerous letters of inquiry to schools across the United States, I amassed a great deal of material concerning the subject of Computers and Art in College Education. I found that many schools also were not sure what to call these computer courses, or how to classify them in their curriculums. I found no consistent course names such as "Painting-Watercolor" or "Ceramics-Handbuilding." Each school seemed to have developed its own terminology and classification of course offerings, hardware and software.

For a newcomer like myself, it was like learning a foreign language where there were six different ways to pronounce each word and ten words for every object! But slowly, as I pursued the stacks and piles of materials I had gathered, I began to recognize key phrases and to decipher abbreviated terminology and gain an understanding about what was being offered in the way of master programs. There was not a great deal being offered - only about ten universities have actual master degrees in Computer Arts and/or Computer Graphics. Some of these programs evolved from fine arts schools, other from educational branches of the arts and still others from seemingly unrelated computer science programs and from technical programs such as video, printing, and photography.

Many other schools offered graduate coursework through related degree programs. There was also a wide range of computer art/design classes being offered in many of the undergraduate programs. I found undergraduate majors, minors, and a wide range of supplemental courses were offered. This jumble of information appears to be the poorly documented result of a new and progressive field - Computer Art and Graphics. Today's society has a definite need for people who possess these new artistic skills. The equipment and software is well developed and affordable and now there is a mad scramble to educate. Programs are being implemented, but there is no one source or database that contains all of the possibilities for learning in this field. Few professors have a degree in this speciality. Instead, they are usually unique individuals who often possess several related degrees such as computer science, fine arts, printing, graphic design, art education, etc., and they have hands-on experience with Computer Art and Design. Often their graduates (and potential professors) are "grabbed" by industries because colleges and universities cannot match the salaries industries offer.





So, schools continue to "bump" along, trying to meet the demands and needs of their students while working with tight budgets, shortages of equipment and software, and shortages of staff. Meanwhile, more and more people, like myself, are becoming interested in pursuing a career in this field. I weeded through the materials sent to me and came up with my personal top list of schools to investigate. RIT was my first choice of these. It offered the MFA I sought and it was clear about what that degree would be in - Computer Graphics Design. RIT had a knowledgeable and competent staff in this area of study and a curriculum outline that was adaptable to the many different backgrounds of the individuals pursuing this degree. The program was flexible, but focused. RIT was my first choice, but I wished it hadn't taken me almost two years to investigate and make that choice. I thought about all the circles I had gone in and all the dead ends I met, trying to find out about this new field and art form.

Documentation of computer art and design programs in colleges and universities was a natural thesis topic choice for me in the Fall. I felt that if, somehow, information on this subject could be extracted from all the existing data and be made available in one concise package for the user, it would be a new and useful tool and worthy of a thesis project. I certainly could have used it. Still, I was concerned that it might be boring or not utilized, once done. I was amazed when I received replies from over 50% of the the schools I initially surveyed. I was surprised again at my thesis show when undergraduate students sat down at my computer and began actively using the prototype (which did not yet contain all the information) and scribbling names and addresses on scraps of paper so they could pursue the information later. Then students began to approach me in the halls, requesting copies of the project in spite of the fact that it was incomplete and unfinished. Most of the schools in the survey have requested a copy of this project upon completion.

I have concluded that there is certainly a need for this type of information. I hope that someone in a future class at RIT will take this project and expand it - add information about the schools that didn't respond, the schools I did not contact and update the information from those schools that did respond. Additional sources and materials could also be included.

I want to thank my thesis committee - Nancy Ciolek, Robert Keough, and James VerHague - for their interest and support in this project. They encouraged me when I was undecided on its worthiness and I am very glad they did. They were also great in providing sources, contacts and materials as well as design and scripting assistance. I would like to thank them for all of their help and also for all of the things they have taught me these past two years.





Introduction

A new technology, such as the computer, must be absorbed in order for the artist and designer to integrate it as a tool into his/her creative process. The artist must practice with the computer until it becomes an intuitive, valuable tool. It is then that traditional image-making techniques are expanded in new directions with the computer and new methods for creating images and designs are developed. When we create new programs for the computer or when we use existing software, we must understand the process of computing in order to develop new ways of using computers to create imagery that is different from the imagery created with other media. This different and innovative imagery is a reflection of the uniqueness of computing in the art and design profession. The artist must recognize that a computer system is a new and different medium with its own unique character and capabilities.

The computer's role is that of a tool, a vehicle and a means of exploration, study and expression. The imagery created with the aid of the computer are an expression of the artist, however, not the computing device. Computer graphic systems provide the basis for dynamic new directions in art, with unique applications in painting, drawing, photography, graphic design, etc. The artist is challenged to explore new approaches and to develop new techniques for creating multi-dimensional images, environments and experiences, joining dissimilar elements in unique ways. Computer graphic systems can be used in new ways that are consistent with the intrinsic character and capabilities of the systems. These systems offer multiple interactive options which the artist can use to create layers of ideas and events through innovative image, sound and performance environments, expanding the scope of their artistic expression and propelling them into new image frontiers. The first steps are absorption and integrations, but where can the artist go to practice and perfect these new skills and techniques? This thesis project has allowed this artist to develop these skills while seeking out this data and compiling it into an interactive package.





Developmental Ideas

PROBLEM ANALYSIS

In order for a student to learn a new skill such as computer graphic design, the student must first seek out an appropriate educational program. The programs currently available vary widely in range of scope, subject matter and curriculum. I feel that it is essential for educators to be aware of the challenges of developing an aesthetic sensitivity in the computing context. A first course in a computer graphic curriculum should provide a visual pathway for exploring the nature of computing and its potential for expanding the current visual landscape. Computer graphics systems provide a new visual vocabulary that is being developed by artists and designers. Books need to include presentation of imaging techniques and processes that can serve as a basis for class exercises and projects. Examples should also be included to stimulate students and demonstrate the variety of computer graphic systems available. As this new medium grows, various levels of education are being offered through the colleges and universities throughout the United States. However, there is no standard requirements for course descriptions or guidelines for degree certification.

The first step in understanding this new medium and the course offerings in this area is to gather the information available and organize it in a manner to which an individual can access it easily using knowledge they already possess. By putting the information in an interactive package and providing it back to the participants, I hoped to make this project into a viable and useable tool, and not just a theoretical outline.

DEVELOPMENT OF SKILLS/SOFTWARE APPLICATIONS USED

SuperCard software was chosen for this project because it offered tools to create an interactive system and provided graphic options such as color, drawing, importing images, and connection to other animation applications such as MacroMind Director. In addition, SuperCard offers the choice of creating a "standalone" application which can be distributed without charge. This information, therefore, can be displayed and printed by anyone who has a Macintosh Computer with at least two megs of RAM and a full-sized monitor.

In order to develop this project it was necessary for me to learn the SuperCard software application, and also to review scripting skills developed in HyperCard. I also created an animated opening in MacroMind Director for the non-standalone version of this project. I also used PixelPaint Professional to design the buttons. The buttons were then opened into PhotoShop 2.0 for final adjustments to the colors and sizes. They were then imported into SuperCard as graphic images. In addition,





electronic imaging was used in the animated opening. Several images were scanned using a video digitizer copystand. Other images were created using a Canon Zap-Shot Still Video Camera. These still video images were then digitized by using a special software package designed for that purpose. In addition, I used Microsoft Word and Design Studio in the development of the instructions and the thesis paper accompanying the project.

Design Considerations

INSTRUCTIONAL DESIGN

Instructional design for this project was approached in two ways:

FIRST: Instructions must be included within the project so the user can easily access the information.

Brief, but concise instructions are included on the opening screen of this project. All buttons have simple titles such as "Next Card" or "New Search". SEE APPENDIX K for descriptions of buttons and fields and their functions.

SECOND: A general set of instructions should be included for the user so that the user will know how to access the material and exactly what information is contained in the project.

A set of user instructions were developed to be sent along with the standalone application to the schools requesting copies of the finished project. Instructions included an overview of the project, required hardware specifications and installation information, and an instructional guide for using the application. SEE APPENDIX L.

A separate set of instructions are included with this thesis paper for the user who would like to update the data contained in this project. It provides steps for editing existing data as well as adding and deleting data and re-compiling data lists. This material is to be used with the version that is not a standalone application. SEE APPENDIX M for a copy of these instructions.

INFORMATIONAL DESIGN

Informational design takes into consideration the data being presented. In this project the majority of data is in text form. The survey elicited various lengths of responses from the different schools being surveyed. The length and variety of responses were





considered when designing the screens. My desire was to edit as little as possible the material sent to me. In some cases I changed the tense of the sentences or made them third person in order for the project to read consistently throughout. Sometimes I was presented with copious amounts of material - far exceeding the limitations of the fields in this project's screens. In these cases I attempted to extract the information I deemed most useful. I tried, whenever possible to present data that could be easily compared, for example: types of hardware or degrees offered. I also tried to always refer to hardware & software terms in the exact same way. This was for my benefit when scripting sort commands as well as for the user's.

USER INTERFACE DESIGN

I wanted the design of the user interface to be simple, precise and consistent. Whenever possible, buttons that do the same thing were placed in the same location on the different cards. I set them up in a hierarchical sequence. Therefore, QUIT will always be at the top of the button area and START OVER or NEW SEARCH follows. The buttons below those pertain to a set of cards and finally the buttons that deal with only elements of the information are at the bottom of the screen. All buttons are clearly marked with a simple, descriptive word such as "View Location" or "Mark for List". The buttons always remain on the left side of the screen. The data is presented across the top and on the right side of the screen. (See examples on following pages)

GRAPHIC DESIGN

Graphic design includes all the visual elements of the project. It concerns the placement of the information, the fonts used, the colors of the text, buttons, and background, and the style of buttons and their placement. Placement considerations include the size of the data and buttons being presented and the ease of use as well as the visual layout of the material.

I chose a full-screen card size for this project because there is a great deal of information to present and a full screen gave me more space in which to place fields and buttons. I decided upon placement of the data-across the top and down the right two thirds of the screen. The user area was placed on the left third of the screen. I selected a complementary color scheme of muted blues and oranges. The font for the title of each card was Cooper Black, a simple, friendly, and easy to read text. The remaining text was set using various Univers fonts.

This font is plain and unobtrusive and reads well on a small scale. The buttons were an embossed style and rectangular in shape. I made them as large as possible in order to read their label and be able to easily click on them. The background was always a variation of the two complementary colors. (See examples on following pages).

