

College of Applied Science Interactive CD-ROM

By

Hao P. Doan

Submitted to the Faculty of the Information Engineering Technology Program
in Partial Fulfillment of the Requirements
for
the Degree of Bachelor of Science
in Information Engineering Technology

University of Cincinnati
College of Applied Science

March 2001

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3/15/01
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Acknowledgements/Dedication

I would like to thank my advisor Dr. Geonetta for all his help, and guidance throughout my project. I would also like to thank John Pham for teaching me about Photoshop.

I dedicate this project to my parents for everything they do. They have always supported me throughout my life. This is for you Mom and Dad.

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Abstract

Prospective students can learn about College of Applied Science (OCAS) by using this interactive CD-ROM. The CD has information about OCAS and more.

Prospective students can read about majors, requirements, admission, and tuition.

Students can also see many videos about the University, the classroom, and the campus.

The CD is designed for students to interact with the program. Students will have full control of the data. They can choose what they want to learn or see at any given time.

College of Applied Science Interactive CD-ROM

1. Statement of the Problem

There are many kinds of interactive CD-ROMs, such as those for learning to play an instrument, training for an exam, listening to music, watching a video, or playing a game. Anyone who wants to learn or know more about any subject can probably find it on a CD-ROM. Universities are also using personal electronic media like CD-ROMs and the Internet to help potential students learn about them. For example, Western Kentucky University and Bryant College have interactive CD-ROM's for prospective students. The University of Cincinnati needs to take advantage of such digital media. The time has come for College of Applied Science (OCAS) to create an interactive CD-ROM.

1.1 Definition of the Need

The College of Applied Science needs an interactive CD-ROM that informs prospective students about the college. The CD should give prospective students an opportunity to learn about OCAS. Today, students do not just get brochures from colleges. Many times students also get an interactive CD-ROM that gives them more information about that university or college. Students not only learn about the different majors, requirements, administration, and organizations, but also can take a tour of the campus, the library, and the laboratories, and see interviews with students and professors. There are short videos about the campus, the faculty, and cooperative education. Additionally, an interactive CD gives students more options than the Internet. For example, it is much quicker to access a video clip of campus than waiting to download it from the Web. It is convenient and easy to access, and gives a great deal of information. Since OCAS is a technology college it needs to use the same technology. My main goals

for designing an interactive CD are to let prospective students know about OCAS, to make it easy for students to access OCAS, and to market the College. Since OCAS is not on the Clifton campus, many students do not know about it. The CD gives students the opportunity to find out about the College.

2. Description of the Solution

The CD contains information about all majors. For example, it shows the requirements for each major; it includes admission requirements and procedures; it includes a schedule of when required courses should be taken during a student's college career; it provides information on financial aid, administration, professors, and the deans, contact addresses and phone numbers. The CD also has tours of the campus, the library, and the laboratories. It provides statistics about job placement and a description of the jobs student get after receiving their degrees. There are interviews with students and professors.

I developed the OCAS CD-ROM in three stages. The first part was researching, the second was laying out information, and the third was designing. The research consisted of finding how many programs are at OCAS, including what the requirements are to enroll, courses, and types of degree available. I researched the history of OCAS. I included video clips of the campus, the library, and the laboratories. I interviewed professors and students.

Once I completed the research, the next step was to layout the information I gathered. I organized the information so that it is easy for prospective students to navigate through the information.

The most important part is the design because this determines how it appears.

There are many factors that came into play. I considered what kind of background, color, texture, scheme, and graphics to use. I chose three primary colors for my project: light blue, dark blue, and gold. These colors give a feeling of calm and comfort.

To put the information together, I found software to enhance my design. I looked at three software programs, Toolbook, Director 7, and Authorware. I was familiar with Toolbook and Director 7, but I was not familiar with Authorware. Authorware is complicated software to learn, but it has a lot of great features. Toolbook is easy to learn, but it doesn't have the flexibility and those great features. Director 7 is in-between Toolbook and Authorware; that's why I chose it. It has the great features of Authorware and it's easier to learn than Authorware. Toolbook doesn't have a lot of features I needed for my project.

2.1 User profile

The targeted users are prospective students who just graduated from high school, and transfer students from different colleges. Most of the prospective students grow up playing video games and using the Internet so they know what a computer is and how to use it. They should not have a problem using the interactive CD-ROM because they are more knowledgeable than their parents about computers and other electronic devices.

2.2 Design Protocols

To develop my project, I divided it into three parts. The first was to gather information about OCAS. The second was to design the layout for the interactive CD-ROM, and the third was to develop functions and codes to make it interactive.

After gathering information about OCAS, I put the information into a flowchart.

