

# **CAD Learning Web site**

By

Barbara Scales

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

May 2002

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Barbara Scales

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Date

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Russ McMahon, Faculty Project Advisor

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Date

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Lawrence G. Gilligan, Department Head

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Date

## **Acknowledgements**

The Department of Computer Aided Drafting and Design (CDD) deserves special recognition for its continued support to make this project possible. Thanks to my supervisor and friend, Kevin Cook for his guidance and support. A special thanks to Russ McMahon and Sam Geonetta for their guidance and advice. This project has evolved into a professional product due to their leadership and direction.

## **Dedication**

This project is dedicated to my husband, Jeffrey Scales. Jeff has played a major role in my life since the day we first met. He encouraged me to continue my education and stood beside me every step of the way. He believed in me even when I didn't believe in myself. Also, I would like to dedicate this project to my parents. They have supported me in whatever endeavors I have taken on. They show their love and dedication every day.

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## **Abstract**

The CAD Learning Web site was developed to meet the needs of students and faculty in the CDD department at ITT Technical Institute, Norwood, Oh. The campus needed a Web site designed specifically for the CDD curriculum. Since there are only two hours of lab time, once a week, there is very little time for students to become proficient in their CAD skills. It is difficult for teachers to find a method of teaching that provides their student's these skills. The purpose of the CAD Learning Web site is to help students outside of the classroom and help the faculty meet the student's needs. Students will have access to CAD commands, faculty presentations and lecture notes, assignments for theory and lab, external links for research, VBA commands, and helpful information in the CDD department. With the use of the CAD learning Web site students learning will be made easier.

# **CAD Learning Web site**

## **1. Statement of Problem**

Currently the Norwood location of ITT Technical Institute has a Computer Aided Drafting and Design (CDD) curriculum. The CDD curriculum has 8 quarters. The 8 quarters have courses ranging from Computers in Technology, Basic Drafting, Architectural Drafting, Advanced Drafting, Architectural Desktop, Mechanical Desktop, 3D Studio Vis, and Land Development. Currently there are no Web sites available for the students in the CDD program at the Norwood campus.

The CAD Learning Web site allows students more hands-on time in the classroom. It gives students an easy way to access their assignments, lecture notes, and additional resources.(2) Students can use it as a research tool for projects. Students will be able to use the Internet for reinforcement of concepts already learned in the classroom. It will give instructors an opportunity to help the students in ways that were not previously available. Instructors will be able to communicate with their students better outside of the classroom. Instructors can use this Web site for reinforcement of materials already covered in class and as a supplement to their curriculum.

The CAD Learning Web site consists of eight major categories that will help students and instructors. These categories include: CAD Commands, Presentations, Assignments, Links, What's New, VBA, Help and a Table of Contents. The Web site will be used as an educational tool by the CDD department.

This Web site has three areas of emphasis: Programming, Multimedia, and a Database. The programming section involves VBA for AutoCAD. This area includes many areas of VBA programming, such as, how to start VBA in AutoCAD, VBA Fundamentals,

and example VBA code to be used in AutoCAD. The multimedia portion includes Dreamweaver, Flash, Adobe Acrobat, Camtasia and Jasc Paint Shop Pro 7. Dreamweaver was used to create the main portion of the Web site. Flash was used to create the main introduction. Adobe Acrobat was used to create downloadable documents. Paint Shop Pro was used to create and update pictures that have been placed throughout the Web site. The database portion of the Web site incorporates two databases. The first database is a database of questions that will be used for a test at the end of each CAD commands section. This makes the Web site more dynamic and versatile. The second database will be used for users to login into the Web site. This will make the Web site more secure and help me to track the people who use this Web site.

## **2. Description of the Solution**

### **2.1 User Profiles**

The users of this Web site fall into two categories: the students who will be using this Web site for educational purposes, and the instructors who will use the Web site to keep the information up to date.

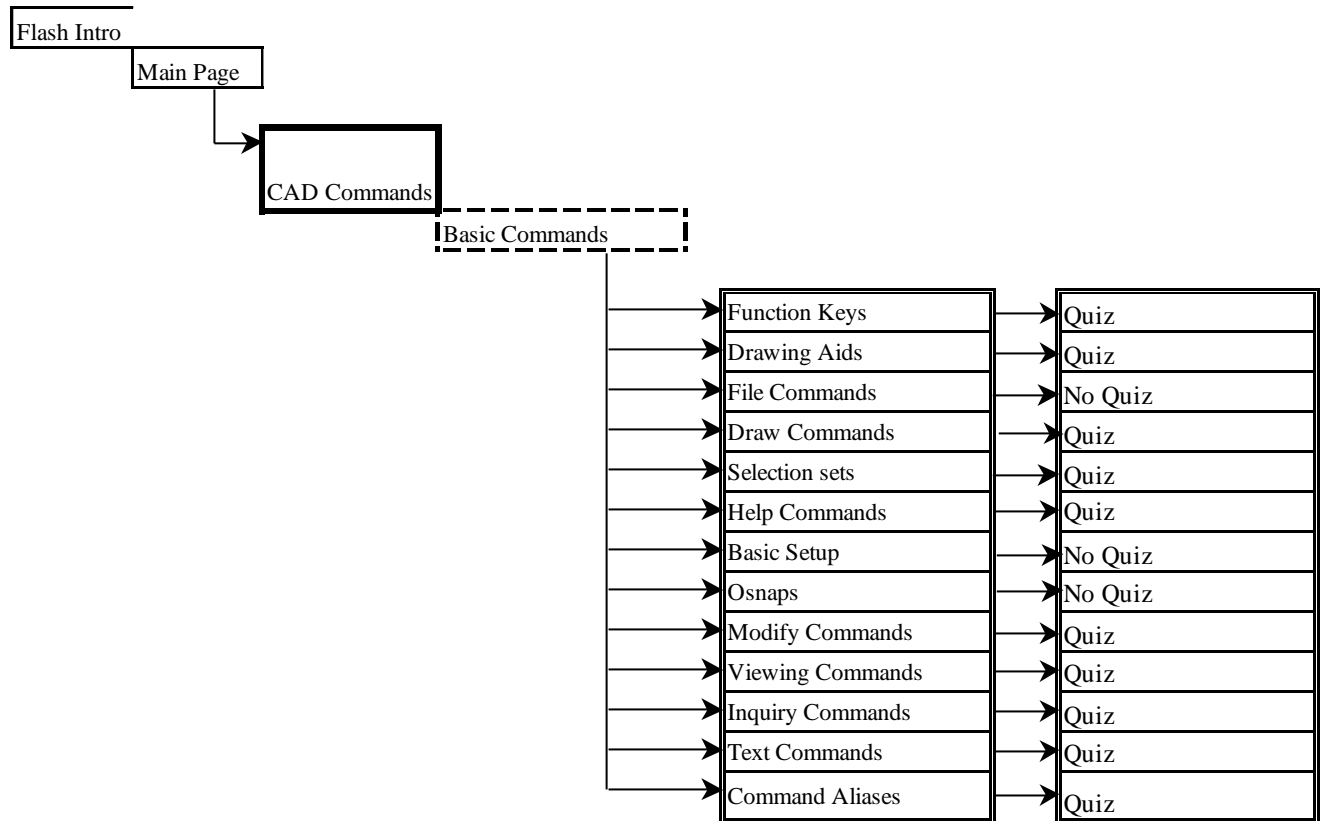
The students will have basic computer knowledge that they will have obtained prior to taking this course. They will have completed a Computers in Technology class that will allow them this basic knowledge. This class will have prepared the students enough to be able to use the Internet to locate this Web site through a Web browser. The students will have enough knowledge to navigate through this Web site with minimal guidance.

The instructors will have more experience using the Internet and its applications. They will be able to update and maintain the Web site. Some instructors may need guidance in this area. All information to be added to this Web site will go through a central source

before it is placed on the Web site. I will be responsible for updating, maintaining and upgrading the Web site.

### 3. Design Protocols

#### 3.1 Organizational Scheme



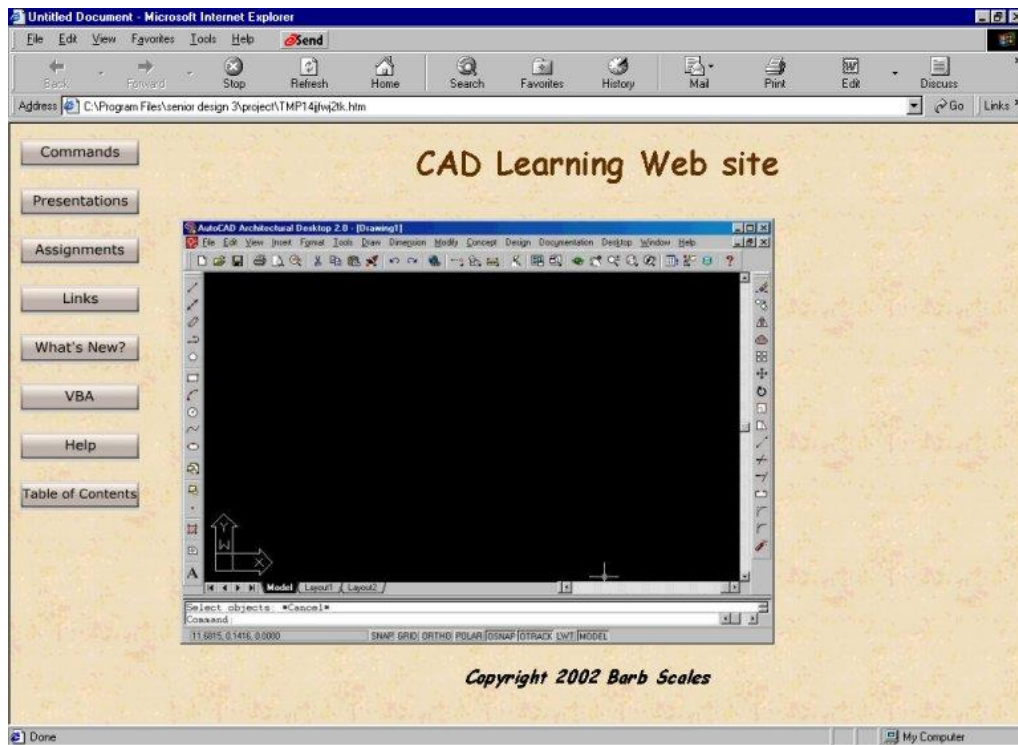
**Figure 1. Partial Organizational Scheme**

See Appendix B for complete organizational scheme.