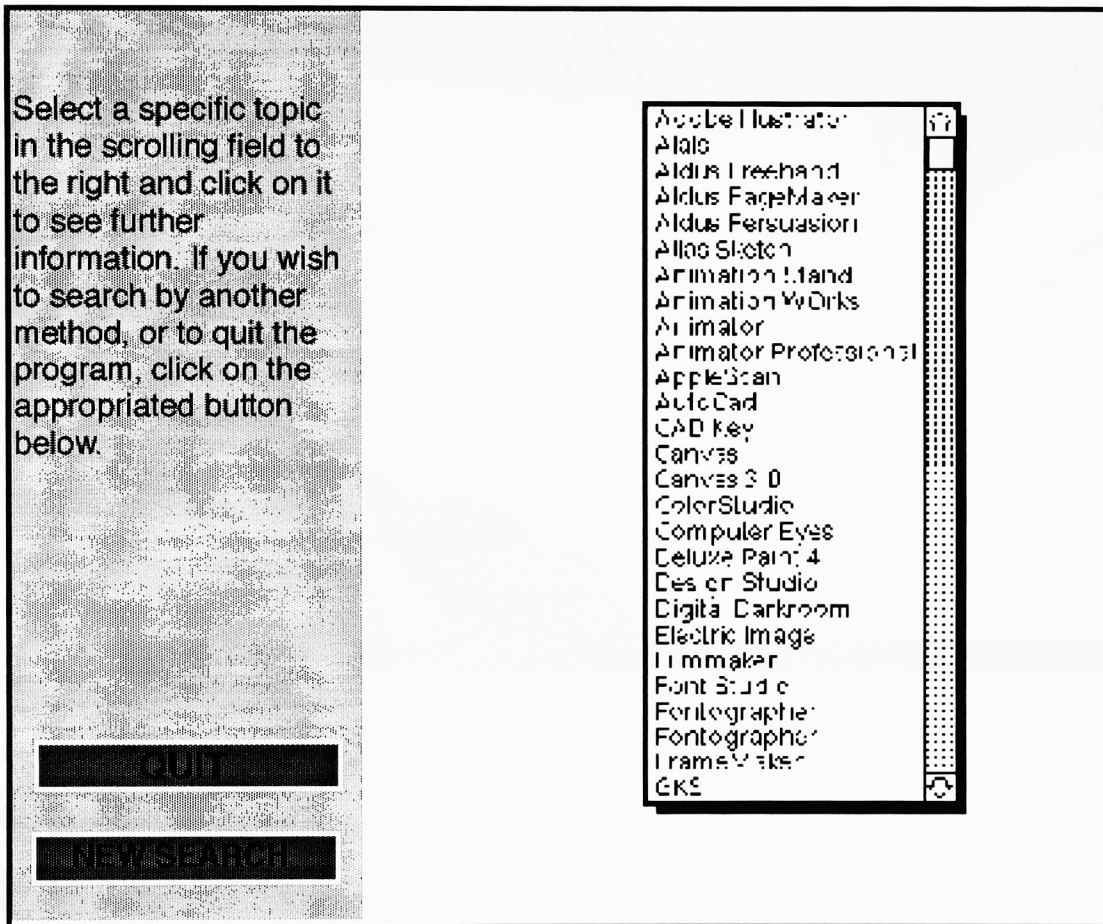




<p>SEARCH BY...</p> <p>SCHOOL</p> <p>REGION</p> <p>HARDWARE</p> <p>SOFTWARE</p> <p>SUBJECT</p> <p>BROWSE</p> <p>QUIT</p>	<p>This card allows the user to search for specific information from the data contained in this project.</p> <p>Simply click on the button of your choice to view the survey information about Computer Graphic Design in college programs.</p> <p>You can select "Schools" to obtain a list of schools from which to choose.</p> <p>If you are interested in a particular area of the USA, click on the "Region" button.</p> <p>If you are interested in specific hardware or software, choose the "Hardware" or "Software" button.</p> <p>The "Subject" button will allow you to do a random search for a specific topic, word, or name not included in the other searches.</p> <p>Finally, if you would like to browse through all of the data information, click the "Browse" button.</p>
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Example of the User Search Screen.





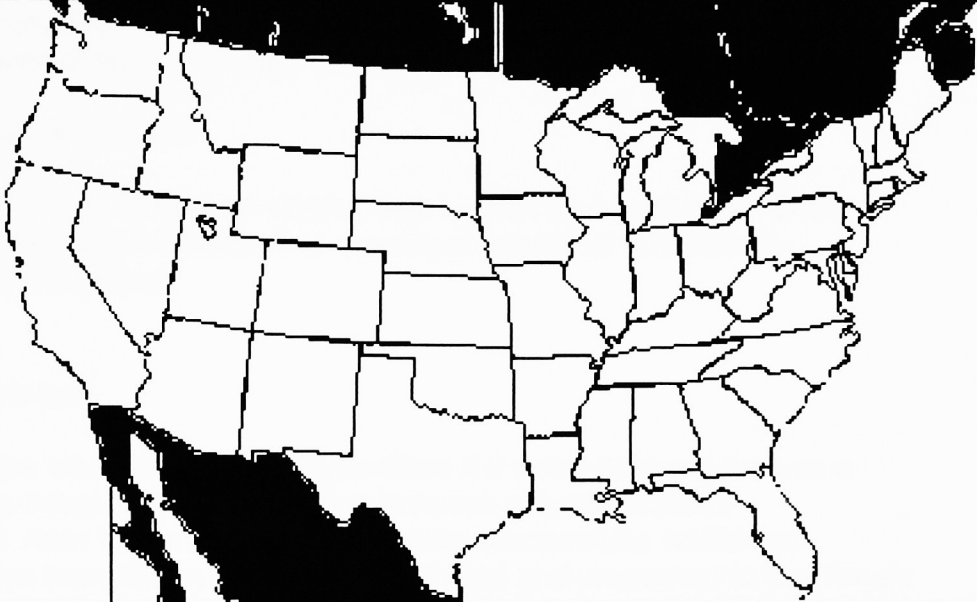
Example of Software Search Screen.





REGIONAL SEARCH

To search by region, simply click on the area of the map you are



QUIT

NEW SEARCH

<input type="checkbox"/>	Northwest	<input type="checkbox"/>	Midwest
<input type="checkbox"/>	Southwest	<input type="checkbox"/>	Northeast
<input type="checkbox"/>	Southeast		

Example of the Map Screen.





OTHER SOFTWARE DESIGN CONSIDERATIONS:

Define Syntax

Syntax used throughout the project has remained consistent for better understanding and ease of use by the user. All scripting has been documented and commented in order to allow programmers to trace the scripting commands.

Write Help Documents

Help documents include on-screen help as well as a brief description of the project and instructions to accompany the final standalone version of the project.

Build Prototype

A prototype was developed in HyperCard 2.0 using different data as a topic. The initial SuperCard version included only ten schools surveyed. After this prototype was working successfully, additional information from fifteen schools was included and presented at the Thesis Opening. This prototype was successful. There was an initial failure (or crash) twice at the beginning of its presentation - a result of a combination of conflicting inits on the computer system being used and an error in print commands. Once the inits were turned off and removed and the print error corrected the project ran smoothly for the remaining of the opening. It is best to not use Multifinder if your are running a version of System 6. Also, do not use a screen saver, it interrupts the printing process and causes the program to sometimes crash.

Get Reviews

A request for disks to send out the information in this project will be accompanied by a summary and thank you letter from myself and RIT. The disks will be accompanied by written instructions for using this project. There will be an address and phone number for which to address questions and comments.

Because copies of this project will be sent to schools across the United States, I decided to keep the memory size of this project as small as possible in order to fit it on a single disk. I chose to develop this project using SuperCard because it allows the developer to create a standalone unit that will run without the SuperCard application. This should allow anyone with a Macintosh computer having enough memory and a full screen to be able to view the data.





Gathering the Information

DETAIL ANALYSIS

First a list of questions was developed about the various computer art/design programs at colleges and universities. Each question was considered for its merit and worth, and the list pared down to a brief and concise page of questions. I wanted to insure as much as possible that the people receiving the surveys would take the time to complete and return them. The final questions requested information which could easily be included in an interactive project and which would provide relevant information for the users.

REVIEW OF SIMILAR INTERACTIVE SYSTEMS

Other informational, interactive systems were reviewed to obtain ideas for this project. These included Thesis projects from previous years, and other interactive projects developed by classmates and professors. I had the opportunity to view additional commercial interactive projects from the AVI Interactive media program. I elected to take four of the six classes offered for the AVI certificate in Interactive Media and was required to develop a HyperCard project in one of those classes which would act very much like the Thesis project I had proposed in SuperCard. I concentrated on the HyperCard project, hoping that the programming skills I developed during that class could be used in the Thesis project. I found however that even though the programming skills assisted me in development of the project, the scripting in HyperCard was different enough that none of the scripts could be imported directly into SuperCard and used in the Thesis Project. Each script required extensive modification in order to function in SuperCard. In some cases the scripts had to be abandoned and another method had to be used completely.

DEFINE USERS AND THEIR NEEDS

The users of this project will be professors and their students. This material was developed for professors so that they can compare the various programs being offered in their profession. This project will act as a resource, offering them contacts with other educators in this area, and will assist them in sharing ideas and information. It will also allow them to review and compare the equipment and software being used in these educational institutes around the country. Their students will be able to use this material in the same manner, but their goal may be to investigate the various program offerings in order to study computer graphics. This project





would also be a great resource for high school students planning on a college course of study in design and computer graphic design and/or art. It is also a good resource for the undergraduate college student who wishes to continue study in a graduate program.

BRAINSTORMING

Once the initial survey and accompanying letter developed, I had to decide where to focus my survey. I decided to quiz the schools which were members of NASAD, the National Association of Schools of Art and Design. Members of NASAD are degree granting schools and departments and non-degree granting schools that are predominately organized to offer education in art, design or art/design related disciplines. This eliminated a number of other schools and all two year programs and community colleges. However, I was able to focus on the best known art and design programs in the United States. Once the survey was mailed, I began to review appropriate applications for this project and consider screen designs and the interactive components of this project.

Requirements/Specifications

SEMANTICS

I decided to not use symbols or icons for the buttons in this project. Instead, I used simple terms on buttons to assist the user in his/her review of the stack. Whenever possible, I tried to remain consistent in the use of terms, names, and also in the case of the words being used. Likewise, the instructions accompanying the project is fashioned in a similar manner so the user will be able to quickly recognize a term or name of a specific card when reviewing the instructions.

ARCHITECTURE

Hardware - Ideally the project will run on any Apple Macintosh Computer that has enough RAM memory to support an interactive application such as HyperCard and a 13 inch monitor. A color monitor with 8 bit color is preferable.

The thesis project was designed using a Macintosh IIsi and a Macintosh IIx. It was designed in the application software SuperCard and developed as a standalone so that it can be viewed without the application. It was developed using System 6.07 but should run on System 7.0 as well.





FUNCTIONS

1) Provide Color Picture Information

Color Picture information was put as a low priority item because of: 1) The large amount of memory required to incorporate PICT files into the project, and 2) the absence of quality materials from which to gather images. I requested that materials from the various schools be returned with the survey, but less than 5% responded with any sort of visual materials. However an example of the type of imagery and information that could be included has been attached to the RIT data screens. This is a slide show, created in MacroMind Director, presenting the Computer Graphics Design Program Outline at RIT.

2) Provide the user with a choice of modes (see navigation and authoring)

Navigation is accomplished by selecting and clicking on various buttons, images and fields. There is a main search card with buttons which offer several ways to search for information. These searches allow the user to then select a specific group or groups of college and university programs to view.

A search by location is accomplished by clicking on a specific area of a map of the United States. All programs from that area can then be viewed in sequence.

There is an opportunity on each card to mark or demark the school program being viewed. Upon completion of the tour, the user is given a choice to print a listing of names and addresses of the schools which were marked.

3) Provide an Overview of the information

A written overview of the information will be submitted along with instructions for using the project.

4) Provide a brief history of the subject

A summary of the project and the reason for its development is included in the opening statement of this paper and a synopsis of this will be included in the overview and information sent to the users of the this project.





5) *Customized Database - the user can choose a subset (virtual stack) and be able to save it, retrieve it and print it.*

Customizing of the database was accomplished. Users can search by Location, Hardware, Software, any general Subject or Name and by browsing. The user can then view the information pertaining to the choice made and mark schools which are of interest to them. A list of names and addresses can then be printed from these marked cards.