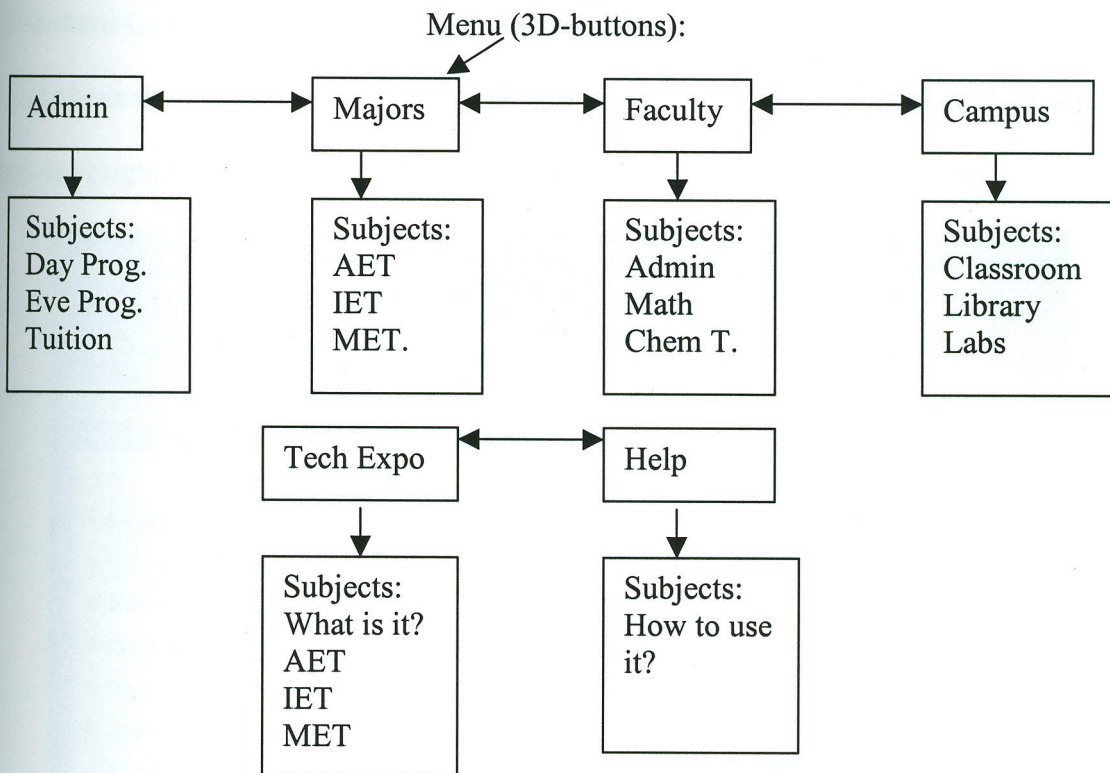


Figure 1. Flowchart

The flowchart gave me a sense of how the users were going to see the information. There are six subjects in the flowchart. They are Admissions, Majors, Faculty, Campus, Tech Expo, and Help. Each of these subjects has many Sections. For example, in Admissions the sections are Program Requirements, Registration, Graduate Placement, Day Programs, Evening Programs, and Transfer Students. Each category has data pertinent to it. For example, in the Day Program section, students can find information about what is offered during the day and what degrees that may be earned.

I then designed the layout, including command buttons, navigation buttons, and data. I determined where the command buttons, the navigation buttons, and data should be placed. The best layout is to have six subjects at the top, and make them

3D-buttons (see Figure 2.). The color schemes are gold, blue, gray, and white (see Figure 2.). I chose these colors because they are easy on the eye, they are friendly colors, and they are bright. These colors feel safe, comforting, and welcoming to the user.



Figure 2. Layout

There are two screens below the 3D-buttons. The left screen is smaller, and contains the subjects. The other screen is larger and has the information for the subject (see Figure 2.). All the subjects can be selected to open their information. This layout gives the user control over the information. The user is able to navigate from menu to menu, and subject to subject.

Finally, I programmed the command buttons. I entered the codes for each command button, the codes for each subject, each category, and each hyperlink. If a user selects the Campus button, it takes him to the Campus screen and he sees all the campus information. In the Campus section, he can view the library, laboratories, scenery, and

parking. If a user does not know what to do, he can select the Help button, and it gives him directions to use the CD.

3. Deliverables

My goal was to have an interactive/multimedia CD-ROM. The user can interact with the CD. The user is able to move from menu to menu, subject to subject and data to data. In each subject the user can find the information about the subject. For example, if he/she goes to the Admissions menu there are several subjects he/she can choose from. Each subject he/she chooses has information pertaining to the subject. Every time the user moves from one menu to another menu there is a video clip that the user can see before interacting with that menu, that subject, and that data. The user can see pictures of the campus, the library, the classroom, and the laboratories.

4. Timeline

See Appendix A.

5. Budget

The software I used was Macromedia Director 7, Adobe Photoshop 5, and Adobe Premiere 5. Director 7 costs \$999.00 for a full version, Photoshop 5 costs \$600 for a full version, and Adobe Premiere 5 costs \$535 for a full version. Since this is for educational purposes, OCAS provided the software. There is no cost for hardware because I already have a computer, and the college has a lab that is equipped with the software I needed. The only expense was a book to help learn Director 7, costing \$50 (see Figure 3.).