#### 3.2 Interface design/navigation

I designed the layout and the color scheme; they were reviewed by Kevin Cook, Program Chair of the CDD program. The colors are something that would be pleasing to the eye and have good contrast. (3) Once the colors were chosen, a simple button navigation scheme was selected so that it would not be too difficult to navigate throughout the Web site

(See Figure 10). After the color scheme and navigation scheme was selected, the “main.css” stylesheet was created. This will allow for any changes within the Web site to be made quickly and easily. The Web pages were then created based on the following layouts. Users will be able to navigate through the Web site using the navigation buttons on the left of the page. These will be consistent throughout the Web site (See Figure 2 through Figure 6).



**Figure 2. The Home Page**



Figure 3. A Sample Links Page

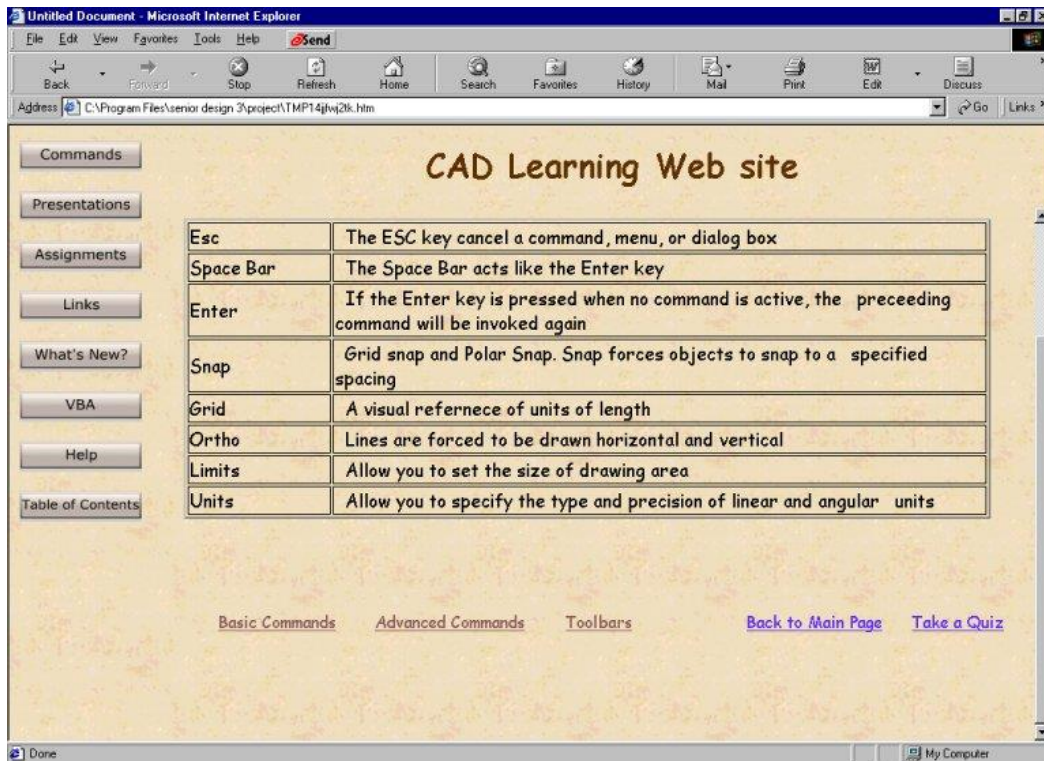


Figure 4. A Sample Commands Page



Figure 5. A Sample Toolbars Page

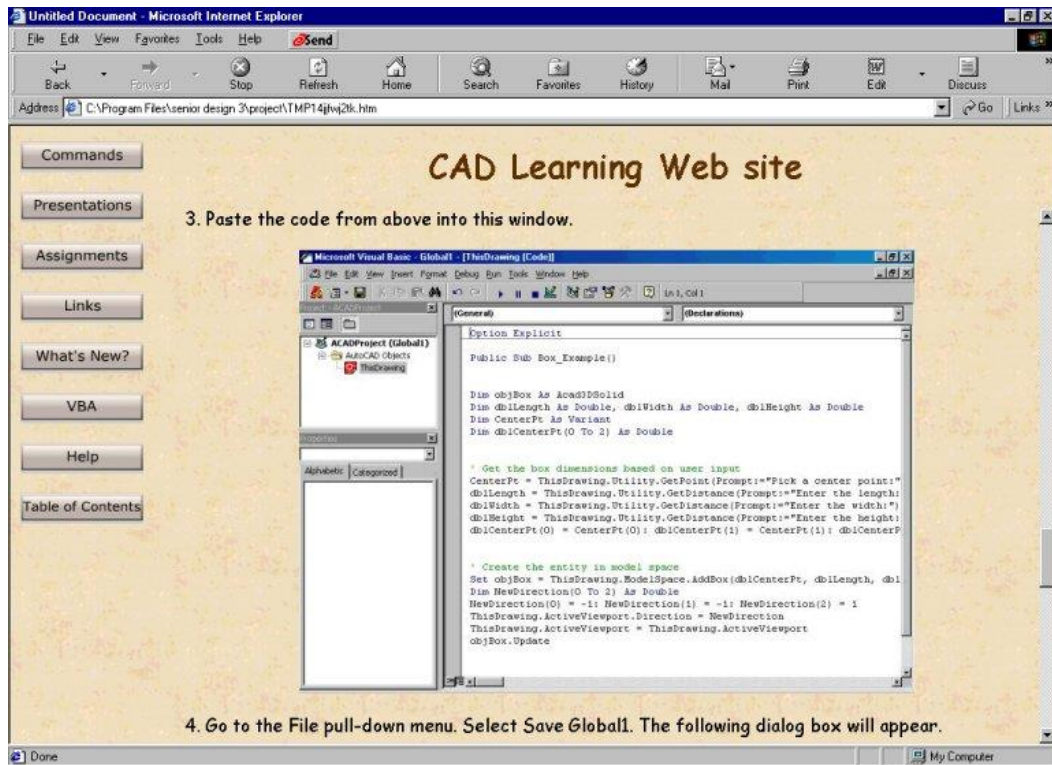
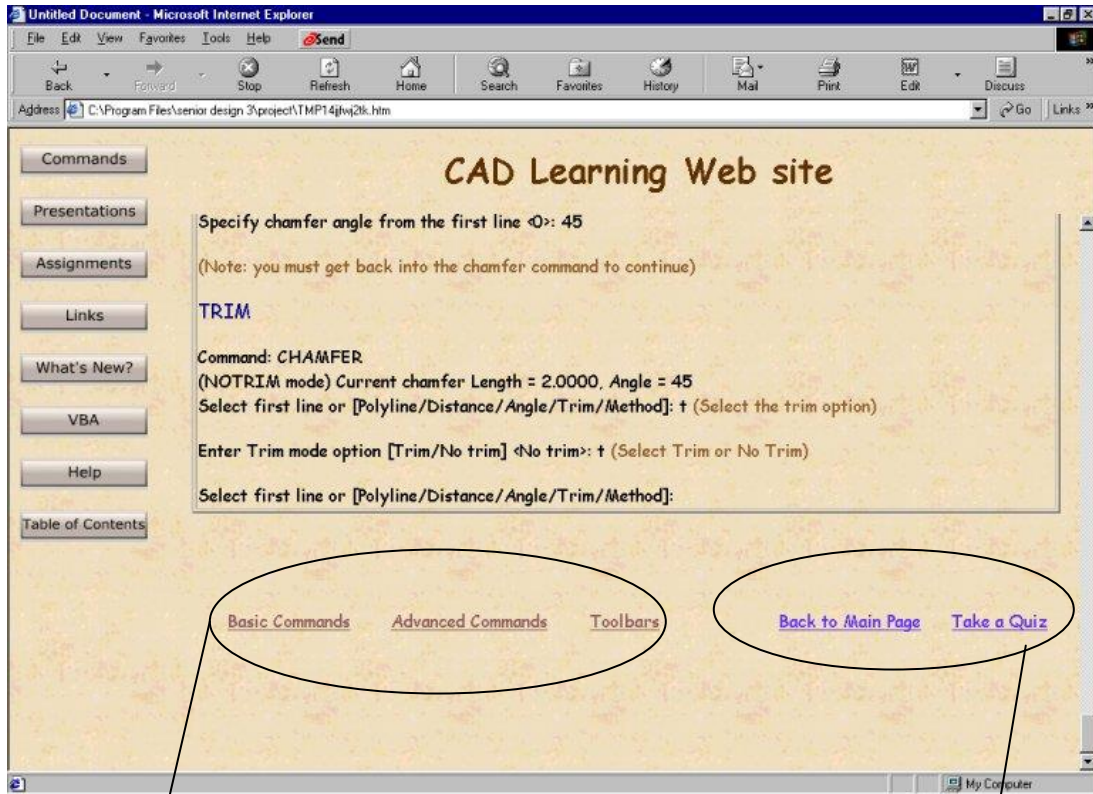