6) *Methods of choice - by a logical search (of attributes), one at a time*

At any time the User can return to the main card to begin a new search.

7) *Multiple Cross-Reference - related topics or information - such as a 'see also ' glossary, etc.*

The SUBJECT search allows the user to search for any specific word or combination of words in the main cards (such as the name of the school, degrees offered, a professor's name, or a particular word such as PhotoShop or Macintosh, for example).

8) *Additions to the collection - see authoring*

A non standalone version of this project will remain with RIT so that additional schools and updates of information can be made as new data is gathered. This version requires additional instructions (see Appendix K) for completing data, setting coordinates for location identification, and compiling the hardware and software lists for viewing.

CONTENTS

Following is a breakdown of the information presented in this project:

Each School or Program: Attributes

1) Degrees Offered

Various responses were made here. Overall, a good annual project for upcoming students would be to request catalogues from each school and update this material.





2) Courses offered

Some of the responses were very complete with course descriptions and prerequisites, while others were sketchy and only offered course numbers. Again, a project to request course catalogues and update this material annually would keep this information current.

3) Professors

This question was generally answered completely. In a few cases a contact other than the professor was listed. This is something that could also be updated annually.

4) Location - State/City

Location of the responding educational facilities was obvious. The difficulty was estimation of the coordinates on the map in order to properly identify the locations.

5) Cost

This question was omitted from the survey. It was found that generally the persons being surveyed were not aware of the tuition costs other than a general estimate. This information is readily available from the recruitment departments of most registrar's offices and is also available in several publications in school and public libraries.

6) Hardware

A variety of hardware was listed in the returned surveys. Some responses listed simply "Macintosh", while others listed several pages of detailed descriptions including every piece of electronic equipment and number of each piece of machinery ever owned by that particular school.

7) Software

Response to the software query did not vary as much as the hardware query. A few respondents were confused and sent numeric responses such as Paint/Draw programs: 3, instead of the requested





names such as "Adobe Illustrator." Other respondents used abbreviations of software packages that were not always recognizable. Whenever I was not sure of the information, I chose to omit it rather than print it incorrectly. Still, I had trouble with much of the handwriting of the individuals completing the survey and hope that any mistakes I may have accidentally included are not offensive to the schools that participated.

8) Related information about the school's programs, etc.

I asked for information about course offerings as well as future plans for each program. In some cases I hesitated to include such frank responses as "There's not a chance in hell of getting next year's budget approved." I decided to do some judicial editing in these cases and put all statements in third-person such as "budget cuts may prohibit additional purchases of equipment in the coming year."

9) School Name

The School names were entered exactly as received in the survey. This is the preferred way of addressing the school and probably the way other resources would list the school when presenting information about these schools. One exception is the word "THE." If "THE" was used in the name of the school, then the school name was alphabetized by "T". Many publications that are not interactive would use the second word of the school or would organize all schools by the state in which they are located.

Navigation

Possible ways of Navigation:

1) By attribute

Attributes included HARDWARE and SOFTWARE

2) One at a time-Browse

BROWSING takes the user through the school listings in random order sequentially. In other words, the schools are not alphabetized. They remain in the last order as they were viewed.





3) TimeLine

The timeline was not used in this project.

4) Map/Visual

I designed a location map with five specific areas that divide the continental United States. The user could click on a specific area to get access to the school in that area, or click on the name of the area listed below the map. At any time when viewing the datacards of the various schools, the user can click the see location button and they will be taken briefly to the map. A star will appear at the approximate location of the school and a tone will sound. The user is then returned to the original card.

5) Past Topics Viewed (Keep track of path)

A past topics viewed was not included in this stack. This is because the information being presented is all similar. Each school has a main card of information and a second card of general comments. Searches and marking of the cards can be done from any card the user is currently on. If the user has an interest in viewing a specific school they can simply choose the "School" search button and click on a particular school. If they are looking for specific information, they only need to choose "Subject" search and type a word or phrase to obtain the group of schools containing that particular information. The "Browse" button allows the user complete access of all cards in the project.

6) Escape sequences: Exit Project Completely

A "Quit" button is included on all cards in the project. The initial QUIT button takes the user to a final card which contains credits and a button which allows the user to print the cards they have marked. If they do not wish to print, they can push the "Quit" button again to close the project.

Fresh start

A "New Search" button is located on each of the data cards. Once the user chooses the "Quit" button, they have a chance on the credits card to "Start over." They have this choice on the print card as well.





See the last thing

This option was not included in the project. Most of the data is presented in a linear style and users can toggle back and forth or loop through the material as much as they would like. The location option allows the user to run through the schools in the particular area chosen once. When the user completes viewing the schools of a particular location, he/she is automatically taken back to the search card. There the user can choose to view schools by a particular location again, or by any other method.

AUTHORING

Method for adding a school or updating information:

Authoring will only be available to faculty and chosen students at RIT. Information will otherwise be sent to the schools requesting it in a non-alterable form.

Adding a new school will require:

- 1) adding a main card
- 2) adding a secondary card
- 3) typing in the data
- 4) typing in the location of the school on the map
- 5) typing in the name of the location in a hidden field

How the rest of the system will know about the additions/changes

Once data has been added, it will be necessary to re-compile the Hardware and Software information. This may take 30-40 minutes on a Macintosh IIx, depending upon the number of new schools added. After this data is added to the field, it will need to be sorted alphabetically. Then, duplicates must be manually removed. This is an awkward procedure, requiring someone with good office skills. I was unable to successfully write scripting that would search out duplications and remove them, therefore, I resorted to doing it manually. The sort option in SuperCard made this a bearable task. It would have been unacceptable to me to alphabetize this many items by hand. I was able to accomplish both of these functions through scripting in HyperCard, but could not get it to work properly in SuperCard. This is because I was trying to develop a list from





fields that included more than one item and because SuperCard does not recognize CLICKLINE. I used CLINKLINE in HyperCard to identify card ID's when a piece of hardware or software was selected and put all cards that qualified into a virtual stack. In SuperCard I used the FIND command by reading the contents of a selected area of the field being viewed, and then searching for that information in the complete stack of cards. The ID of the first card found is noted, and each subsequent card is tested to see if its ID matches. When a match is found, all the cards in the stack that contained the information requested have been viewed and the user is returned to the search card.

Printing Reports

A listing of the marked cards can be printed upon completion of the search procedure. When the user chooses "Quit", he is taken to a credits screen containing a "Print List" option button on it. This button takes the user to a screen which lists all the names and addresses of the schools that were marked. The print navigator will appear and prompt the user to click on the printer icon and then click on the field of information. The information in this field is then sent to the printer.

Related works - creating a web

Pictorials were omitted because of the memory size they took. If size had not been a consideration, the project could have been expanded by including images of the various studios in the schools, examples of student work and perhaps images of the campus, gallery, etc.

Deleting information

Information can be removed by simply deleting the whole card or by editing text in the card fields. If a school is removed, the user should be careful to remove the secondary card about that particular school. Again, after editing of Hardware and Software, the search list will need to be re-compiled. I suggest if the changes are minor, to edit the list field manually instead of re-compiling.

Design

The design should be self-evident to the user - easy to use: Consistency in Titles, locations of buttons, etc. The consistency of the layout and the functionality must be weighed. The design of the cards and buttons were discussed earlier in this paper.





Colors

A complementary color scheme of orange and blue was chosen for this project. I tried to choose colors that would be easy on the eyes of the user, since they would be reading relatively small text.

Font Choices

Three fonts were used for interest and variety. The titles of the schools were depicted in Cooper Black. The subtitles and smaller headings were represented in Gill Sans. The data and the button names were in three sizes of Univers.

Interactions

Interaction is completed by the user choosing and clicking on available buttons and/or fields of data.

The Look (Examples: a book or catalogue motif, full screen vs. smaller, gallery motif, etc.)

Because of the amount of data being presented, a full screen was used. Also, because of the amount of varied data, there was no particular motif. The screen was divided into an informational area and a user area (buttons). The secondary screen reversed the two background colors in order to assist the viewer in recognizing they were not viewing a main card.

Constraints

The user is always returned to the main search card unless choosing to quit. In the standalone, the user is not allowed to edit text or add new data.

Stack Design


The stack is designed in several sections or parts. The opening is designed in MacroMind Director 3.0 as an animated movie. It is called from the SuperCard on open Project command. The project includes three windows. One window contains opening, closing and interactive choice cards. One window contains the main card for each school. The final window contains the secondary card for each school.





Graphic Design Elements - Grid for cards

A top grid line defines the area for the School name banner. A vertical grid line approximately one-third from the right of the screen defines the button area. The remaining two-thirds is the area defined for information. Two horizontal gridlines mark the area for subtitles. On the top of the main card the name and address of the contact person is presented in the button area. This was done in order to separate it from the other data in order to easily identify it. (See examples following).

Auburn University at Montgomery		
Fine Arts Graphic Design		
Contact: Phillip Coley, Director- Graphic Design Auburn University at Montgomery 7350 University Drive Montgomery, AL 38117-3596 (205) 244-3346	Faculty Phillip Coley Suzie Blell Peggy Brown Peter Thompson	Degrees Offered BA in Fine Arts with an emphasis in Graphic Design
QUIT	Hardware Macintosh II Macintosh IIcx Macintosh IIfx	Software Canvas Studio 0 Studio 52 PageMaker QuarkXpress MM Director Hypercard Animation Stand Aldus Persuasion Electric Image Strata 3D Font Studio Color Studio
NEW SEARCH		
SEE LOCATION		
<input checked="" type="checkbox"/> MARK FOR LIST		
MORE INFO...		
SOUTH EAST 		

Example of a school's main data screen.





Auburn University at Montgomery	
	Course Offerings Computer 1, Computer 2, lettering & Typography, Electronic Layout I, Electronic Layout 2, Video Animation, Presentation Graphics, Individual Studio Projects
	Prerequisites Introduction to commercial Art Graphic Layouts & Design
	Future Plans Expand Video Animation
QUIT	
NEW SEARCH	
SEE LOCATION	
<input checked="" type="checkbox"/> MARK FOR LIST	
MORE...	RETURN

Example of a school's additional data screen.

EVALUATION-IMPLEMENTATION

Testing/Debugging

Testing was done throughout the development of the project. Each button was developed and tested separately and then tested in combination with the other buttons. Final testing was done after each addition of information and after the project was made into a standalone. Debugging was done throughout the project after each stage of testing. The project was also tested by the users - people ranging in age from 8 years old to senior





citizens. In general there was no trouble going through the information. However, many people did not read the initial instructions and forgot how to print out information. This prompted a change in the name of some of the main card buttons in order to assist the user when they wished to quit and print.

End Users/Operation

End users will be professors and students in high-school and colleges and universities throughout the United States. The goal of the developer of this project was smooth operation and ease of use for the viewer.

Thesis Committee Evaluation

The three committee members have viewed the progress of this project on a weekly and biweekly schedule. Each member has contributed advice and information in their areas of speciality, as well as overall comments.





CONCLUSION

To summarize, this project was developed in several stages after the information was gathered through the survey. A prototype in HyperCard was first developed using a different topic. Later the information was entered from ten of the returned surveys and scripting written in order to make the interactive parts work. Design considerations were made based on the amount of information supplied and the amount of space it occupied on the screen. The information was divided into main and secondary elements. Areas for buttons were assigned. Final scripting and cards were developed. The opening was developed separately in MacroMind Director. The remaining data was added and the project was made into a standalone during the final faze.