Budget	Estimate	School help
Software - Director 7	\$999.00	Free
Software – Photoshop 5	\$600.00	Free
Software- Adobe Premiere 5	\$535.00	Free
Hardware - Computer	Own/Lab	Own/Lab
Misc. -Book	\$ 50.00	\$50.00
Total	\$2183.00	\$50.00

Figure 3. Budget

6. Proof of Design

The CD automatically starts itself, and begins to play the program. The first thing the user sees is a short video clip that introduces the user to the University of Cincinnati.



Figure 4. Introduction to University of Cincinnati

6.1 Menus

After a minute and twenty seconds of video, the user is prompted to begin interacting with the CD. In the Admissions Menu there are ten subjects (see Figure 5.). The user can navigate to any subject he/she likes to read about the subject. In the data section, the user reads about the information about that subject. Many subjects contain data that could not fit in the data section so there is a link at the bottom of the section to let the user navigate through the information. The navigation is linear for all the data.

The user has total control of where he/she wants to go. He/she can go to Majors, Faculty, Campus, Tech Expo, Help, or Exit. When the user selects any new menu there is a short video clip pertaining to the menu. After the video clip ends, it takes the user to that subject.



Figure 5. Admissions Menu

For example, if the user selects Majors the short video plays (see Figure 6.). The program then prompts the user to the Major Menu (see Figure 7.). This is where the user interacts with the subjects and data. For each major the user can read the course descriptions, details about the degree, and a course outline.

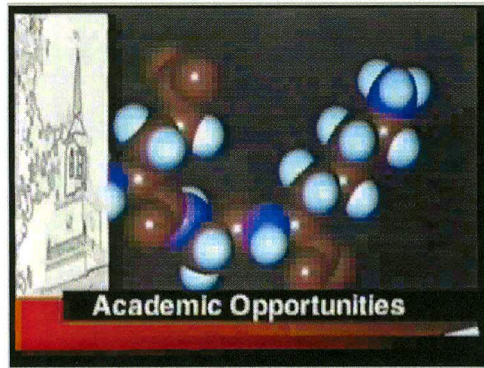


Figure 6. Majors Video Clip

A screenshot of the University of Cincinnati College of Applied Science website. The header includes the university name and logo. Below the header are navigation buttons for Admission, Majors, Faculty, Campus, and Tech Expo. The "Majors" button is selected. On the left, a list of majors is shown, with "Architectural Eng Tech" highlighted in red. On the right, the details for the Architectural Eng Tech major are displayed, including the degree type (Bachelor or Associate Degree), course description, and a "Next >" link.

UNIVERSITY OF CINCINNATI
COLLEGE OF APPLIED SCIENCE

ADMISSION MAJORS FACULTY CAMPUS TECH EXPO

- Architectural Eng Tech
- Chemical Technology
- Civil & Construction Eng T
- Computer Eng Tech
- Computer Science Tech
- Electrical Eng Tech
- Fire & Safety Eng Tech
- Fire Science Tech
- Information Eng Tech
- Non-Degree Programs
- Manufacturing Eng Tech
- Mechanical Eng Tech

Bachelor or Associate Degree
(Day and Evening)

Course Description

The objective of the architectural curriculum is to prepare well grounded technical people for architectural engineering design office, construction companies, and related employment.

After successfully completing 2-1/2 years with emphasis on basic technical skills, students receive an Associate Degree of Applied Science and may work as architectural technicians in drafting, surveying, building inspection, and estimating. Most students go on to

[Next >](#)

Figure 7. Majors Menu

When the Faculty Menu is selected it will play the Faculty Video (see Figure 8.) and then it will go to the Faculty Menu (see Figure 9.). The Faculty Menu shows all the departments and professors. It gives the status of professors, and the degrees received.

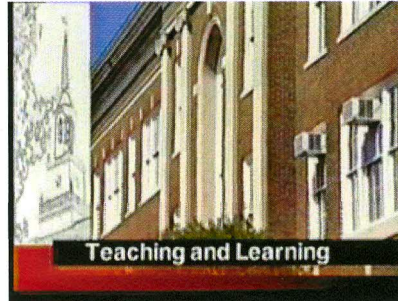


Figure 8. Faculty Video Clip

A screenshot of the University of Cincinnati College of Applied Science Faculty Menu. The header features the university logo and name. Below the header are navigation buttons for Admission, Majors, Faculty, Campus, and Tech Expo. The Faculty menu is active, displaying a list of departments on the left and a list of administrative and departmental officers on the right. A "Next >" link is visible at the bottom right of the content area. At the bottom of the page are help and close buttons.

Figure 9. Faculty Menu

When the Campus button is selected, a campus video clip shows the user what the University of Cincinnati campus looks like. It describes some of the buildings designed by famous architects (see Figure 10.).