Figure 6. A Sample of Student Interface Using VBA

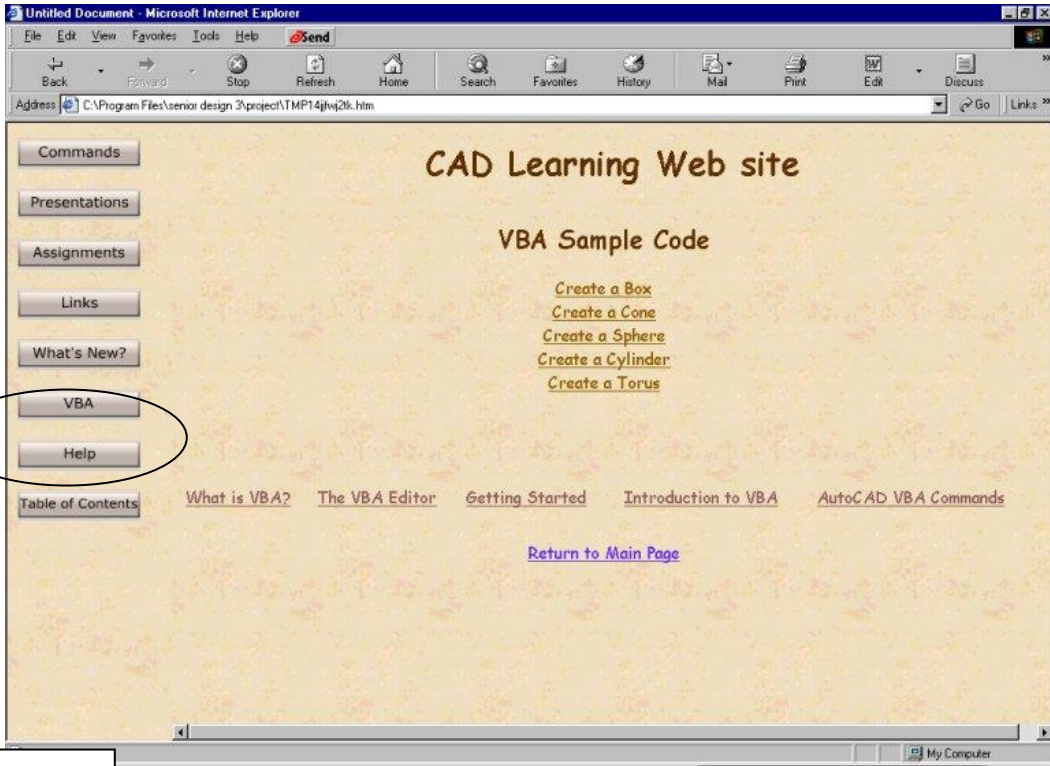
At the end of each section, additional links will be available for the user to navigate easier (See Figure 7 and Figure 8). These links will be based on the following color scheme (See Figure 7, Figure 8, and Figure 9).



**Figure 7. A Sample of Navigation Links**

Color: #996666  
Links within Main Topic

Color: #6633FF  
Links to Quizzes or Main Page



Typical Navigation Buttons

Figure 8. A Sample of Navigation Links Under VBA

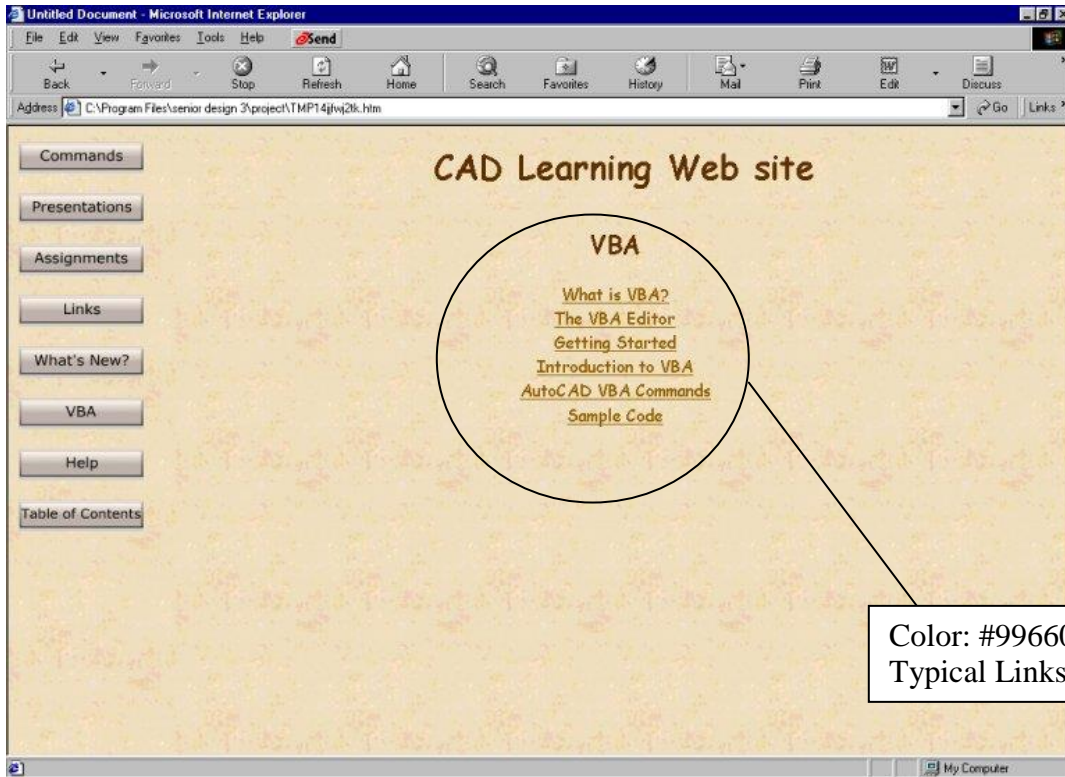
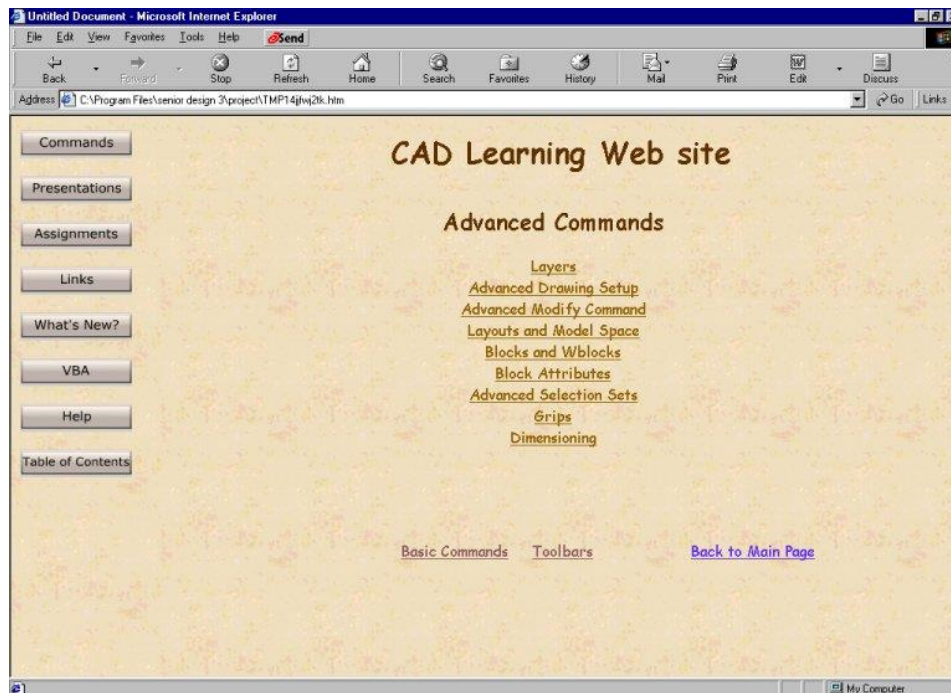