Overall, I feel that this project was successful. I had a good response from the survey. The software I chose to use in development of the project worked well for my purpose. However, I had difficulty in several areas of scripting in Supercard - I found there to be major differences between it and HyperCard - but I managed to modify and improvise in order to achieve the desired results in the project information. The unexpected large volume of responses from the survey caused me to spend much more time entering data and editing material than I had anticipated. This made the stack larger and a bit slower when running on my MAC IIsi, but manageable on the MAC IIfx, the computer I used at RIT.

For me, what makes this project successful is that it is useful. It contains information of interest to many people in the fields of computer art and graphic design. I have had many requests for the information by potential students in this area and it has been very satisfying to be able to provide this information to them.





APPENDIX A

Thesis Statement

The computer industry is rapidly growing and higher education is striving to keep up with the demands for people who are educated in computer fields. I investigated and documented the use of the Computer in the area of Graphic Design and Art at the college level. The computer graphic education programs available are many and varied

I developed and mailed a general survey, scrutinizing the programs offered in computer graphics by colleges and universities offering degrees in art and/or design. From these findings, I created a database that can be used as a resource for prospective students in the Art and Graphic Design areas. This database was incorporated into an interactive program on the computer.

This work, therefore, reflects an internal look at the very training and tools used to create it. It demonstrates one of the newest ways to view information - a form of communication which differs from the book, painting or the play. The user makes a choice and gets a response, simulating interaction between humans.

Marla Matlick





APPENDIX B

Thesis Proposal for the Master of Fine Arts Degree
College of Fine and Applied Arts
Rochester Institute of Technology

PROPOSED TITLE: The Use of the Computer in Graphic Design
Education at the College/University Level

SUBMITTED BY: Marla Matlick DATE: Sept. 20, 1991

THESIS COMMITTEE:

CHIEF ADVISER: Robert Keough
ASSOCIATE ADVISERS: James VerHague
 Nancy Ciolek

The purpose of this thesis is to investigate and document the use of the Computer in the area of Graphic Design and Art at the college level. The computer industry is rapidly growing and higher education is striving to keep up with the demands for people who are educated in computer fields. My interests and background in Art Education and Design will aid my research of the many and various computer graphic education programs available.

By development of this thesis, my goal is to investigate the various forms of higher education and the programs they offer. From these findings, I will create a database to be used as a resource for prospective students in the Art and Graphic Design areas. This database will be incorporated into an interactive program on the computer. I will also develop a curriculum which can be used to teach a beginning basic computer graphic course. The curriculum can be used in foundations programs in art and design. This core curriculum will also be incorporated into an interactive program on the computer.

Marla Matlick





APPENDIX C

Schools Contacted List



Title	First Name	Last Name	Title	School	Address	City/ST/Zip
Mr.	Cummings	Walker	Director	Academy of Art College, Department of Advertising Design & Graphic Design	540 Powell Street	San Francisco, CA 94108
Mr.	James	Miho	Chairman	Art Center College of Design,	Comm. Design Department	Pasadena, CA 91109
				Boston University School for the Arts	Program in Graphic Design	Boston, MA 02215
Ms.	Lorraine	Wild	Director	California Institute of the Arts	School of Art, Program in Visual Communication	Valencia, CA 91355
Mr.	Michael	Kammermer	Chairman	California State University at Long Beach, School of Fine Arts	Department of Design 1250 Bellflower Blvd.	Long Beach, CA 90840
Mr.	S.H.	Shen	Graduate Advisor	City College of the City University of New York Department of Art	Program in the Fine Arts	New York, NY 10031
Mr.	Roland	Reiss	Chairman	Claremont Graduate School	Department of Fine Arts	Claremont, CA 91711
Dr.	Patrick	St. John	Director	College of New Rochelle	Department of Art	New Rochelle, NY 10805

Mr.	Robert	Brashear	Director	Cornell University	Field of Art	Ithaca, NY 14853
Ms.	Lucille	Harper	Registrar	Cranbrook Academy of Art	Programm in Fine Arts	Bloomfield Hill, MI 48013
Mr.	John	Schrader	Chairman	East Tennessee State University	College of Arts and Science, Department of Art	Johnson City, TN 37614
Dr.	Jack	Hilliwig	Head	East Texas State University	Department of Graphic Arts	Commerce, TX 75428
Mr.	James	McLean	Director	Georgia State University	School of Art and Design	Atlanta, GA 30303
Dr.	Rose	Washton Long	Executive Officer	Graduate School and University Center of the City University of New York	Graphic Arts	New York, NY 10031
Ms.	Jean	Rush	Acting Chairperson	Illinois State University	College of Fine Arts Department of Art	Normal, IL 61761
Mr.	David	Erickson	Acting Chairperson	Indiana State University	College of Arts and Science Department of Art	Terre Haute, IN 47809
Mr.	John	Goodheart	Director	Indiana University at Bloomington	School of Fine Arts	Bloomington, IN 47405
Dr.	Evan	Firestone	Chairman	Iowa State University of Science and Technology	College of Design Department of Art and Design	Ames, IA 50011`

Mr.	William	Quinn	Director	Kent State University	School of Art Graphic Design and Illustration	Kent, OH 44242
Mr.	Bob	Finkler	Chairman	Mankato State University Department of Art	South Road and Ellis Avenue	Mankato, MN 56001
				Memphis College of Art	Program in Visual Info. Arts	Memphis, TN 38112
Dr.	Richard	Knowles	Coordinator of Graduate Studies	Memphis State University College of Commercial and Fine Arts	Department of Arts	Memphis, TN 38152
Mr.	E. James	Kelly	Director of Graduate Study	Miami University School of Fine Arts	Program in Graphic Design	Oxford, OH 45056
Mr.	Kenneth	Royster	Chairman	Morgan State University	Department of Art	Baltimore, MD 21239
Mr.	Haig	Khachatooria	Head	North Carolina State University	School of Design	Raleigh, NY 27695
Mr.	Joseph	Koncelik	Chairman	Ohio State University	College of the Arts Department of Ind. Design	Columbus, OH 43210
Dr.	James	Stephenson	Professor in Charge	Penn State University School of the Arts	University Park Campus	University Park, PA 16802

Mr.	Isaac	Kerlow	Chairman	Pratt Institute	School of Art and Design Program in Computer Graphics Design	Brooklyn, NY 11205
				Rhode Island School of Design	Dept. of Graphic Design	Providence, RI 02903
Mr.	Frederick	Orth	Chairman	San Diego State University	Department of Art	San Diego, CA 92182
Dr.	Tony	May	Graduate Advisor	San Jose State University	Department of Art	San Jose, CA 95192
Ms.	May	Poetter	Dean of Admissions	Savannah College of Art and Design	Program in Graphic Design	Savannah, GA 31401
Ms.	Ann	Tyler	Co-Head	School of the Art Institute of Chicago	Program in Visual Communication	Chicago, IL 60603
Ms.	Martha	Schindler	Director of Admissions	School of Visual Arts	Department of Computer Art	New York, NY 10010
Ms.	Carol	Novo	Graduate Admissions Office	South East Mass. University	Program in Visual Design	North Dartmouth, MA 02747
Mr.	Sheldon	Berlyn	Grad. Director	State University of New York at Buffalo	Program in Fine Arts	Buffalo, Ny 14260
Mr.	John	Sellers	Chair	Syracuse University Department of Visual Communication	School of Art	Syracuse, NY 13244

Mr.	Lou	Krueger	Assistant Dean	Syracuse University School of Art	Department of Art Media Studies	Syracuse, NY 13244
Ms.	Carmina	Cinaciulli	Director of Admissions	Temple University	Tyler School of Art Department of Graphic Arts and Design	Philadelphia, PA 19122
Dr.	Betty	Copeland	Chair	Texas Woman's University	Department of Visual Arts	Denton, TX 76204
Mr.	Richard	Morrell	Assistant Director	U.S. International University	School of Performing and Visual Arts	San Diego, CA 92131
Ms.	McCrystle	Wood	Interim Director	University of Cincinnati	College of Liberal Arts	Baltimore, MD 21201
Mr.	David	Hickman	Graduate Coordinator	University of Houston	School of Design	Cincinnati, OH 45221
Ms.	Susan	Sensemann	Director of Graduate Studies	University of Illinois at Chicago	Department of Art 4800 Calhoun	Houston, TX 77004
Mr.	Tom	Kovacs	Coordinator	University of Illinois at Urbana-Champaign	School of Art and Design	Chicago, IL 60680
Mr.	Joseph	Zeller	Chairperson	University of Kansas	Program in Graphic Design	Urbana, IL 61801
Ms.	Marjorie	Levy	Dean	University of Michigan	Department of Design	Lawrence, KS 66045
					Program in Graphic Design	Ann Arbor, MI 48109

Mr.	William	Crist	Chairperson	Univerity of Missouri-Kansas City	Program in Studio Art	Kansas City, MO 64110
Mr.	Doyle	Gertjeansen	Chairperson	University of New Orleans	Department of Fine Arts	New Orleans, LA 70148
Mr.	Jerry	Austin	Graduate Studies Coordinator	University of North Texas	Department of Art	Denton, TX 76203
Mr.	John	Sherman	Director	University of Notre Dame	Dept. of Art and Design Concentration in Design	Notre Dame, IN 46556
Mr.	Paul	Davis	Chairman	University of Utah	Department of Art	Salt Lake City, UT 84112
Mr.	Charles	Smith	Advisor	University of Washington	School of Art Program in Graduate Design	Seattle, WA 98195
Dr.	William	Stewart	Director of Graduate Studies	Virginia Commonwealth University	Department of Design Program in Visual Communications	Richmond, VA 23298
				Washington University	School of Fine Arts	St. Louis, MO 63130
Mr.	Phillip	Vanderweg	Chairman	Western Michigan University	Department of Art	Kalamazoo, MI 49008
Mr.	David	Pease	Dean	Yale University	School of Art	New Haven, CT 06520
Dr.	Mary	Richards	Dean	Auburn University	Liberal Arts	Auburn, AL 36849-3501

Dr.	Marion	Michael	Director	Auburn University at Montgomery	Liberal Arts 7300 University Drive	Montgomery, AL 36117-3596
Dr.	James	Yarbrough	Dean	University of Alabama	Arts and Science	Tuscaloosa, AL 35487
Dr.	Louis	McCoy	Dean	University of Montevallo	College of Fine Arts Station 6001	Montevallo, AL 35115
Dr.	Jack	Moore	Dean	University of North Alabama	Arts and Science University Station	Florence, AL 35632-0001
Dr.	Lloyd	Benjamin	Dearn	University of Arkansas at Little Rock	Arts, Humanities and Social Sciences 33rd and University	Little Rock, AR 72204
Ms.	Jean	Firstenberg	Director	American Film Institute	2021 North Western Avenue	Los Angeles, CA 90027
Dr.	Russel	Lewis	President	Art Institute of Southern California	2222 Laguna Canyon Road	Laguna Beach, CA 92651
Mr.	Michael	Vanderbyl	Dean	California College of Arts and Crafts	School of Design 5212 Broadway	Oakland, CA 94618
Dr.	Donald	Heinz	Dean	California State University at Chico	Humanities/Fine Arts	Chico, CA 95929
Dr.	Hansonia	Caldwell	Dean	California State University at Dominguez Hills	Humanities and Fine Arts 1000 East Victoria St.	Carson, CA 90747
Mr.	Gerald	Samuelson	Dean	California State University	The Arts	Fullerton, CA 92634