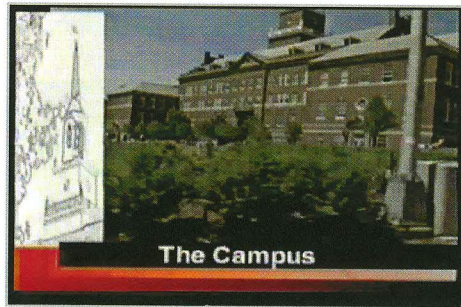


Figure 10. Campus Video Clip

In the Campus Menu, the user can read about the history of OCAS, its organizations, the shuttle bus, and parking (see Figure 11.). The user can see the OCAS campus, classrooms, library, and laboratories.

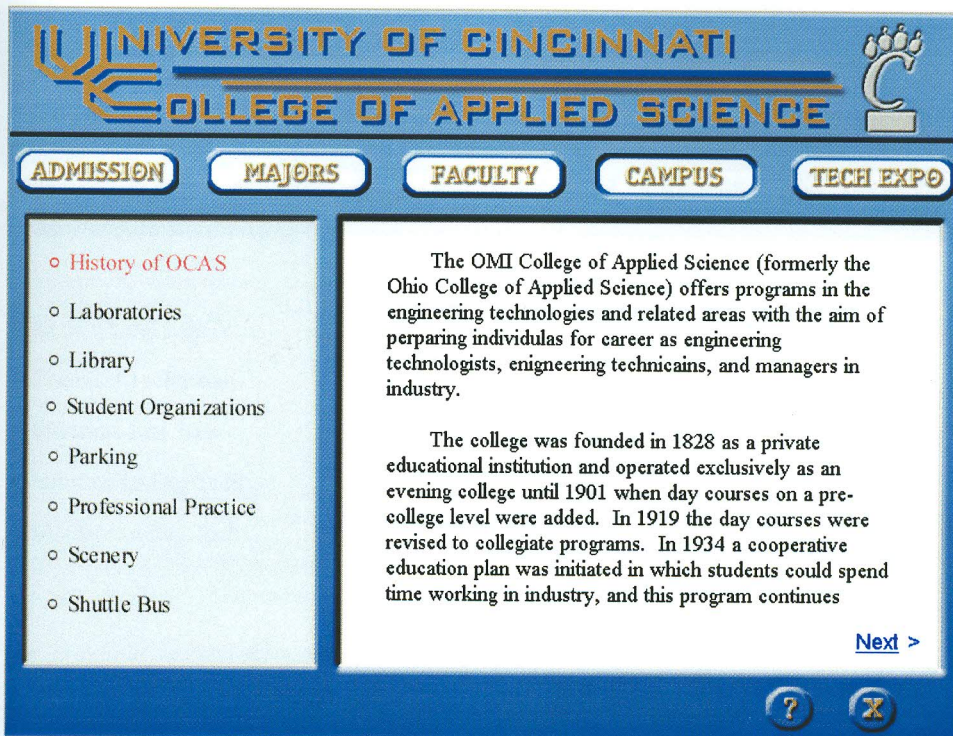


Figure 11. Campus Menu

When the user selects Tech Expo, it plays a short video clip about the latest technologies available at the University of Cincinnati (see Figure 12.). When the video is done it goes to the Tech Expo Menu (see Figure 13.). It gives the name of the senior, and a brief description of their project.