Figure 9. A Sample of Typical Links

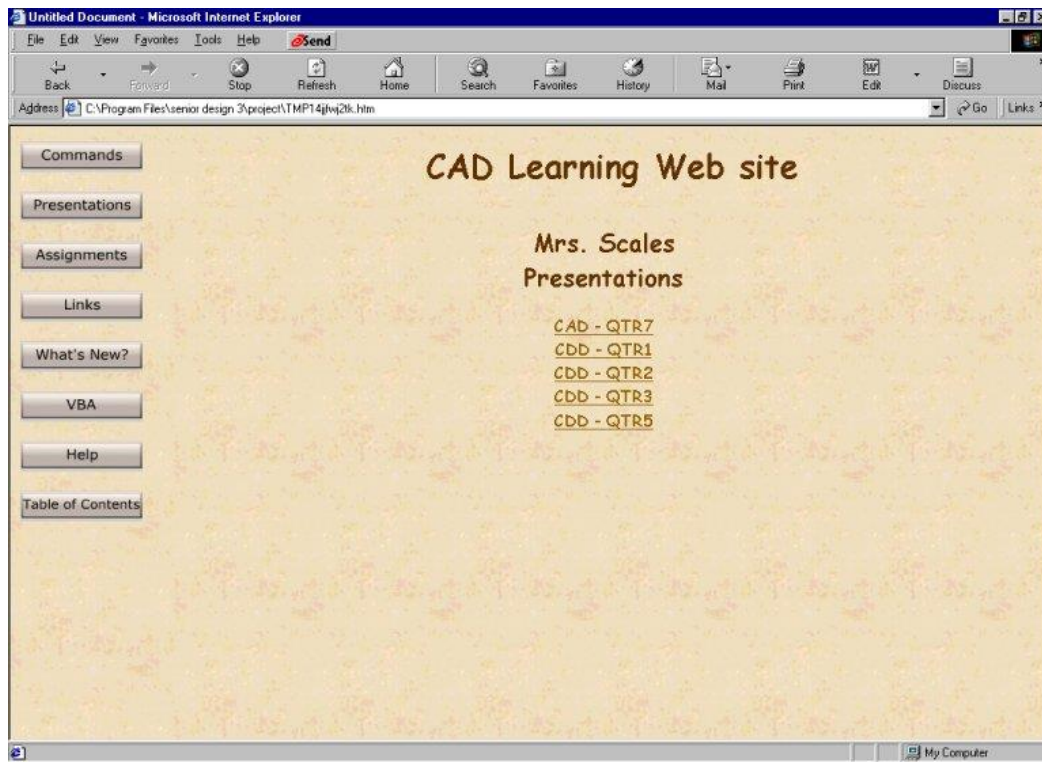
Eight categories will be available for users to navigate through. These include: Commands, Presentations, Assignments, Links, What's New, VBA, Help and Table of Contents.

The first category will be the most important for students needing help with specific commands. The Commands button will take the user to a screen that will give them three choices: Basic Commands, Advanced Commands, and Toolbars. If the user selects Basic Commands, they will have 13 additional topics to select from. These topics will give the student detailed information about the topic they have selected. If they select the Advanced Commands, they will have 15 additional topics to select from (See Figure 10). These topics will also give students detailed information. If they choose Toolbars, they will be taken to a page that will allow them to select 16 different toolbars. These topics will allow students to see the different ways to input a CAD command into AutoCAD.



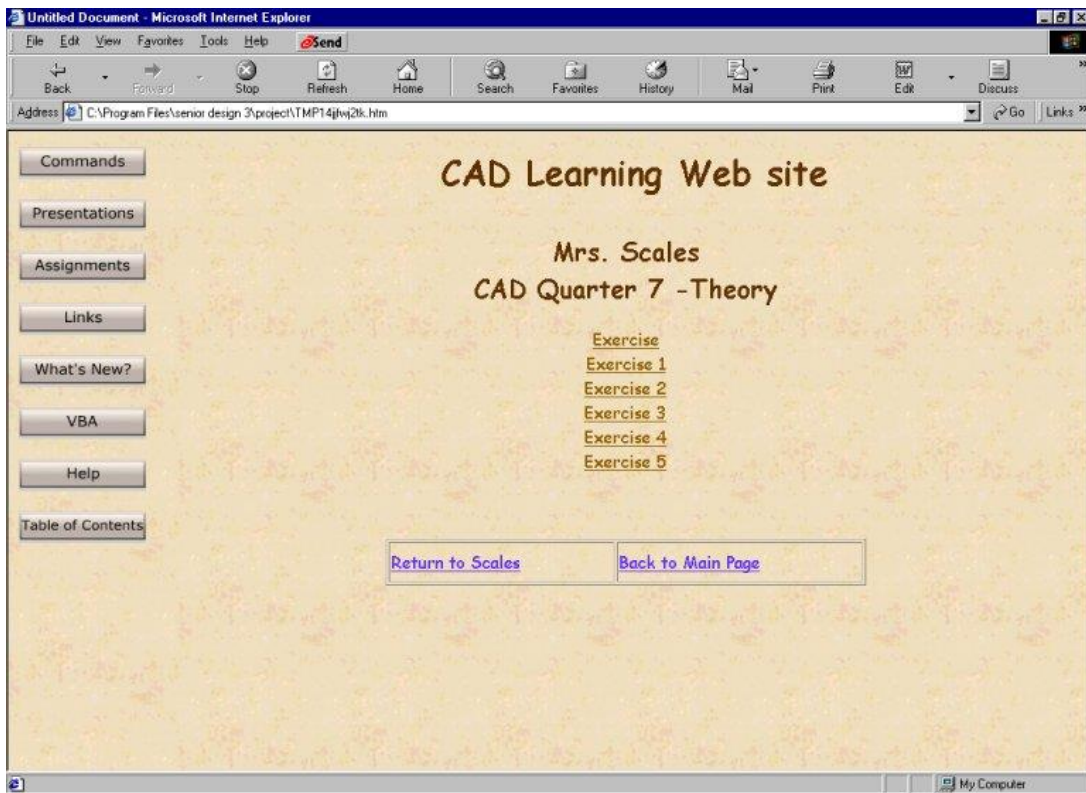
**Figure 10. Advanced Commands Links**

The second category will allow students to access their instructor's lecture notes and presentations. The first page the student will see after selecting this category will be a list of instructor's. After they select their instructor, they will see a page that will break down their instructor's courses and the quarters that instructor may be involved with (See Figure 11). The student should then select the course and quarter they need information about. Within each quarter the student should select the chapter or topic of the presentation they want more information about. The next page that appears will depend on the instructor. Some instructors may have PowerPoint presentations while others may have word documents.



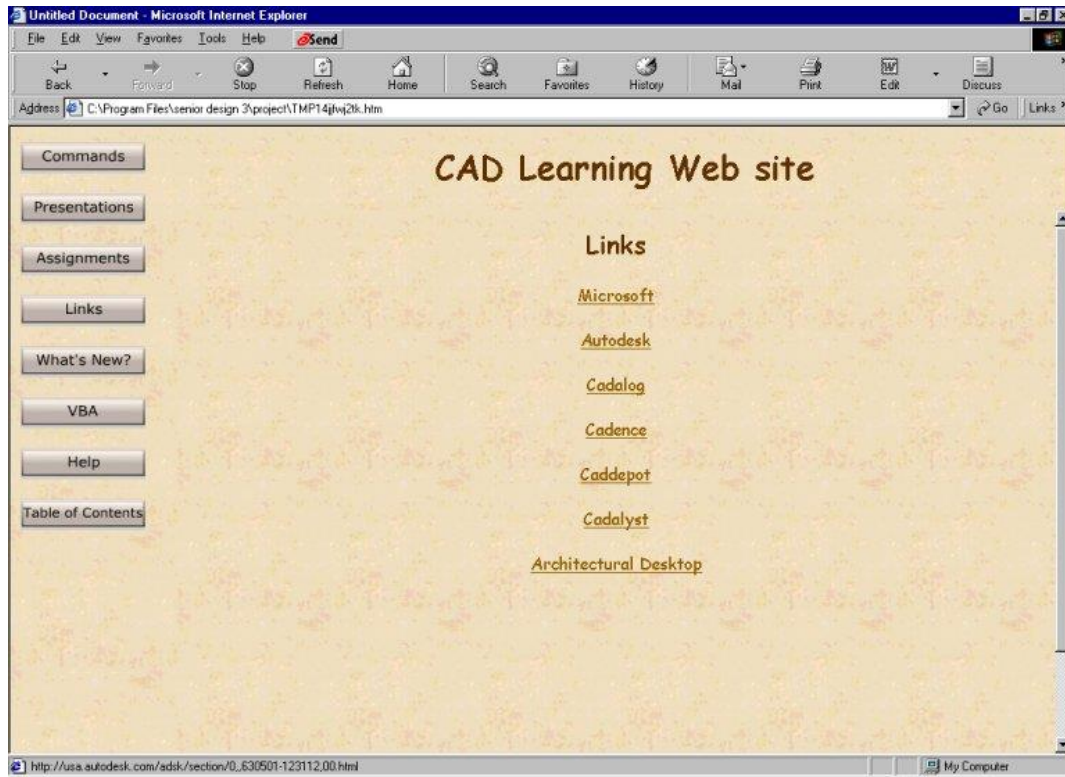
**Figure 11. Typical Presentation Screen**

The third category will allow students to access their class assignments and lab projects. The first page the student will see after selecting this category will be a list of instructor's. After they select their instructor, they will see a page that will allow them to select Lab or Theory (See Figure 12). After they select lab or theory, they will see a screen with their instructor's courses and the quarters that instructor may be involved with. The student should then select the course and quarter they need information about. The next page they see will depend on the instructor.



**Figure 12. A Typical Assignments Screen**

The fourth category will let students look at CAD Links. It will allow the user to access different AutoCAD links (See Figure 13). This will benefit the student's who need to do research on CAD projects or assignments.