Dr.	Alan	Smith	Dean	California State University - Hayward	Arts, Letters, & Social Sciences	Hayward, CA 94542
Dr.	Bobby	Patton	Dean	California State University - Los Angeles	Arts and Letters 5151 State University Drive	Los Angeles, CA 90032
Dr.	William	Sullivan	Dean	California State University - Sacramento	School of Arts and Sciences 6000 J Street	Sacramento, CA 95819-2694
			Dean	California State University - San Bernardino	Undergraduate Studies 5000 University Parkway	San Bernardino, CA 92407
Dr.	Irel	Urreiztieta	Interim Dean	California State University - Stanislaus	College of Arts, Letters, and Sciences 801 W. Monte Vista	Turlock, CA 95380
Dr.	Robert	Everding	Dean	Humboldt State University	College of Visual and Performing Arts	Arcata, CA 95521
Dr.	Arthur	Bloom	Dean	Loyola Marymount University	Communication and Fine Arts Loyola Blvd at W. 80th Street	Los Angeles, CA 90045
Mr.	Roger	Workman	Dean	Otis Art Institute of Parsons School of Design	2401 Wilshire Blvd.	Los Angeles, CA 90057
Dr.	August	Coppola	Dean	San Francisco State University	Creative Arts 1600 Holloway Ave	San Francisco, CA 94132
Mr.	William	Barrett	President	San Francisco Art Institute	800 Chestnut Street	San Francisco, CA 94133

Dr.	William	Babula	Dean	Sonoma State University	School of Arts and Humanities	Rohnert Park, CA 94928
Dr.	Robert	Benedetti	Dean	University of the Pacific	3601 Pacific Avenue	Stockton, CA 95211
Mr.	Richard	Doenges	Dean	University of Bridgeport	College of Arts and Humanities	Bridgeport, CT 06601
Mr.	Richard	Thornton	Interim Dean	University of Connecticut	Fine Arts	Storrs, CT 06269
Dr.	Stuart	Schar	Dan	University of Hartford	Art School 200 Bloomfield Avenue	W. Hartford, CT 06117-0395
Mr.	Richard	Slade	Dean	Corcoran School of Art	17th & NY, NW	Washington, DC 20006
Dr.	Vada	Butcher	Dean	Howard University	College of Fine Arts 2400 6th Street, NW	Washington, DC 20059-0001
Dr.	Arland	Christ-Janer	President	Ringling School of Art and Design	2700 N. Tamiami Trail	Sarasota, FL 34234
Ms.	Ofelia	Garcia	President	Atlanta College of Art	1280 Peachtree St., NE	Atlanta, GA 30309
Dr.	John	Kozak	Dean	University of Georgia at Athens	Arts and Science	Athens, GA 30602
Dr.	Myron	Marty	Dean	Drake University	25th Street & University Ave.	Des Moines, IA 50311
Dr.	Beverly	Byers-Pevitts	Dean	University of Northern Iowa	College of Humanities and Fine Arts 1222 West 27th Street	Cedar Falls, IA 50614

Mr.	Donald	Koller	Dean	Bradley University	Communication and Fine Arts	Peoria, IL 61625
Dr.	Vaughn	Jaenike	Dean	Eastern Illinois University	College of Fine Arts	Charleston, IL 61920-3099
Mr.	Stanley	Madeja	Dean	Northern Illinois University	Visual & Performing Arts	DeKalb, IL 60115
Mr.	Keith	Sanders	Dean	Southern Illinois University at Carbondale	Communications and Fine Arts	Carbondale, IL 62901
Mr.	William	Voos	Dean	Indiana University - Purdue University at Indianapolis	Herron School of Art 355 N. Lansing	Indianapolis, IN 46202
Dr.	William	Hickey	President	St. Mary's College	Notre Dame	IN 46556
Dr.	Phillip	Summers	President	Vincennes University	1002 North First Street	Vincennes, IN 47591-9986
			Chair	Western Kentucky University	Department of Fine Arts	Bowling Green, Ky 42101
Dr.	Kenneth	Carpenter	Dean	Louisiana State University	Design Dept.	Baton Rouge, LA 70803
Dr.	John	Trisler	Dean	Louisiana Technical University	Arts and Science P.O. Box 3168 Tech Station	Ruston, LA 71272
Mr.	William	Willis	President	Art Institute of Boston	700 Beacon Street	Boston, MA 02215
Dr.	William	O'Neil	President	Mass. College of Art	621 Huntington Avenue	Boston, MA 02115
Mr.	Arthur	Greenblatt	President	Monteserrat College of Art	Dunham Road Box 26	Beverly, MA 01915

Dr.	Nancy	Harington	President	Salem State College	352 Lafayette Street	Salem, MA 01970
Mr.	Bruce	MacDonald	Dean	School of The Museum of Fine Arts	230 The Fenway	Boston, MA 02115



APPENDIX D

TIMETABLE PROPOSAL

Outline Plan for Thesis Project Interactive Computer Graphic DataBase

TIMELINE: DATE	TASK
Week 1 Dec. 2-6 12/5	Finish & Mail Survey
Week 2 Dec. 9-13	Schedule Thesis Committee Meeting Develop Time Line Gather Materials/Info To Date Set up Journal
Week 3 Dec. 16-20	Begin Tentative Design of Project Meet with Thesis Committee 12/18 Review Project Note Changes/Additions Collected addresses for CAA/SIGGRAPH, & other other additional sources
Week 4 Dec. 23-27	Holiday - Review Research Materials Review SuperCard
Week 5 Dec. 30 - Jan. 3	Holiday - Complete Project Design
Week 6 Jan. 6-10	Show Design to Committee members





- Make adjustments to Design
- Review Survey Materials Returned
- Send out second notice if necessary
(was not necessary)
- Week 7
Jan. 13-17 Meet with Thesis Committee
- Make final adjustments and begin
implementation of Design
- Week 8
Jan. 20-24 Continue Design Implementation
- Week 9
Jan. 27-31 Continue Design Implementation
- Week 10
Feb. 3-7 Continue Design Implementation
- Week 11
Feb. 10-14 Meet with Thesis Committee
- Continue Design Implementation
- Week 12
Feb. 17-21 Continue Design Implementation
- Test
- Week 13
Feb. 24-28 Complete Design Implementation
- Test
Continue Curriculum Outline
- Week 14
Mar. 2-6 Spring Break
- Week 15
Mar 9-13 Modifications to Design
- Test
- Begin Thesis Report





- Week 16
Mar 16-20 Meet with Thesis Committee

Final Additions to Design

Test
Continue Thesis Report
- Week 17
Mar 23-27

Gather Materials for set-up for Show

Continue Thesis Report
- Week 18
Mar 30-Apr 3
Thesis Show

Continue Thesis Report
- Week 19
Apr. 6- 10 Meet with Thesis Committee

Continue Thesis Report
- Week 20
Apr. 13-17 Continue Thesis Report
- Week 21
Apr. 20-24 Continue Thesis Report
- Week 22
Apr. 27-May 1
Meet with Thesis Committee

Complete Thesis Report
- Week 23
May 4-8 Final Clean-up
- Week 24
May 11-15 Extra Time for Clean-up
- Week 25
May 18-22 Final Week before Graduation





APPENDIX E

NOTES FOR DESIGN IMPLEMENTATION

Considerations:

Instructional design
Informational design
User interface design
Graphic design

Development Ideas:

Problem Analysis

Thesis statement
Outline Plan

Collect Information

Detail Analysis
Review similar systems
Define Users and their needs
Brainstorming

Requirements/Specifications

Define Requirements and semantics

Architecture

Hardware - Ideally will run on most Apple Macintosh Computers

Functions

- 1) Provide Color Picture Information
- 2) Provide the user with a choice of modes (see navigation/authoring)
- 3) Provide an Overview of the information
- 4) Provide a brief history of the subject
- 5) Customized Database - the user can choose a subset (virtual stack) and be able to save it, retrieve it , print it.
- 6) Methods of choice - by a logical search (of attributes), one at a time
- 7) Multiple Cross-Reference - related topics or information - such as a "see also glossary," etc.
- 8) Additions to the collection - see authoring





Contents

For each School or Program: Attributes

- 1) Degrees Offered
- 2) Courses offered
- 3) Professors
- 4) Location - State/City
- 5) Cost
- 6) Hardware
- 7) Software
- 8) Related information about the school's programs, etc.
- 9) School Name

Navigation

Possible ways of Navigation:

- 1) By attribute
- 2) One at a time-Browse
- 3) TimeLine
- 4) Map/Visual
- 5) Past Topics Viewed (Keep track of path)
- 6) Escape sequences: Exit Program Completely
Fresh start
See the last thing

Authoring

Method for adding a school or updating information

- How the rest of the system will know about the additions/changes
- Printing Reports
- Related works - creating a web
- Deleting information

Design

Should be self-evident to the user - easy to use

Consistency in Titles, locations of buttons, etc.

The consistency of the layout and the functionality must be weighed





Colors

Font Choices

Interactions

The Look (Examples.. a book or catalogue motif, full screen vs. smaller, gallery motif, etc.)

Constraints

Ambiance - feeling what it is about

Stack Design

Graphic Design Elements - Grid for cards

Evaluation

Testing

End Users

Thesis Committee Evaluation

Other Software design considerations:

- Define Syntax
- Write Help Documents
- Build Prototype
- Get Reviews

Implementation

- Development of software
- Testing
- Debugging
- Operation





APPENDIX F
SURVEY LETTER- SAMPLE



Date

Address

Address

Address

Address

Dear _____:

I am a second year MFA candidate in Computer Graphics Design at Rochester Institute of Technology. My undergraduate degree is in Art Education. I am beginning my Thesis Project an interactive package which will allow a user to quickly ascertain information about Computer Graphics and Computer Art courses offered in Higher Education Programs.

Enclosed please find a *brief* survey concerning your programs and computer graphics. This data will be used to form a basis for my project. My hope is to gather as much information as quickly as possible in order to compile this data and organize it in an interactive manner. Your interest and prompt response is greatly appreciated. I would like to have the survey back before Christmas Break so that I can begin to organize the material during break. Please feel free to add any comments and to include any other information which you feel might be pertinent to this survey.

Meanwhile, I am developing design considerations for this project and hope to include photos of the various schools and programs, as well as the data. I would like to review any brochures, school catalogues etc., that you can send to me.

I also plan to develop a basic teaching curriculum guide which can be used in beginning Computer Graphics/Arts courses. If you are interested in receiving a copy of this project when it is completed, please indicate so on your survey form.

I hope this thesis project, in addition to fulfilling my degree requirements, will allow me to present a sophisticated interactive package to potential clients and give me a basis for teaching, once I graduate.

Thank you again for your assistance.

Sincerely,

Marla Matlick



APPENDIX G
SURVEY FORM- SAMPLE



Survey Questions

School:

Dept./Area:

Degrees Offered Undergraduate:

Graduate:

Computer Courses Offered

Hardware:_____

Software:

Paint/Draw_____	U	G
Page Layout_____	U	G
Interactive _____	U	G
Animation_____	U	G
Slide Design_____	U	G
Other_____	U	G

Curriculum

Requirements/Prerequisites

Hierarchy of Course Offerings

Emphasis

Professors Teaching Computer Graphics/Art

Future Plans

Please send information about your degree programs, entrance requirements, and general information about your department and school.