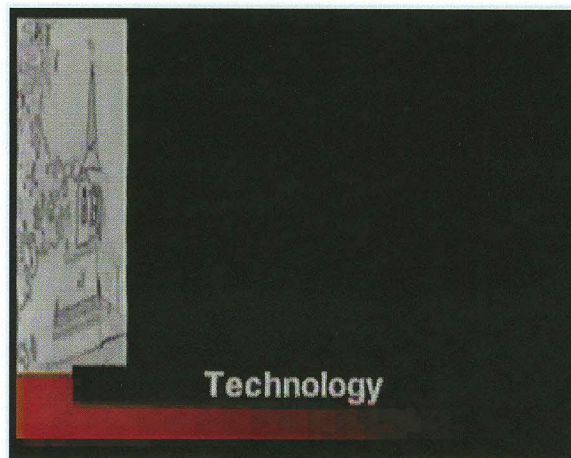


Figure 12. Technology Video Clip

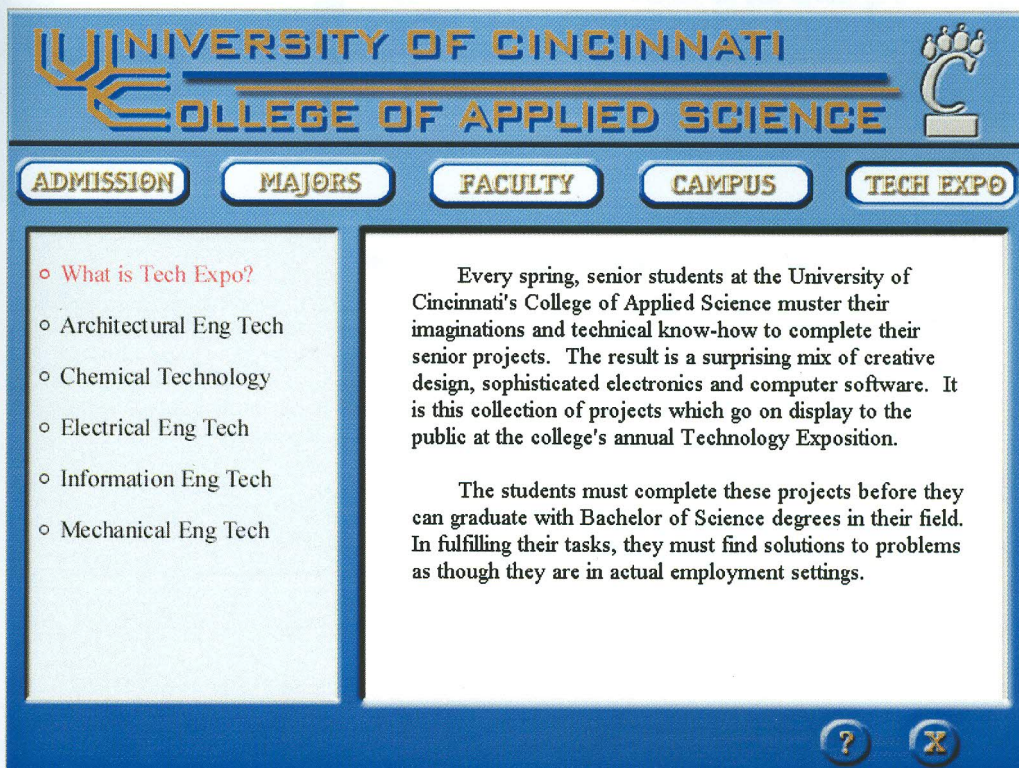


Figure 13. Tech Expo Menu

If any user does not know how to navigate through the information he/she can select the Help Menu, which is indicated by a question mark (see Figure 14.). The Help Menu gives instructions on how to navigate through the menus, how to navigate through each subject, and how to follow the information that is given.

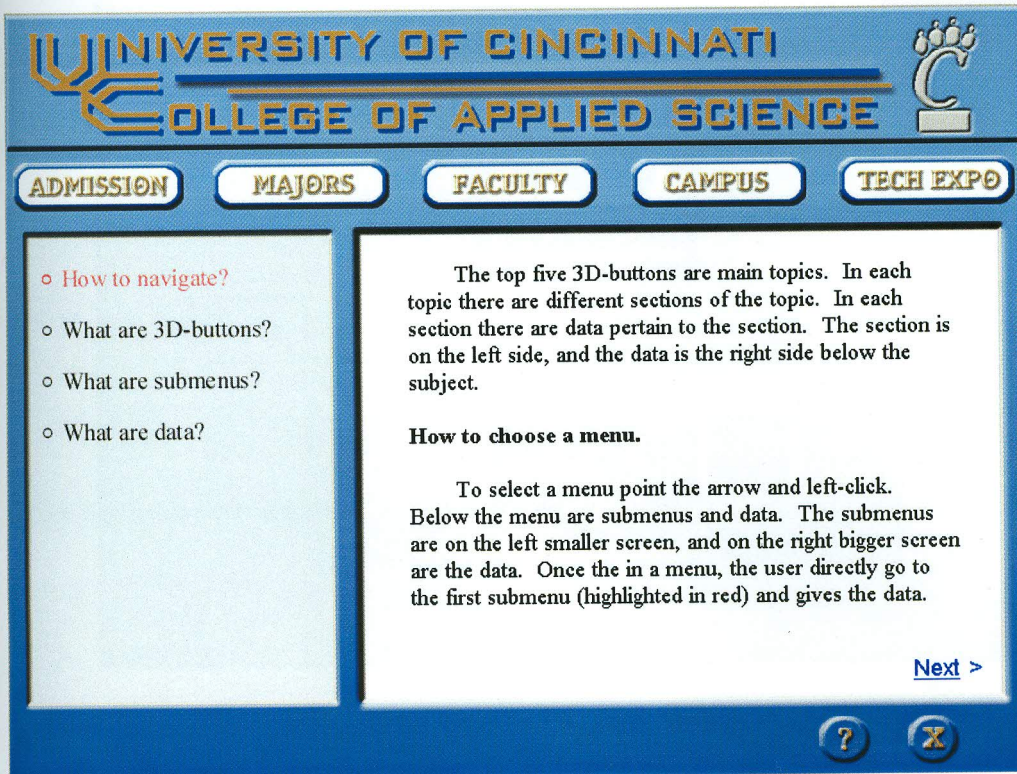


Figure 14. Help Menu

To end the program, the user can select the Exit button, which is indicated by the letter X. Before the program ends there is a final video clip that wraps up the interactive CD-ROM. It shows the copyright and author.