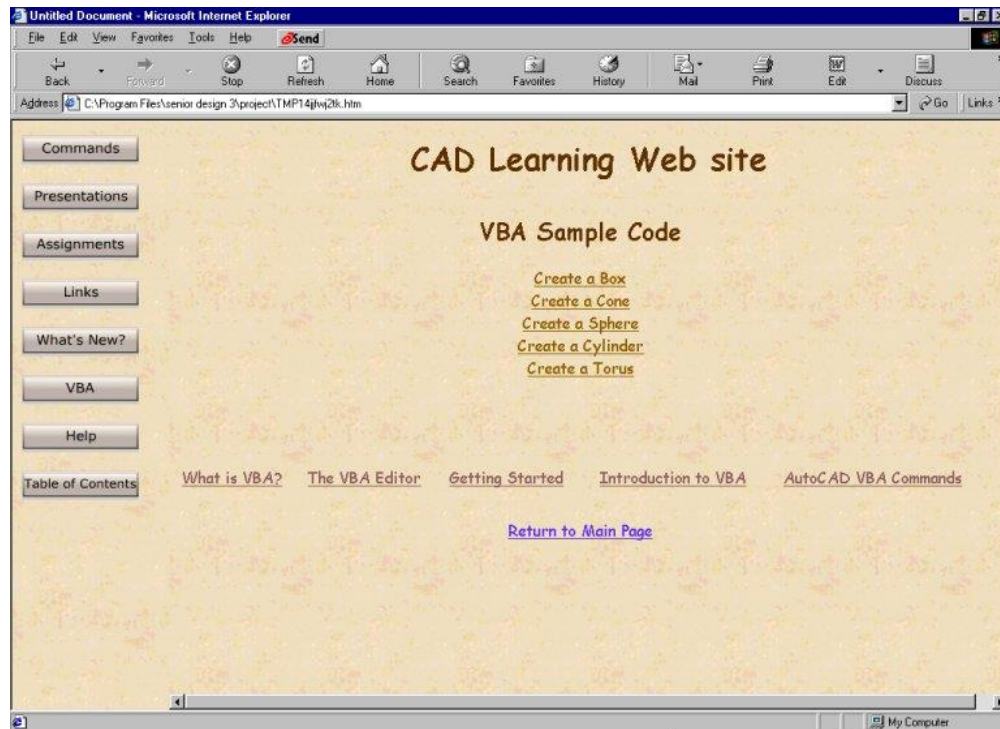


**Figure 13. A Typical Links Screen**

The fifth category will allow users to find out what is new in AutoCAD. When new versions of AutoCAD become available, this is where the students will find information about how the new version differs from the current version. There will also be a link to new information within the CDD department or the Norwood campus.

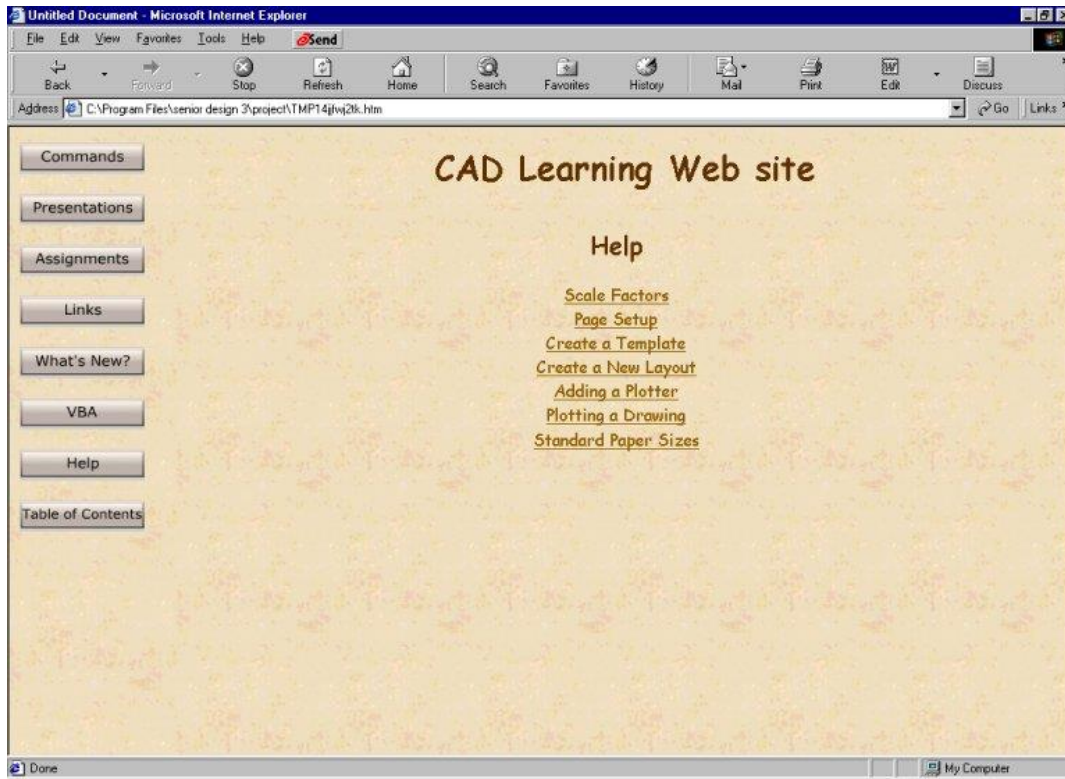
The sixth category will allow students an opportunity to work with VBA. There will be 5 links for users to choose from. These will include What is VBA?, Starting VBA in

AutoCAD, VBA Manager, VBA Fundamentals, and VBA Projects. These topics will allow a novice user the basic to use VBA in AutoCAD. It will also allow the students to use the existing code and use it for their own projects. If a student selects the first category, they will learn what VBA is and why they should use it. If they select the second category, they will learn how to start VBA while using AutoCAD. They will also learn some basic VBA terminology about the IDE screen. If they select the third category, they will learn more information about the VBA Manager. If they select the fourth category, they will learn information about classes, properties, methods, variables, data types, constants, events and procedures. The fifth category will allow users to look at examples of code. They will be able to copy the code and put it into their own projects for use (See Figure 14).



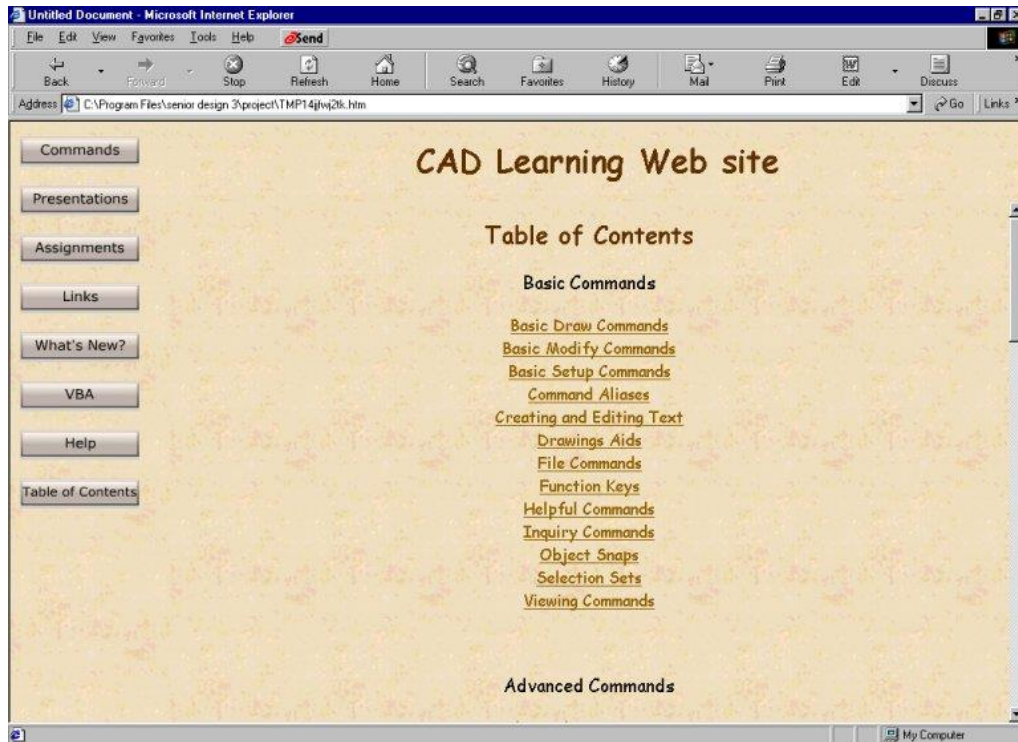
**Figure 14. VBA Sample Code Screen**

The seventh category will allow the user access to helpful information. It will expand on the other categories already covered. It will give students a detailed guide on how to use features commonly used within the CDD department (See Figure 15).



**Figure 15. A Typical Help Screen**

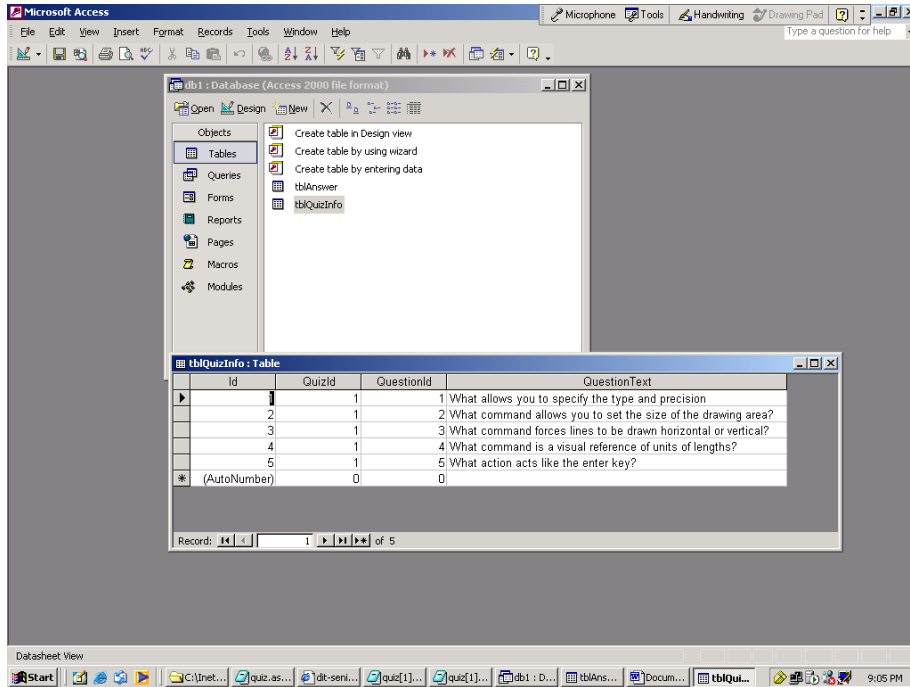
The eighth category will allow users to locate specific commands without going through several links. If they know a specific command, they can go to the Table of Contents and find a link to that command (See Figure 16).