APPENDIX H
FOLLOW-UP LETTER- SAMPLE



Date

Address 1
Address 2
Address 3
Address 4

Dear Name:

This past Fall I conducted a survey concerning the computer art and computer graphic design courses offered at colleges and universities in the United States. I was happily overwhelmed with an initial response of over 50%. Thank you for participating in the survey.

With the collected information, I was able to develop an interactive data base. I used Supercard to create a standalone application, so that this information could be easily shared. I presented a prototype of this work at my thesis opening in March of 1992 and was immediately inundated with requests for copies by my fellow graduate and undergraduate students.

I have finally completed the thesis paper requirements that accompanies this project. The paper will be on file at RIT's library. There will be copies of the actual project on file with my thesis advisors in the graduate computer graphic department also at RIT

At this time I want to make copies of this project available to all those who expressed interest in the material. This standalone application was designed on a MAC II si and tested on the ci, cx, and fx. It should work well on any of these machines. It is in color, but can also be viewed in black and white.

If you would like a copy of this information, please send me one blank High Density, unformatted disk. I will make a copy of the project and return it to you as soon as possible. Please be sure to include your complete name and return address. Please send your disk to my new home address:

Marla Matlick Keating
351 Selye Terrace
Rochester, NY 14613

You may also contact me at my home phone (716) 254-5076, or through my thesis advisors at RIT: Mr. Robert Keough, Mr. James VerHague, and Ms. Nancy Ciolek.

Thank you again for your part in making this project a success. I am looking forward to sharing the results with you.

Sincerely,

Marla Matlick Keating



APPENDIX I

REFERENCES/ ADDITIONAL SOURCES



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- Apple Computer, Inc. 1988. HyperCard Script Language Guide: The HyperTalk Language. Reading, Massachusetts: Addison-Wesley Publishing Company.
- Bove, Tony and Cheryl Rhodes. 1990. Using MacroMind Director. Carmel Indiana: Que Corporation.
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APPENDIX J
SCRIPT ANALYSIS



SCRIPTING FOR THESIS PROJECT

CHOICE CARD and USER CARDS

*HARDWARE SEARCH SCRIPT ON THE LIST OF HARDWARE
(This script allows the user to browse through the info cards of the schools which use the hardware selected on the previous card by the user.)*

on clickList

global wholestack, idofcard, selected
lock screen
put "false" into wholestack
put the highlighted lines of me into hardee
put line hardee of cd field "hardlist" into selected

go to card id 101 of window id 100 --go to the info cards
find selected
put short id of this card into idofcard
hide background graphic id 209
hide background graphic id 212
hide background button id 203

show background button id 202
show background graphic id 210
show background graphic id 211

hide background button "right arrow"
hide background button "left arrow"
hide background graphic "right arrow"
hide background graphic "left arrow"
hide background graphic "browse"
hide background graphic id 171
hide background graphic id 173
hide background graphic id 174
hide background graphic id 175
hide background graphic id 176
hide background graphic id 177
hide background button id 192
hide background button id 194
hide background button id 195
hide background button id 196
hide background button id 197
hide background button id 193

unlock screen with visual dissolve

end clickList

*SOFTWARE SEARCH SCRIPT ON THE SOFTWARE LIST
(This script allows the user to scroll through the info cards on the schools which use the software selected on the previous choice card.)*

on clickList
lock screen

global wholestack, idofcard, selected
put "false" into wholestack
put the highlighted lines of me into softee

put line softee of cd field "softlist" into selected

--put selected

go to card id 101 of window id 100 --go to the info cards

find selected

put short id of this card into idofcard

show background button id 203 -- software

show background graphic id 212 -- arrow

show background graphic id 209 -- software search

hide background graphic id 211 -- hardware search

hide background graphic id 210 -- hardware search

hide background button id 202 -- hardware

hide background button "right arrow"

hide background button "left arrow"

hide background graphic "right arrow"

hide background graphic "left arrow"

hide background graphic "browse"

hide background graphic id 171 -- subject

hide background graphic id 173 -- sw graphic

hide background graphic id 174 -- mw graphic

hide background graphic id 175 -- ne graphic

hide background graphic id 176 -- nw graphic

hide background graphic id 177 -- se graphic

hide background button id 193 -- subject

hide background button id 192 -- sw

hide background button id 194 -- se

hide background button id 195 -- mw

hide background button id 196 -- ne

hide background button id 197 -- nw

unlock screen with visual dissolve

end clickList

SCRIPT FOR SCHOOL LIST

(This script allows the user to click on a school in the list and be taken to the main card of that particular school.)

on clickList

global thelist, index, wholestack

put the hilitedLines of me into mylines

put line mylines of cd field idlist into thelist

put 1 into index

put false into wholestack

put last item of line index of theList into cardid

lock screen

go to card id cardid of window id 100 --show the card

hide background button "right arrow"

hide background button "left arrow"

hide background graphic "right arrow"

hide background graphic "left arrow"

hide background graphic "browse"

hide background graphic id 171
hide background button id 193
hide background graphic id 211
hide background graphic id 212
hide background graphic id 210
hide background graphic "sw"
hide background graphic id 174
hide background graphic id 175
hide background graphic id 176
hide background graphic id 177
hide background graphic id 208
hide background graphic id 209
hide background button id 192
hide background button id 194
hide background button id 195
hide background button id 196
hide background button id 197
hide background button id 202
hide background button id 203

unlock screen with visual dissolve

end clickList

SCRIPT FOR NEW SEARCH BUTTON ON CHOICE CARD
(This script allows the user to exit the search in progress and return to the user card to choose another search method.)

NEW SEARCH

on mouseup
-- go to new search card
lock screen
go to card id 101 of window id 102
unlock screen with visual dissolve
end mouseup

THE QUIT BUTTON THROUGHOUT THE USER AND INFO CARDS
(This script takes the user to the next to the last card where the user has a choice to either quit or print a listing of the information that was marked to be printed.)

QUIT

on mouseUp
lock screen
go to cd id 107
unlock screen with visual dissolve
end mouseUp

THE SEARCH BUTTON ON OPENING SCREEN
(This script takes the user to the User Card where the user can choose what kind of search they wish to perform.)

SEARCH

on mouseup
-- go to new search card
lock screen
go to card id 101 of window id 102
unlock screen with visual dissolve
end mouseup

THE SEARCH BY SCHOOL BUTTON ON THE CHOICE CARD SCREEN (This script sorts the info cards by school , reading the name of each school and placing it in a list . The user can then select a school by clicking on the name in the list.)

SCHOOL

```
on mouseUp
  lock screen
  go to cd id 101 of window id 100 --starts at beginning of data
  cards and field list
  set cursor to watch
  sort by field "School"
  -- sorts data cards

  put field "School" into currentschool
  put currentschool&return into schoollist
  put short id of this card&return into idlist
  -- reads field, records it and it's corresponding card id

  repeat for number of cards of this window - 1
    go next
    if currentschool is field "School" then
      put short id of this card &return after idlist
    else
      put field "School"&return after schoollist
      put field "School" into currentschool
      put ", "& short id of this card &return after idlist
    end if
  end repeat
  -- checks rest of fields, puts card ids of duplicates together
  -- and records them
  -- records fields that are different and their card ids

  go cd id 102 of window id 102

  put schoollist into cd field "schoollist"
  show cd fld "schoollist"

  hide cd fld "hardlist"
  hide cd fld "softlist"
  --show cd fld id "10"
  put idlist into cd field "idlist"
  --set cursor to browse
  -- returns to beginning of data cards and displays field list
  -- for user to make choice for viewing

  unlock screen with visual dissolve
end mouseUp
```

THE SEARCH BY REGION BUTTON ON THE CHOICE CARD SCREEN (This script takes the user to card containing a map of the United States divided into regions. There the user can select which region he/she wishes to review.)

REGION

```
on mouseUp
  --location
  lock screen

  go to card id 104 of window id 102
```

```
hide cd graphic id 151
show cd graphic id 109
show cd graphic id 147
show cd graphic id 148
show cd field id 149
show cd button id 160
show cd button id 161
unlock screen with visual effect dissolve
end mouseUp
```

THE SEARCH BY HARDWARE BUTTON ON THE CHOICE CARD SCREEN (This script allows the user to view a list of the schools which use the hardware he/she has chosen to review. The user selects the hardware by clicking on it and is then taken to the first school in the stack of info cards which use that particular hardware.)

HARDWARE

```
on mouseUp
  global holderA, holderB, holderC, wholestack
  put false into wholestack
  lock screen
  go to cd id 102 of window id 102
  show cd field "hardlist"
  hide cd fld "schoollist"
  hide cd fld "softlist"

  --put empty into cd field "hardlist"

  -- go to cd id 101 of window id 100 --starts at beginning of data cards
  and field list
  -- set cursor to watch
  -- put empty into holderC
  -- put empty into holderA
  -- put empty into holderB
  --
  --
  -- repeat with counter = 1 to the number of cards in window id 100
  --
  --   put union(holderA,holderB) into holderC
  --
  --   go next
  --   put bg field "hardware" into holderB
  --
  -- end repeat
  --
  -- go cd id 102 of window id 102
  --
  -- put holderC into cd field "hardlist"
  --
  --
  -- set cursor to browse
  -- -- returns to choice cards and displays field list
  -- -- for user to make choice for viewing
  --
  -- -- unlock screen with visual dissolve
end mouseUp

--function UNION
-- global holderA,holderB,holderC, counter
--
-- put bg field "hardware" into holderA
```

```

--
-- repeat with n =1 to number of lines in holderA
--   put line n of holderA &return after holderC
-- end repeat
-- put holderC into cd field "hardlist" of cd id 102 of window id
102
--
-- go next
--
-- put bg field "hardware" into holderB
--
-- repeat with m=1 to number of lines in holderB
--
--   push card
--   go to cd id 102 of window id 102
--   put line m of holderB into z
--   find it in cd field "hardlist"
--   put result ( )
--   if the result is empty then
--     put z&return after cd field "hardlist"-- of cd id 102 of window
id 102
--     put z&return after holderC
--   end if
--   pop card
-- end repeat
--
-- return cd fld "hardlist" of cd id 102 of window id 102
-- put empty into holderA
-- put holderC into holderA
--
--end UNION
--
----on mouseUp
---- put union(cd field a,cd field b) into cd field c
----end mouseUp
--
-----function union x,y
---- put empty into cd fld c
---- repeat with n=1 to number of lines in x
----   put line n of x &return after cd fld c
---- end repeat
---- repeat with m=1 to number of lines in y
----   put line m of y into z
----   find whole z in cd fld c
----   if the result is not empty then
----     put z&return after cd fld c
----   end if
---- end repeat
---- return cd fld c
----end union

```


*THE SEARCH BY SOFTWARE BUTTON ON THE CHOICE CARD
SCREEN (This script sorts the info cards by software and creates a list of
all the software used. The user can then click on a particular software
name in the list and browse through the schools which use this software.)*