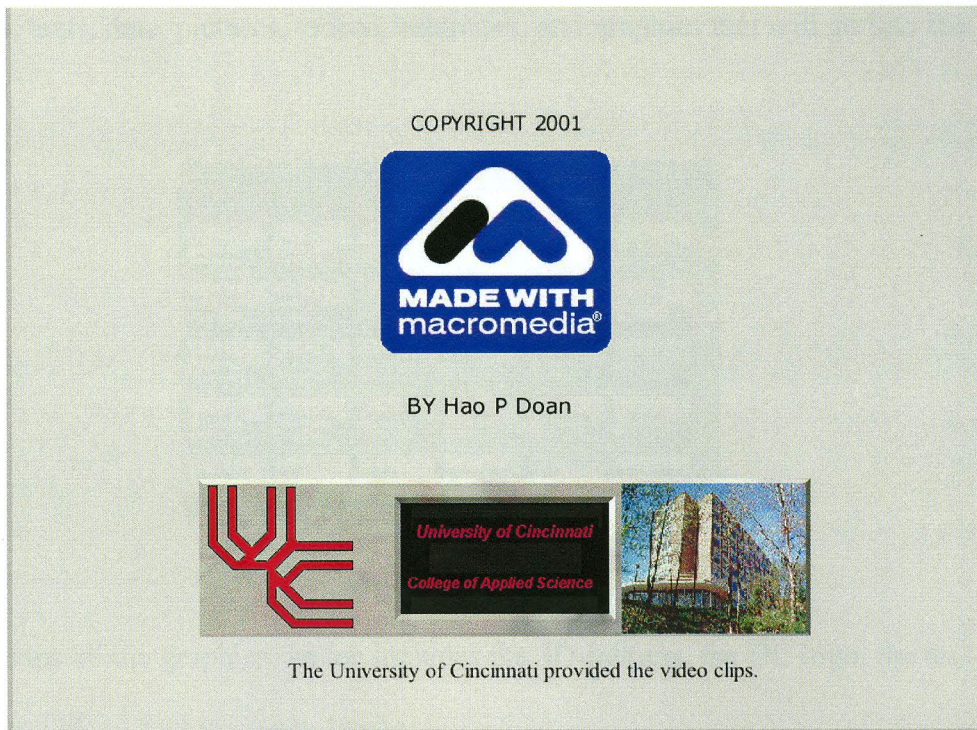


Figure 15. End Menu

6.2 Director 7

In Director 7 the project is created in four parts. The first part is called the Cast.

The Cast holds all the graphics, all the information, and all the codes. The Cast contains any objects, texts, data, pictures, videos, behaviors, and graphics that will go into the project.

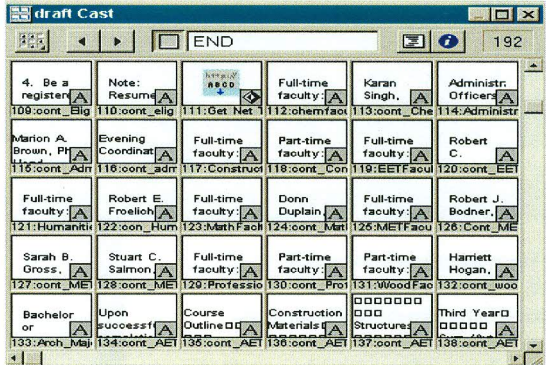


Figure 16. Cast

It also contains all the graphics, which includes the 3D-buttons, the UC logo, the text for each subject, videos, and the menu layout.

The second part is the Score (see Figure 17.). The Score holds cast members so that it plays in sequence according to the frame. A Cast member can be put into one frame or many frames in the score (see Figure 17.). The score can have behaviors or codes. To run the program each frame is run, starting from frame one to the last frame.

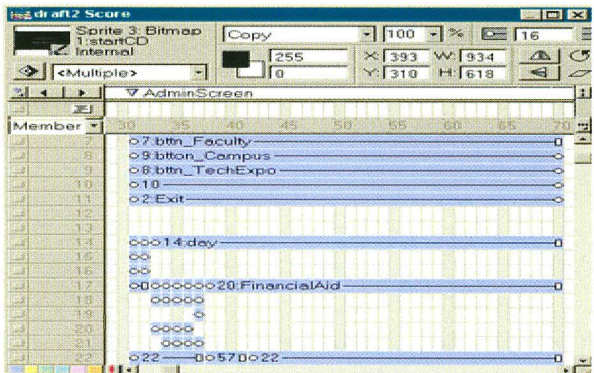


Figure 17. Score

The third part is the Stage (see Figure 18.). The Stage is where Cast members are displayed. The Stage represents the look of the project. It shows all the graphics, texts, pictures, video, and data that are in the Score. The Stage lets the creator design and place the text, graphics, data, pictures, and videos where he/she wants them.