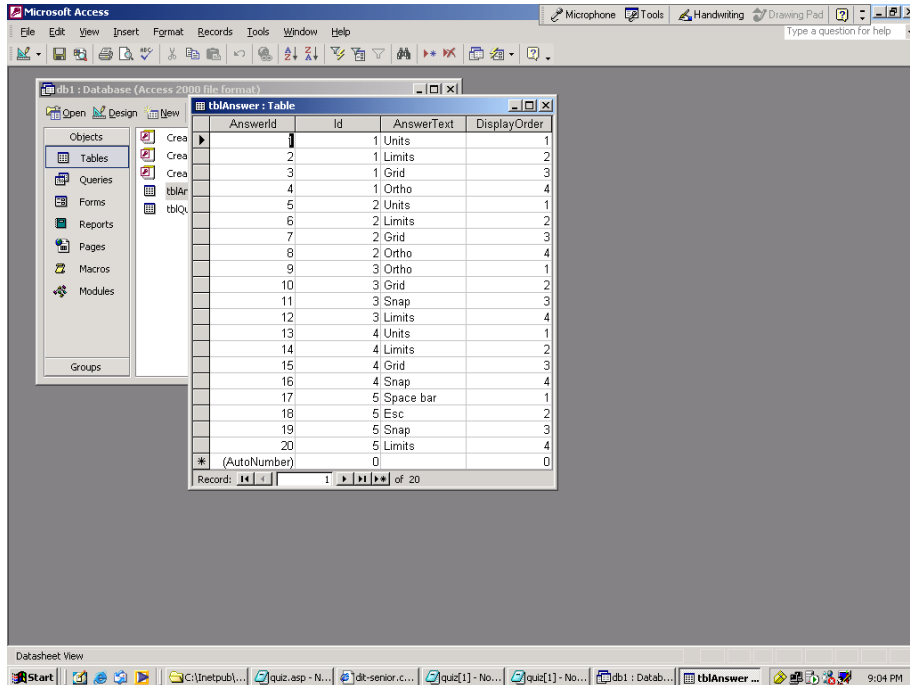
**Figure 16. Table of Contents**

### **3.3 The Quiz Database**

I used Access to create a database for quizzes. Figure 17 shows a sample table of quiz information. Figure 18 shows a sample of the answer for the quiz table. Figure 19 shows the ASP page that was created from the database. See Appendix G for Quiz.asp code. See Appendix H for the code created from the Quiz.asp code.



**Figure 17. A Sample Table of Quiz Information**



**Figure 18. A Sample Table of Answers for Quiz Questions**

### 3.4 The Login Database

I created a login database. This database is designed to keep a log of students who use this Web site. (See figures 19 through 23) The background, color scheme and text scheme are consistent with the rest of the Web site. There is a New Student Information sheet for students that have not logged in before. There is also a login error sheet if a student makes an error logging in.

I will eventually add in a database for instructors. This will be used for instructors to go into a different part of the Web site that will not be accessible to the students. I will configure this part of the Web site so instructors will be able to input and update information for their part of the Web site.

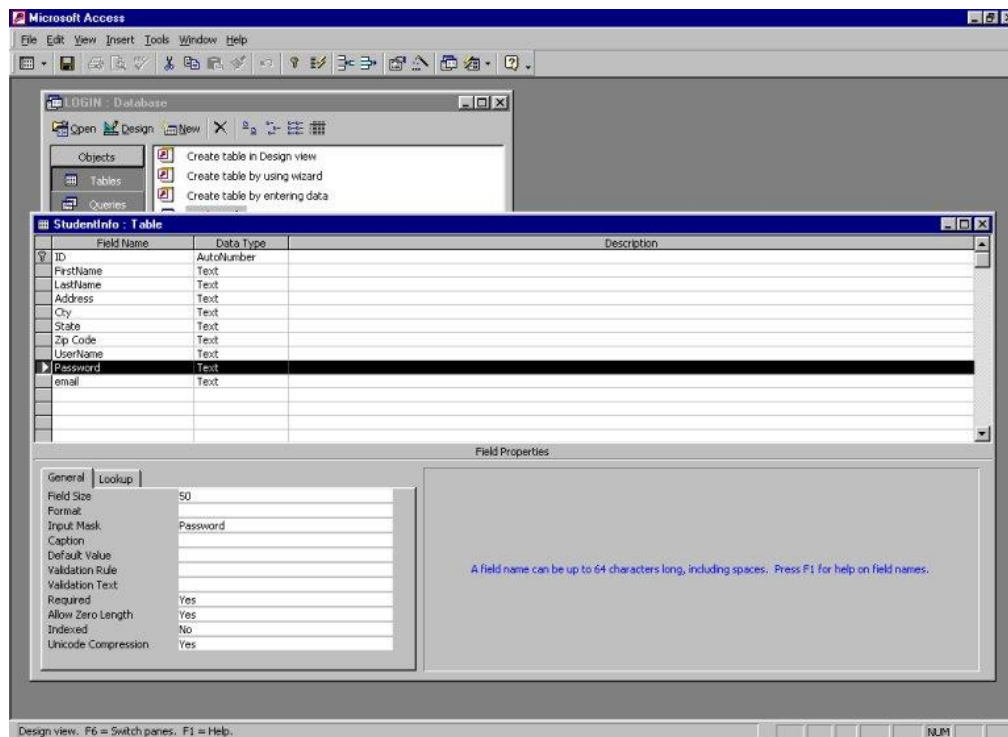
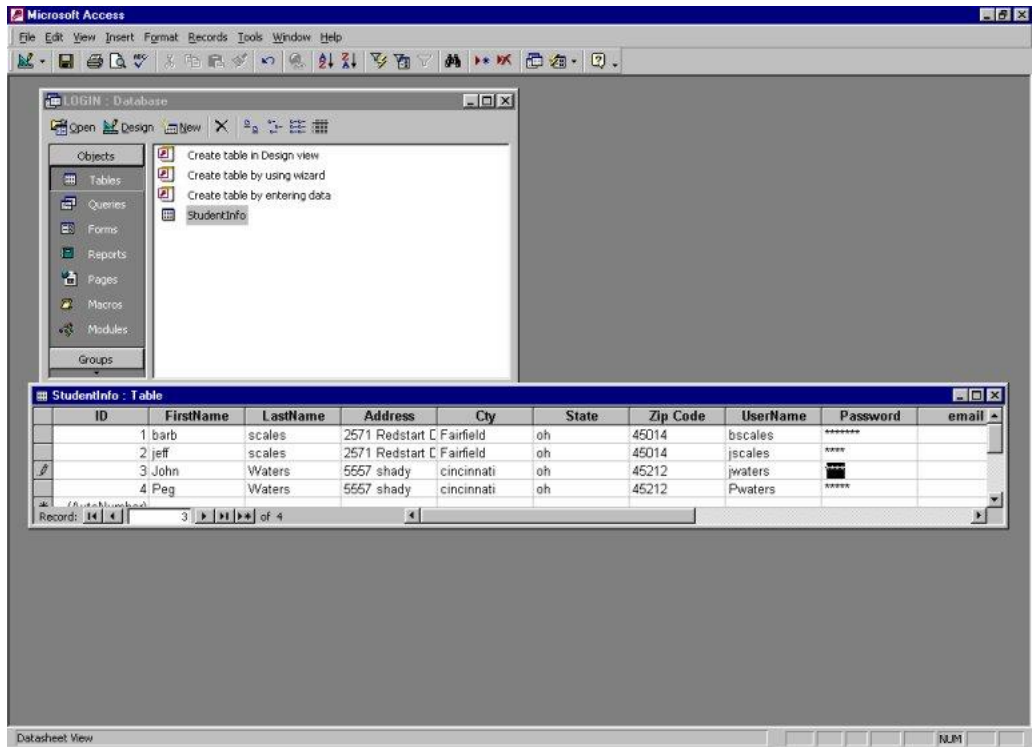
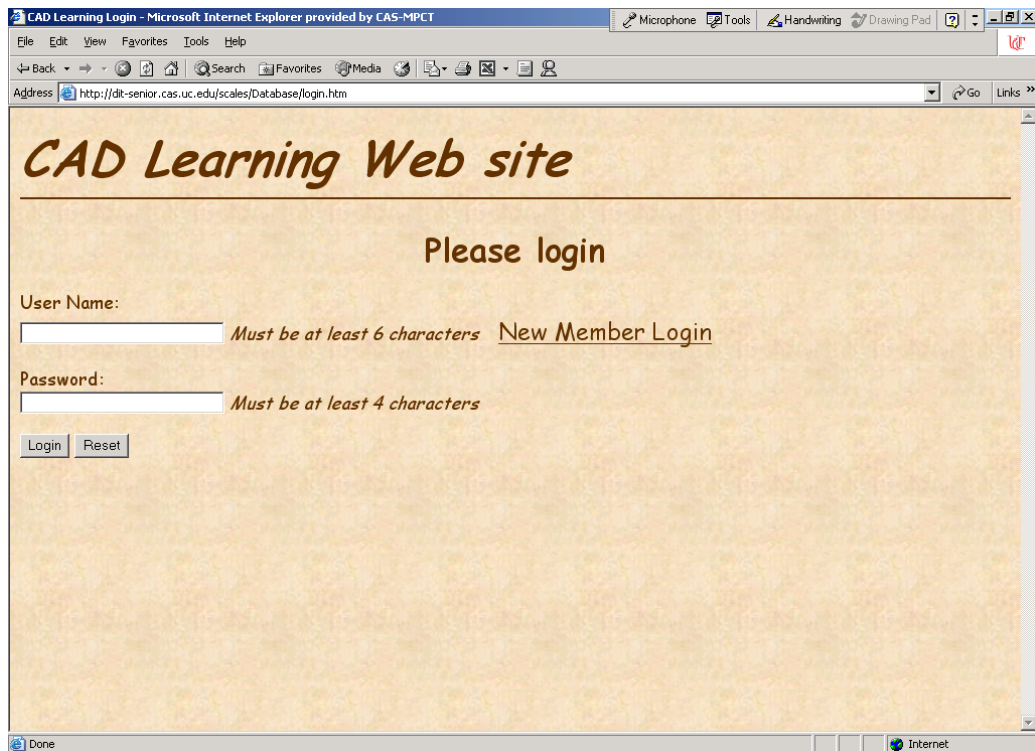