SOFTWARE

```
on mouseUp
  global holderA, holderB, holderC, wholestack
  put false into wholestack
  lock screen
  go to cd id 102 of window id 102
  show cd field "softlist"
  hide cd fld "schoollist"
  hide cd fld "hardlist"

  -- put empty into cd field "softlist"

  -- go to cd id 101 of window id 100 --starts at beginning of data cards
  and field list
  -- set cursor to watch
  -- put empty into holderC
  -- put empty into holderA
  -- put empty into holderB
  --
  --
  -- repeat with counter = 1 to the number of cards in window id 100
  --
  -- put union(holderA,holderB) into holderC
  --
  -- go next
  -- put bg field "software" into holderB
  --
  -- end repeat
  --
  -- go cd id 102 of window id 102
  --
  -- put holderC into cd field "softlist"
  --
  --
  -- set cursor to browse
  -- -- returns to choice cards and displays field list
  -- -- for user to make choice for viewing
  --
  unlock screen with visual dissolve
end mouseUp
--
--function UNION
-- global holderA,holderB,holderC, counter
--
-- put bg field "software" into holderA
--
-- repeat with n =1 to number of lines in holderA
-- put line n of holderA &return after holderC
-- end repeat
-- put holderC into cd field "softlist" of cd id 102 of window id 102
--
-- go next
--
-- put bg field "software" into holderB
--
-- repeat with m=1 to number of lines in holderB
--
```

```

-- push card
-- go to cd id 102 of window id 102
-- put line m of holderB into z
-- find it in cd field "softlist"
-- put result ()
-- if the result is empty then
--   put z&return after cd field "softlist"-- of cd id 102 of window
id 102
--   put z&return after holderC
-- end if
-- pop card
-- end repeat
--
-- return cd fld "softlist" of cd id 102 of window id 102
-- put empty into holderA
-- put holderC into holderA
--
--end UNION
--
----on mouseUp
---- put union(cd field a,cd field b) into cd field c
----end mouseUp
--
-----function union x,y
---- put empty into cd fld c
---- repeat with n=1 to number of lines in x
----   put line n of x &return after cd fld c
---- end repeat
---- repeat with m=1 to number of lines in y
----   put line m of y into z
----   find whole z in cd fld c
----   if the result is not empty then
----     put z&return after cd fld c
----   end if
---- end repeat
---- return cd fld c
----end union

```

THE SEARCH BY SUBJECT BUTTON ON THE CHOICE CARD SCREEN (This script allows the user to enter any word or term he/she wishes to search by. The user is then taken to the first info card with that word or term. The user can then re-view all the info cards which contain that word or term.)

SUBJECT

```

on mouseUp
  global subject, start, wholestack
  put false into wholestack
  lock screen
  go to cd id 105
  unlock screen with visual dissolve

  --put true into wholestack
  ask "What subject matter would you like to view?"
  put it into subject

  lock screen
  if subject is empty then
    show cd field "enter data"
    exit mouseUp
  else

```

go to cd id 101 of window id 100

find subject

if the result is empty then

--if the ID of this bg is 100 then

put short id of this card into start

hide background button "right arrow"

hide background button "left arrow"

hide background graphic "right arrow"

hide background graphic "left arrow"

hide background graphic "browse"

show background graphic id 171

hide background graphic "sw"

hide background graphic id 174

hide background graphic id 175

hide background graphic id 176

hide background graphic id 177

--hide background graphic id 208

hide background graphic id 209

hide background graphic id 210

hide background graphic id 211

hide background graphic id 212

show background button id 193

hide background button id 192

hide background button id 194

hide background button id 195

hide background button id 196

hide background button id 197

hide background button id 202

hide background button id 203

find subject

else

beep

go to card id 105 of window id 102

show cd field "try again"

end if

end if

--end if

end mouseUp

THE BROWSE BUTTON ON THECHOICE CARD SCREEN (This script allows the user to browse through all of the information cards.)



on mouseUp

lock screen

global thelist, index, wholestack

put true into wholestack

go to card 1 of window id 100

show background button "right arrow"

show background button "left arrow"

show background graphic "right arrow"

show background graphic "left arrow"

show background graphic "browse"

hide background graphic id 171

hide background graphic "sw"
hide background graphic id 174
hide background graphic id 175
hide background graphic id 176
hide background graphic id 177
--hide background graphic id 208
hide background graphic id 209
hide background graphic id 210
hide background graphic id 211
hide background graphic id 212
hide background button id 193
hide background button id 192
hide background button id 194
hide background button id 195
hide background button id 196
hide background button id 197
hide background button id 202
hide background button id 203

unlock screen with visual dissolve

end mouseUp

scripting for thesis project - info cards, map and ending cards

*REGIONAL SORT BUTTONS ON MAPSCREEN (example: NW)
(Each button works in the same manner, so only one is demonstrated here. This script allows the user to click on a particular region and see the info cards of the schools within that particular region.)*



on mouseup

global wholestack, idofcard
put false into wholestack
lock screen

go to cd id 101 of window id 100 --starts at beginning of data
cards and field list

set cursor to watch
show background button id 197
show background graphic id 176
hide bg graphic id 141
hide bg graphic id 140
hide bg graphic id 139
hide bg graphic id 178
hide background button id 193
hide background graphic id 171
hide background graphic id 174
hide background graphic id 175
hide background graphic id 177
-- hide background graphic id 208
hide background graphic id 209
hide background graphic id 210
hide background graphic id 211
hide background graphic id 212
hide background button id 192
hide background button id 194
hide background button id 195


```
hide background button id 196
hide background button id 202
hide background button id 203
```

```
find string "NW" of bg fld "AREA"
if foundtext() is empty then
```

```
    go to cd "map" of window "choosecards"
    unlock screen
    beep
    show cd field "no schools"
    wait 3 seconds
    hide cd field "no schools"
else
    put the short id of this card into idofcard
end if
unlock screen with visual dissolve
end mouseup
```

FINAL QUIT BUTTON ON CLOSING CARDS (This script exits the program and quits the search).

```
on mouseUp
    editor
    domenu "quit"
end mouseUp
```



PRINT CHOSEN LIST BUTTON ON CLOSING CARD (This script allows the user to print a list of the schools which were marked while viewing the data on the screen. Using Print Navigator, the list of schools can be printed and used as a resource for writing and or calling the schools for more information.)

```
on mouseUp
    -- get the name of a file
    -- open the file
    -- write the contents of each marked card
    -- close the file
    global markcount
    show card field "wait for data"
    set cursor to watch
    lock screen
    put "Thank you for viewing this computer graphic data."&&return into
    info
    put "Below you'll find your selected colleges with accompanying in-
    formation."&&return after info
    put return after info
    put "Your selections:"&&return after info
    put return after info
```



```
go to card id 101 of window id 100
repeat number of cards in window id 100 -1
    if item 1 of background field "marked card" is "true" then
```

```
        put background field "school"&&return after info
        put background field "dept"&&return after info
        put background field "degrees"&&return after info
        put background field "address"&&return after info
```

put return after info

end if
go next card
end repeat

go to card id 107 of window id 102
put info into cd field "data" of cd id 108 of window id 102
--set cursor to browse

--open printing
go to cd id 108 of window id 102
unlock screen with visual dissolve

show card field "instructions"
domenu "print navigator"
end mouseUp

SEE LOCATION BACKGROUND BUTTON ON INFORMATION CARDS (This script allows the user to momentarily view the map of the United States and see the approximate location of the school being reviewed. The school location will appear as a star on the map and the user will also hear a tone. The user will then be returned to the info card he /she was currently viewing.)

SEE LOCATION

on mouseUp
lock screen
get background field "location"
put item 1 of background field "location" into x
put item 2 of background field "location" into y
push card

go to cd id 104 of window id 102
show cd graphic id 151
hide cd graphic id 109
hide cd graphic id 147
hide cd graphic id 148
hide cd field id 149
hide cd button id 160
hide cd button id 161
unlock screen with visual dissolve

set the loc of cd button id 125 to x,y
beep
show cd button id 125
wait 3 seconds
hide cd button id 125
visual effect dissolve
pop card

end mouseUp

MARK FOR LIST BACKGROUND BUTTON ON INFORMATIONAL CARDS (This script allows the user to mark any info card he/she would like to later get a printout on. When exiting the program, the user will have the opportunity to print the names, addresses, and phone numbers of the schools that were currently marked .)

MARK FOR LIST

```
on mouseUp
  global markcount, match
  --mark for list

  if hilite of me is true then
    add 1 to markcount
    put "true" into background field "marked card"
    put item 1 of background field "connector" into match

    lock screen
    push card
    go to card id 101 of window id 101
    get item 1 of match
    find it in background field "connector"
    put "true" into background field "marked card"

    pop card

    unlock screen

  else
    put "false" into background field "marked card"
    put item 1 of background field "connector" into match

    lock screen
    push card
    go to card id 101 of window id 101
    get item 1 of match
    find it in background field "connector"
    put "false" into background field "marked card"

    pop card

    unlock screen
    subtract 1 from markcount
  end if

end mouseUp

on mouseUp
  global markcount
  --mark for list

  if hilite of me is true then
    add 1 to markcount
    put "true" into background field "marked card"
    --if item 1 of marked is "true" then beep

  else
    put "false" into background field "marked card"
    subtract 1 from markcount
    --if item 1 of marked is "false" then beep
```

end if

--set marked of this card to not marked of this card
--set hilite of me to marked of this card

end mouseUp

MORE INFORMATION BACKGROUND BUTTON ON INFORMATIONAL CARDS (This script allows the user to toggle to a second data card of additional information about the school being veiwed.)

MORE INFO...

on mouseUp
--info button
global match
put item 1 of background field "connector" into match
lock screen

push card
go to card id 101 of window id 101
get item 1 of match
-- put match
find it in background field "connector"

unlock screen with visual dissolve

end mouseUp

RIGHT ARROW BROWSE BUTTON ON INFORMATIONAL CARDS (This script allows the user to browse through all the cards currently in the stack.)



on mouseUp
global index, thelist, wholestack
if wholestack is true then
go to next card

else --we have a customized database
if index < number of lines in theList then
add 1 to index
put last word of line index of theList into cardid
go to card id cardid --show the card
else
beep
end if
end if
end mouseUp

LEFT BROWSE BUTTON ON INFORMATIONAL CARDS (This script allows the user to browse backwards through all the cards currently in the stack.)



on mouseUp
global index, thelist, wholestack
if wholestack is true then
go to prev card


```

else --we have a customized database
  if index > 1 then
    subtract 1 from index
    put last word of line index of theList into cardid
    go to card id cardid of this bg--show the card
  else
    beep

  end if
end if
end mouseUp

```

HARDWARE SEARCH BUTTON ON INFORMATIONAL CARDS (This script allows the user to go to the next school's info card which contains the selected hardware from the choice card list.)



```

on mouseup
  global idofcard, selected
  lock screen

  go next
  find selected
  put the short id of this card into y
  if item 1 of idofcard = item 1 of y then
    beep
    go to cd id 101 of window id 102
    unlock screen with visual dissolve

  else
    unlock screen
  end if

end mouseup

```

SOFTWARE SEARCH BUTTON ON INFORMATIONAL CARDS (This script allows the user to go to the next school's info card which contains the selected software from the choice card list.)



```

on mouseup
  global idofcard, selected
  lock screen

  go next
  find selected
  put the short id of this card into y
  if item 1 of idofcard = item 1 of y then
    beep
    go to cd id 101 of window id 102
    unlock screen with visual dissolve

  else
    unlock screen
  end if

end mouseup

```

REGION SEARCH BUTTON ON INFORMATIONAL CARDS
(This script allows the user to scroll through all the schools in a particular region.)



```
on mouseup
  global idofcard
  lock screen

  go next
  find string"NW" of bg fld "AREA"
  put the short id of this card into y
  if item 1 of idofcard = item 1 of y then
    beep
    go to cd id 101 of window id 102
    unlock screen with visual dissolve

  else
    unlock screen
  end if

end mouseup
```

SUBJECT SEARCH BUTTON ON INFORMATIONAL CARDS
(This script allows the user to scroll through all the schools which contain a particular word or term in the information on their card.)



```
on mouseUp
  global subject, start
  lock screen
  --if subject is not empty then
  go next
  find subject

  if short id of this card is not start then
    --if the ID of this bg is 2699 then
    unlock screen
  else
    beep
    go to cd id 101 of window id 102
  end if
  --end if
  --end if

end mouseUp
```

RETURN TO MAIN CARD BUTTON ON ADDITIONAL INFORMATION CARDS
(This script returns the user to the main informational card of the school currently being reviewed.)



```
on mouseUp
  --return to tour

  pop card
end mouseUp
```

MORE INFO ON ADDITIONAL INFORMATIONAL CARDS (This script currently shows as field explaining there is no more information. It is a holder for anyone who might want to add to this stack of information and can be used to link to other cards, stacks or perhaps videos or slide shows.)