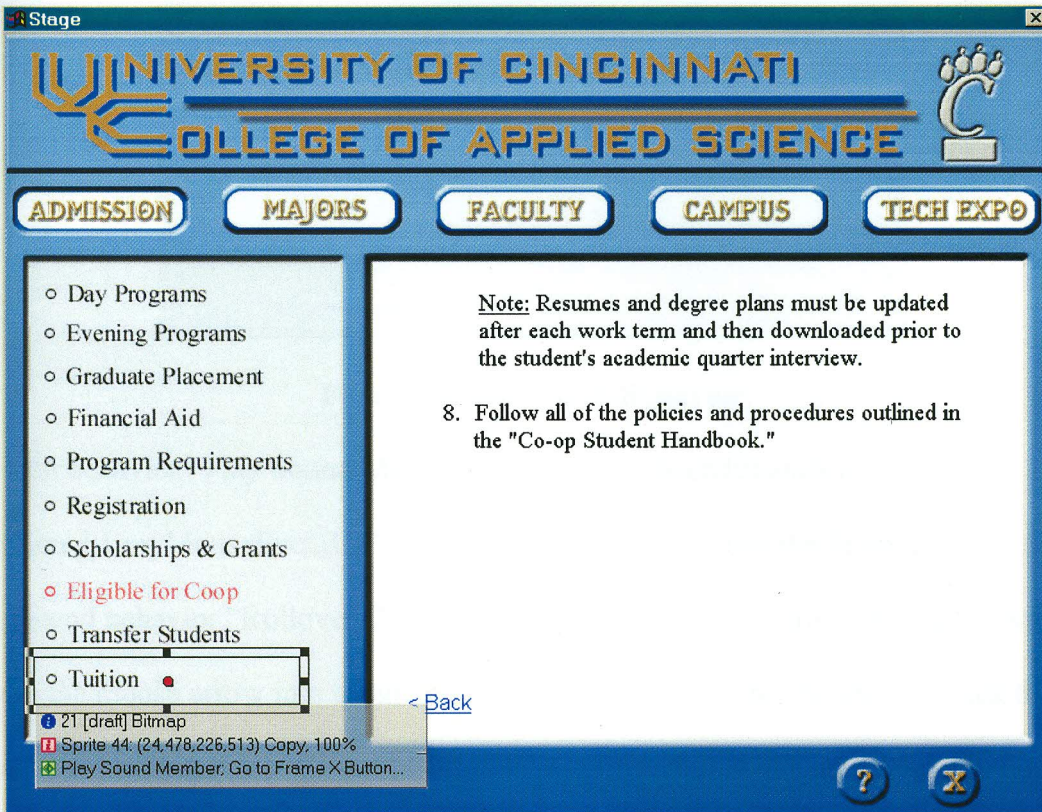


Figure 18. Stage

A behavior is a collection of codes that are needed for text or a graphic to make it functional. A Frame or a Cast member must have some sort of behavior to make it functional. For example, all the 3D-buttons must have these behaviors in order it to work (see Figure 19.).

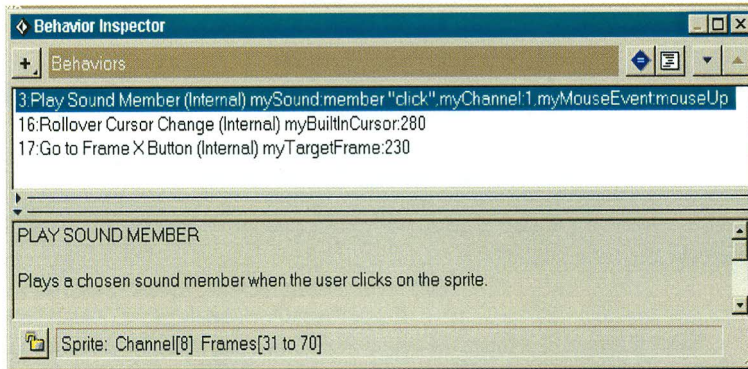


Figure 19. 3D-button Behavior

The first behavior “Play Sound Member (Internal) mySound;member “click”, mychannel;1,myMouseEventUP” is to play a click sound when the 3D-button is selected. The second behavior “Rollover Cursor Change (Internal) myBuiltInCursor:280” will change the mouse arrow into a hand allowing the user to see that he/she can click the item. The third behavior “Go to X Button Frame (Internal) myTargetFrame:230” once this is clicked it will take the user to frame 230. The frame 230 is assigned by the creator. These behaviors are in all the 3D-buttons, but the only difference is the last command code where “Go to X button (internal) myTargetFrame” is unique.

The subject's behaviors are similar to one another. As you can see in **Figure 20**.