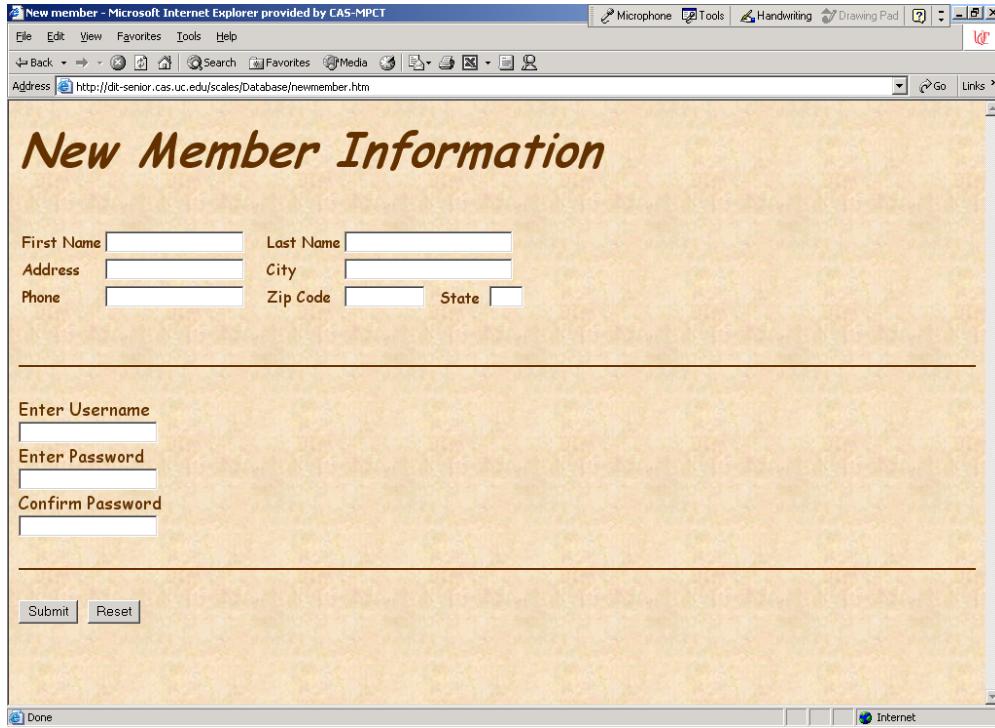
Figure 19. Login Database Design View



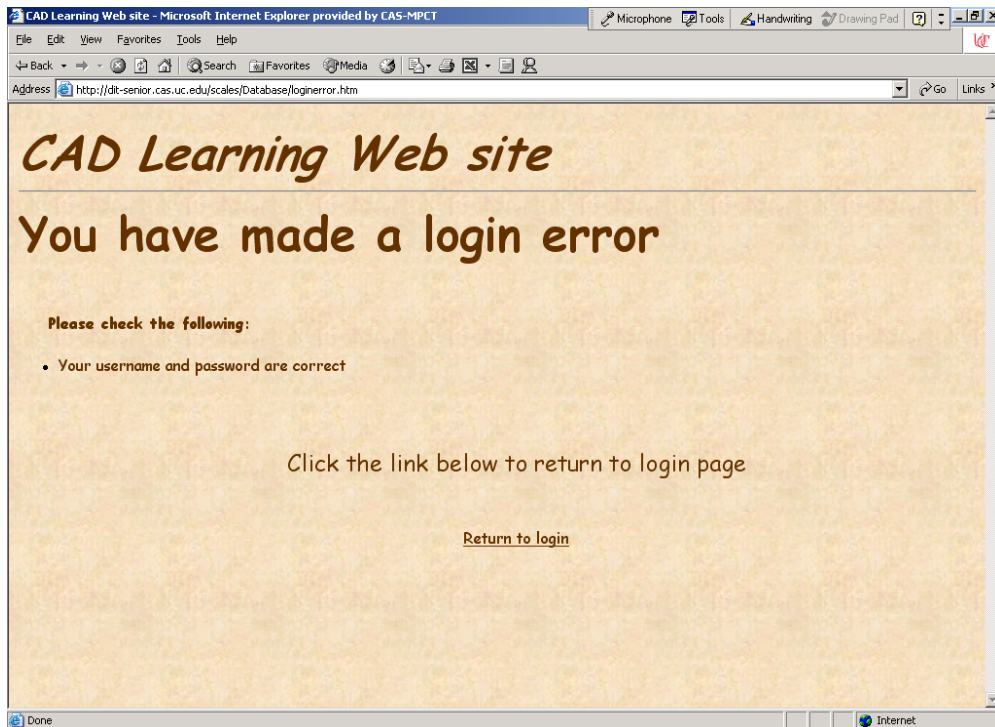
**Figure 20. Login Database Table**



**Figure 21. Login Screen**



**Figure 22. New Member Information Screen**



**Figure 23. Login Error Screen**

### **3.5 The Web Site**

The CAD Learning Web site will incorporate many different aspects of my learning while at CAS. It will incorporate HTML, Dreamweaver, VBA for AutoCAD, Paint Shop Pro 7, AutoCAD 200i, Macromedia Flash and Camtasia. HTML and Dreamweaver will be used to create the basic code and design layout for the Web pages. Paint Shop Pro 7 will be used to modify pictures that will be loaded throughout this Web site. Macromedia Flash will be used to create the opening screen for this Web site. It will also be used to create the buttons used throughout the Web site. Camtasia will be used to create AVI files. These video files will be used throughout the Web site as an additional learning tool for students. They will be able to watch videos on specific topics, in addition to the written text.

## **4. Deliverables**

### **4.1 Statement of Deliverables**

- 4.1.1 Create a Web site that will be designed to promote student growth and education.
- 4.1.2 Develop a Web site that students will be able to access to obtain help with basic CAD commands.
- 4.1.3 Develop a Web site that students will be able to access to obtain help with advanced CAD commands.
- 4.1.4 Develop a Web site that students will be able to access lecture notes and presentations from their classes.
- 4.1.5 The Web site will be developed so that instructors will be able to use it as a teaching aid in the classroom.
- 4.1.6 The Web site will be developed to help obtain and promote consistency within the CAD department.
- 4.1.7 The Web site will incorporate Visual Basics for Applications as an advanced topic for some of the advanced students.
- 4.1.8 The Web site will give students opportunities to use VBA projects within

their own AutoCAD drawings.

## **5. Proof of Design**

Deliverable 4.1.1 was accomplished by using the categories and topics that were selected. Students will select the topics that they need specific help with. This Web site will allow student's unlimited access to the help they need. It will allow student's access to Power point presentations and class assignments.

The first navigation button "Commands" accomplished deliverable's 4.1.2 and 4.1.3. This gives student's access to Basic Commands and Advanced Commands, in addition to Toolbars. The link to Basic Commands allows students to link to topics such as Function Keys, Drawing Aids, File Commands, Draw Commands, Selection Sets, and many more. The Advanced Commands allow students to link to topics such as Layers, Advanced Drawing Setup, Layouts and Model Space, and many more. The link to Toolbar's allows students to view each command's icon, pull-down menu, and alias (short cut key for a command).

The second navigation button "Presentations" accomplished deliverable 4.1.4. This gives student's access to their instructor's lecture notes or presentations.

Deliverable 4.1.5 was accomplished by the entire Web site. Instructors can use the Commands links to help students that need some extra help. They can use the Presentation link to display their Power point presentations over the Internet or in the class. If one of their students misses a class, that student can still have access to the presentation they missed. They can have students link to outside Web sites to do research on specific projects.

Deliverable 4.1.6 will be accomplished when the Web site is fully implemented within the CDD department. This project will not be implemented until later this year.

Information from other instructors still needs to be included in the Web site. When it is officially implemented, instructors will be able to use lecture notes and presentations from other instructor's.