MORE INFO...

```
on mouseUp
  show background field "no more"
  wait 3 seconds
  hide background field "no more"
end mouseUp
```



APPENDIX K
USER INSTRUCTIONS



USER INSTRUCTIONS

- 1) Please make a backup copy of this information before using it.
- 2) If you have difficulty using the application, you may need to turn off inits such as "multifinder." I also encountered some printing problems caused by a conflict with After Dark screen saver files. You may want to disable After Dark if you currently have it on your machine and also other screen savers you may have on your system.
- 3) This project was designed on System 6.07, but should run fine on System 7, providing you have enough RAM. I recommend at least 5 megs of RAM.

4) GETTING STARTED:

Double click on the icon to open the application.

A. SCREEN ONE:

This is an introduction screen with basic instructions. From this screen you can choose to "quit" or begin a "search." By clicking on the search button, you will move to the CHOICE screen.

B. SCREEN TWO - CHOICE SCREEN:

This screen contains buttons listing the different search methods. Choose the method of search by clicking on the corresponding button:

HARDWARE - this will take you to a screen which contains a list of all the hardware used by schools in the survey. Click on the type of hardware you wish to view. The first school which uses the hardware you chose will appear. After reading the data on that screen you can

view the next school using this hardware by clicking on the HARDWARE BUTTON at the bottom left of the screen.

SOFTWARE - this will take you to a screen which contains a list of all the software used by schools in the survey. Click on the type of software you wish to view. The first school which uses the software you chose will appear. After reading the data on that screen you can view the next school using this software by clicking on the SOFTWARE BUTTON at the bottom left of the screen.

SCHOOL - this will take you to a screen which contains a list of all the schools participating in the survey. Click on the school you wish to view. When you are finished reviewing the information, click on the "New Search" button to view another school or switch to another search method.

REGION - When you click on this button a map of the United States will appear. Select the region you wish to view by either clicking on the map or on the name of the region below the map. You will then see the data card of the first school of that region. Click on the region button at the bottom left of the screen to view the next school in that region.

SUBJECT - By clicking this button, you will display a screen that allows you to enter any subject, word, or name. Do so by typing in the box provided. Please note: the computer will search for an exact match for the word or words you enter. Consider abbreviations, dashes, plurals and multiple word phrases when you type in your choice. The simpler you make your entry, the more likely it will be matched. Upper/lower case letters do not affect the matching done by the computer. You might use this feature to find the name of a particular person, a place or town, the name of a school, or any term pertaining to this field. If the computer cannot find a match, a match will appear and you will be prompted to continue with another search. If you do make a match, you can continue searching for this subject by clicking the subject button at the bottom left of the screen.

BROWSE - This selection allows you to browse through all the schools in the application. You can browse forward and backwards through the datacards.

C. THE MAIN DATA CARDS

There is a MAIN DATA CARD for each school in the application. The information on this card includes the name of the school at the top of the card, the department and program name of the school participating in the survey, the contact person who completed this survey, their address and phone, a listing of the faculty teaching computer art and/or graphics, the degrees offered in this area of study, the hardware used and the software used in this program.

On the bottom left of the screen are buttons which allow you to maneuver through the program.

IMPORTANT: The top left button, "QUIT" will take you to a screen where you will have a choice to either quit or print a listing of marked cards before quitting.

The NEW SEARCH button will return you to the Choice Screen.

The SEE LOCATION button will temporarily take you to the map. You will hear a tone and a marker will appear on the map, showing the approximate location of the school which you are reviewing. You will then return to the data screen.

The MARK FOR LIST button will allow you to choose school you would like to include in a final printout. If the small square is blank, the card is not marked. If the small square contains an "X" the card is marked for printing.

The MORE INFORMATION button will take you to the second data card of the school you are reviewing. You can toggle between these

cards, but cannot browse through the second set of data cards without returning first to the main data cards.

At the bottom left of the screen one of several buttons will appear, depending on the type of search you selected on the CHOICE SCREEN. This button will take you through whichever choice you made. In some cases, once you have viewed all the cards that meet the criteria of your search, you will be returned to the CHOICE SCREEN. In other cases, you will be able to loop through all of the data cards and move backwards as well as forward.

D. The ADDITIONAL DATA CARD

There is a second data card for each of the schools participating in the survey. This card contains the name of the school at the top/center of the screen. Below this are three areas of specific information: Course Offerings, Prerequisites, and Future Plans in the area of Computer Art and Graphics.

On the bottom left of the screen, the user will find the now-familiar area of buttons. These are the same as on the main data screen except for the extreme bottom left. On this screen, there are two buttons named MORE and RETURN. The MORE button is designed as a space holder for future additional information. This button is currently inactive and you will receive a message that no additional information is available if you click it. I have included it so that I can add additional screens of data or slide or movie presentations about the schools. At presents I have developed a slide presentation on RIT's Computer Graphic Design program using MacroMind Director. This presentation requires the use of a 44 meg SyQuest Cartridge and is therefore, not included in the application. The RETURN button will toggle the user back to the main data card.

NOTE: You may use the MARK FOR LIST button on either the main or additional information cards.

E. THE QUIT AND PRINT PROCEDURE

At any time you will be able to quite the program by clicking the QUIT button. However, you will first be taken to a credits screen which gives you the option to PRINT a listing of the cards that are marked. If you do not want a printout, simply click the QUIT button here and you will exit the program. If you would like a printout of the school and their contacts that you marked, click the PRINT button. The computer will compile the information and display it on the right side of a screen within a scrolling field. On the left of the screen will appear a box called the print manager. To print the list of information, click on the printer icon at the top of the box, then click on the field of information to the right. NOTE: Please be sure that your printer is connected and on before trying to print. At this point you can choose to QUIT and exit the program.

Please note that this is the first project of this type that I have developed. If you have questions concerning the program, or the instructions, please feel free to contact me and I would be happy to assist you if at all possible. I would appreciate your comments and criticisms as well as your suggestions. Thank you for participating in this project.

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APPENDIX L

**INSTRUCTIONS FOR MODIFYING
THE PROJECT**





INSTRUCTIONS FOR MODIFYING THE PROJECT

Making Changes to Existing Data

To update information in the project simply open the desired card while in SuperEdit. The fields of information exist in the background. Select background from View on the menu bar, or do a Command-B to get to the background. Here, by clicking on the appropriate fields you can add, delete, and change information. This works in a similar manner to other word-processing programs. You can highlight material to modify or delete it. Position the cursor in front of where you would like to add data. Also, the size of the field may be made larger or smaller by clicking on an end point and dragging to re-size the field. If you add or delete information from the HARDWARE or SOFTWARE fields, you may also need to add or delete it from the CHOICE fields on the card containing the CHOICE fields. NOTE: BE CAREFUL! The data may already be included in this field because another school uses this software or hardware. Conversely, if you are deleting information, you may not want to delete it from the CHOICE field, since another school's data card may still contain the information. You can check this by running the project prior to editing and see which, if any, other schools contain the same information you are attempting to add or delete.

Deleting a School and It's Data

To delete an existing school, you must delete the main data card and the additional data card on that school. In addition, you must delete the necessary information in the CHOICE fields (Hardware, Software, and School Name). SEE NOTE in the MODIFYING INFORMATION section above before deleting any information in the Hardware and Software fields.

Adding a New School to the Project

Adding a new school is the most involved of all the editing in the project.

First, you must create a main data card and an additional data card for the school. You can select all the elements on another card and do a "copy" and "paste" to the new card to obtain the correct background and fields. Enter the appropriate information into the data fields. Take care to maintain the same format in regards to abbreviations and spellings in order for the search methods to continue to work properly. Information in the Hardware and Software fields must be added to the corresponding CHOICE card fields if the information is COMPLETELY new to the project. (SEE NOTE in modifying the information section before adding information to the Hardware and Software fields). The school name must also be added to the School field on the CHOICE Card. NOTE: If the CHOICE fields are not visible on the CHOICE cards, you may need to select "show invisibles" from VIEW on the menu bar. The fields overlap, and the larger fields may be covering the smaller ones, so it may be necessary to move the fields on top slightly to show all the fields. Be sure to re-adjust the location after entering the new data.

In addition to entering the above data, there are four invisible field on each of the Main and Additional Information Data cards of each school. Information in these invisible fields assist the user as they maneuver through the project. You can view these fields by again selecting "show invisibles" from VIEW on the Menu Bar. The first field contains a number. This is the "CONNECTOR" field. It connects the main data card to the additional data card through scripting. You must be sure to type in a new number for any new cards you add. The additional data card must have the same number in its connector field in order for the scripting to match the two when the user clicks the More Info button. The second field is the MARKED CARD control. When the user clicks the Mark for List button this field (and the corresponding field on the additional data card) is toggled from

Marked to Unmarked. If the card is marked for printing, it should read "TRUE", otherwise it should read "FALSE". When the user clicks the Mark for List button, the computer seeks out the corresponding data card, using the connector field number and also marks or un-marks the corresponding card. This field must be included on all data cards in order for the user to be able to mark a card from any location in the project. The next invisible field is the LOCATION field. This field contains the x,y coordinates of the school's location on the map. When the user clicks the SEE LOCATION button on the data cards, they are taken to the map and a star will appear on the map at the x,y coordinates, indicating the school's location. You must find the x,y coordinates and enter the data here on both the main data and additional data cards. The final invisible field is the AREA. This contains the location code, such as "Southwest" or "Northeast" for the REGION search. The codes are all two-letters: (SW, SE, NE, NW, or MW). See the location map for the division of the United States and enter the appropriate code in the AREA field.

Making MANY New Entries

If you are planning to make a lot of new entries, you may wish to temporarily modify the scripting on the HARDWARE and SOFTWARE fields of the CHOICE Card. If you view the scripting, you will see that there is a great deal of scripting commented out. This unused script is there because it was the original way that the HARDWARE and SOFTWARE fields were created. This script goes to the corresponding fields on each of the Main data cards and writes the information into the CHOICE cards fields. However, I was unable to get the script to delete duplicates. Therefore, after using the script to enter the data, I used the alphabetizing method available in Supercard and then deleted, by hand, all the duplicates. This is a faster way to work ONLY if you are entering a lot of new schools into the project. It will take a MAC II fx approximately one to one and one-half hours to complete this task, using the scripting. After you have used this method, be sure to once again comment-out the script and use only the script that was originally not commented in order to run

the project. If you do not remember to make this change, the machine will once again begin to re-compile all the information and you will have to wait the hour or more, and then alphabetize and delete duplicates all over again! A good project for an advanced scripting student might be to get this script to work more efficiently and with more speed.

My best to you in your editing! If you have any questions please do not hesitate to contact me.

Marla Matlick Keating