Subject Behavior, the first-three behaviors are the same as the 3D-buttons, but the Go to Frame X Button is different. The last behavior is a Rollover Member Change, which will change the color of the subject to red. Once the subject is selected it turns red to indicate that the user is on that subject. All the subjects have similar behaviors except each subject is linked to a different frame, and different Roll Member Change.

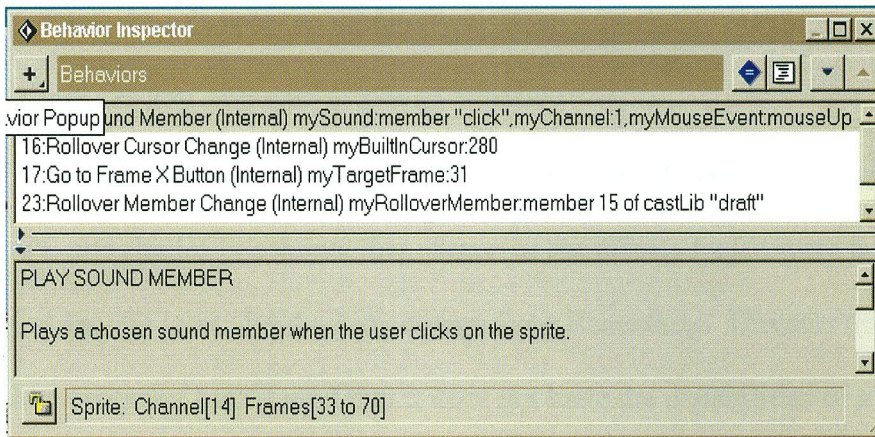


Figure 20. Subject Behavior

7. Conclusion and Recommendations

I learned a lot from this project. I started not knowing how to use Director 7; now that I am finished I feel like I have a great knowledge of Director 7. I chose Director 7 because I had heard that it is one the best software programs to use to make an interactive program. It did not take me long to discover how to use the software.

Another great software that I learned was Photoshop 5. All the text and graphics were design in Photoshop 5. I was familiar with Photoshop but I was not nearly as knowledgeable as I am now. Adobe Premiere 5 was another program I got a chance to use. This program let me edit any digital video.

During my project I had to learn about Director and Photoshop. I had to learn entirely different software, and the codes that go with it. The hardest part was to create the codes. The codes are called “behaviors” in Director, and the form is the Stage in Director. The Score and the Cast were new to me. The way Director functions is that it runs the frame, which is in the Score. The objects, texts, graphics, pictures, and videos need to be in the score in order to be seen it on the Stage. The behavior can be in a Frame or in a Cast. The Cast holds all the texts, objects, pictures, graphics, videos, and behaviors. These are key elements in using Director.

In Photoshop I learned how make a 3D-buttons, and 3D-layouts. I learned to make shadows, and shades to achieve this. Some of the effects I used were bevel and emboss to give the 3D look. I did all my design from Photoshop. Director does have its own paint shop program, but I found that it does not have the capabilities of a program like Photoshop. Another advantage is that Photoshop has a lot more features and flexibility than Director’s paint program.

My goal was to inform prospective students about OCAS and make it fun for the user to learn. To make it fun I added many short video clips and many campus pictures. This gives the students the atmosphere of OCAS. It is simple to use, and the materials are easy to learn. All the users have to do is point and click. The user can learn about OCAS in an hour.

My recommendations are to add more video clips, possibly a student interview and a professor interview of how he/she feels about OCAS. I might add some video clips that allow the user to see 360 degrees of the campus, library, classroom, and laboratories. Another recommendation is expand on the Faculty Menu. I would add more information

on faculty and maybe have a picture of each professor. For Tech Expo, I would add pictures of their projects, and a video of their presentations.

	June	July	August	September	October	November	December	January	February	March
Part 1 Gather information										
Learn director 7										
Admission										
Majors										
Faculties										
Campus										
Tech Expo										
Part 2 Design Layout										
Choose a design layout										
Pick command buttons										
Pick navigation buttons										
Enter the subjects										
Part 3 Enter the codes										
Codes for admission										
Codes for majors										
Codes for faculties										
Codes for campus										
Codes for tech expo										
Codes for help										
Prototype										
Senior Design III										
Background										
Color scheme										
New layout										
Fix errors										
Refine the command buttons										
Final product										
Presentations & Reports										

Notes

1. **Menus** are the 3D-buttons
2. **Subjects** are the topics under each menu.
3. **Data** are the information that belong to the subjects.
4. **OCAS** is short for “College of Applied Science.”
5. **CD-ROM** is a compact disk read only memory.
6. **Cast Member** is a Director 7 feature that holds the objects, behaviors, text, graphics, pictures, and video.
7. **Score** is a Director 7 feature that holds Cast.
8. **Stage** is a Director 7 feature that display the objects, behaviors, text, graphics, pictures, and video.
9. **Behavior** is the codes for Director 7.
10. **Technology Exposition (Tech Expo)** shows senior students’ projects that they must create before they can graduate with the Bachelor of Science degree.

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