Deliverable 4.1.7 was accomplished with the sixth navigation button "VBA". It links students to The VBA Editor, How to Get Started with VBA, Introduction to VBA, VBA commands, and VBA Code. This is an advanced topic for the CDD students because it is not currently taught in the CDD curriculum.

Deliverable 4.1.8 was accomplished with the sixth navigation button "VBA". When the student uses the "Sample VBA Code" link, they will be able to use this code within their own drawings. They will find step-by-step instructions on how to accomplish this.

## **5.1 Testing and Evaluation**

The Web site designed for the CDD department meets all deliverables set in section 4.1. Twenty-four people were asked to fill out a survey and evaluate the Web site. 5 were instructors and 19 were students. See Appendix F for Testing Proof of Design survey results.

## **6. Conclusions and Recommendations**

The CAD Learning Web site is a learning tool that will benefit students and instructors. It will allow student's to have continuous access to CAD commands, instructor presentation's, class assignment's, links for research, topics relating to VBA, and help on topics within the CDD department. 18 out 24 people surveyed thought the overall effectiveness was excellent. Six of those surveyed thought the overall effectiveness was good. Most comments from the surveys were very positive. Any negative comments were related to areas that were still under construction at the time of the survey.

Student responses were very positive. The second quarter students were very excited about this Web site being available for their use. Later quarter students were happy as well. Their only comments were about the Web site not being available earlier.

The first area that I would recommend some improvement is the graphics. I intended for this Web site to be more functional and didn't concentrate on making it fancy. However, that is what most people seemed to focus on. There are a lot of graphics used throughout the Web site, but they could use some work. The second area that needs some improvement is the database. I added this into the project towards the end. I should have spent more time on this area to make the Web site more dynamic. The third area that needs improvement is the AVI files. There is a problem with viewing them on the users end. When I correct this problem, the Web site will become more professional and more functional.

## Appendix A. Project Timeline

<b>Summer Quarter 2001</b>				
	June	July	August	September
Independent Study				
Learn Flash				
Learn Dreamweaver				
Create Web pages				
Determine the topics to be included in Web site				
Determine the Design of Web site				

<b>Autumn Quarter 2001</b>				
<b>Senior Design II</b>	Sept. 26 - Oct. 3	Oct. 4 - Oct. 10	Oct. 11 - Oct. 17	Oct. 18 - Oct. 24
Independent Consultations		10/9/01		10/25/01
Work on Draft of Proposal				
Progress Report 1 Due			10/17/01	
Create Prototype				
Create Flash Introduction				
Create Web pages				

<b>Senior Design II</b>	Oct. 25 - Oct. 31	Nov. 1 - Nov. 7	Nov. 8 - Nov. 14	Nov. 15 - Nov. 21
Independent Consultations	11/1/01			11/21/01
Finalize Proposal	Due: 11/07/01			
Draft of Final Report Due		11/07/01		
Create Prototype				
Create Web pages				
Finalize Prototype				
Test Prototype				
Progress Report 2 Due			11/14/01	

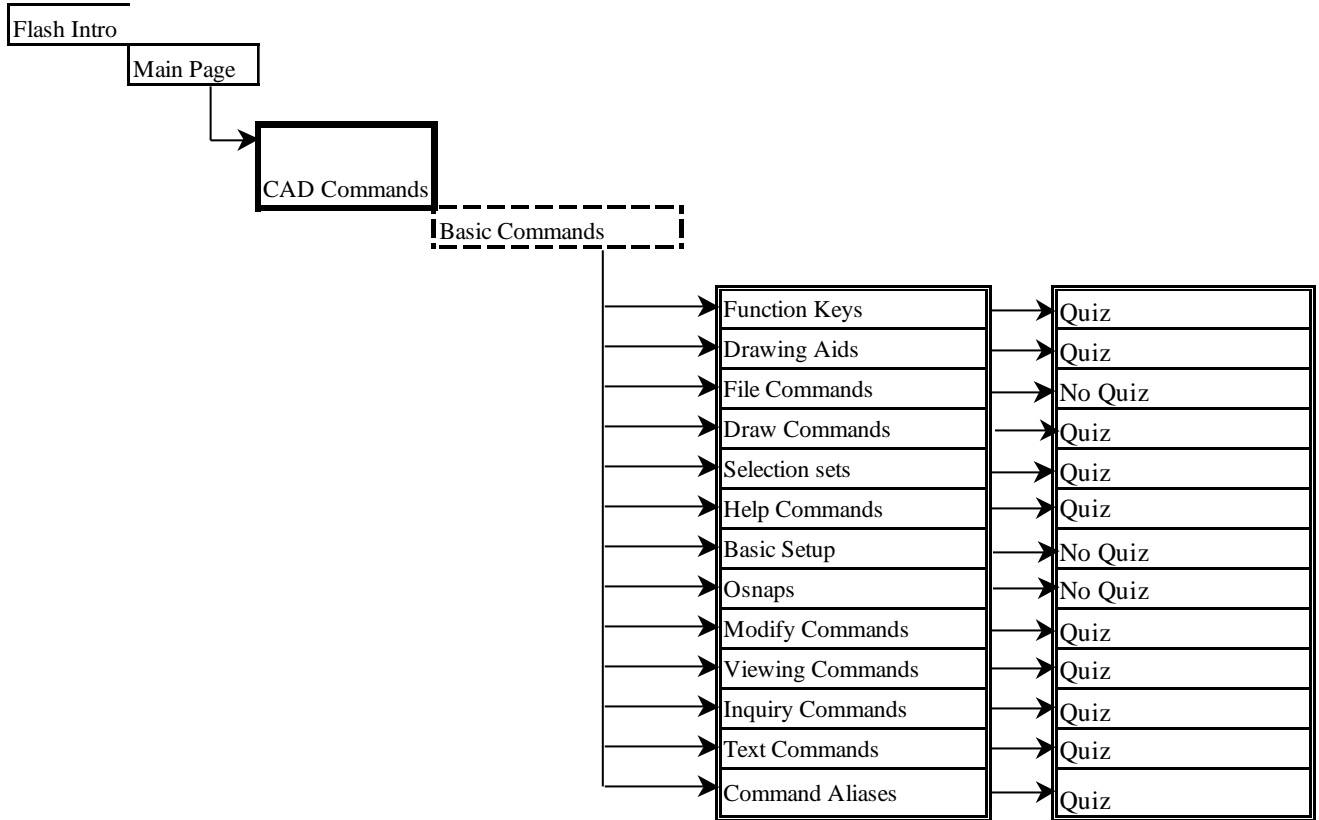
<b>Senior Design II</b>	Nov. 22 - Nov. 28	Nov. 29 - Dec. 5
Test Prototype		
Oral Presentation of Project		

<b>Winter Quarter 2002</b>				
Independent Study	December	January	February	March
Create Web Pages				
Update Flash Introduction				
Start Testing Web site				
Learn VBA				

<b>Spring Quarter 2002</b>				
<b>Senior Design III</b>	Week of March 25	Week of April 1	Week of April 8	Week of April 15
Create Web Pages				
Preliminary Student Testing				
Documentation				
Revision's and redevelopment				
<b>Senior Design III</b>	Week of April 22	Week of April 29	Week of May 6	Week of May 13
Student Survey's				
Documentation				
Revision and Redevelopment				
Final Testing				
Implement Web site				

<b>Senior Design III</b>	Week of May 27	Week of June 3
Final documentation		
Final Presentation		

# Appendix B. Organizational Scheme



Advanced Commands

→ Layers	→ Quiz
→ Adv. Drawing Setup	→ No Quiz
→ Adv. Modify Commands	→ Quiz
→ Layouts and Model Space	→ Quiz
→ Blocks and Wblocks	→ Quiz
→ Block Attributes	→ Quiz
→ Advanced Selection Sets	→ No Quiz
→ AutoCAD design Center	→ No Quiz
→ Grips	→ No Quiz
→ Dimensioning	→ Quiz
→ Object Linking and Embedding	→ Quiz
→ Xreferences	→ Quiz
→ Raster Images and Vector Files	→ Quiz

Toolbars

→ Dimensions
→ Draw Commands
→ Inquiry Commands
→ Insert Commands
→ Layouts
→ Modify Commands
→ Modify II commands
→ Object Snaps
→ Reference
→ Render
→ shade
→ Solids
→ Standard Toolbar
→ View Commands
→ Viewports
→ Zoom Commands

Presentations

Mrs. Scales

CAD Qtr 7

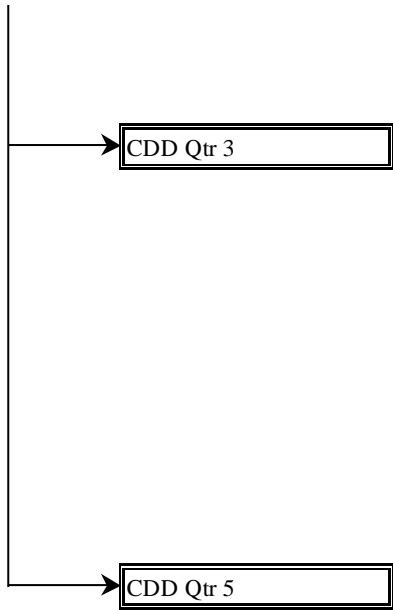
Chapter 7
Chapter 8
Chapter 9
Chapter 10
Chapter 13
Chapter 14
Chapter 16
Chapter 17
Chapter 19

CDD Qtr 1

Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
Chapter 9
Chapter 10
Chapter 11

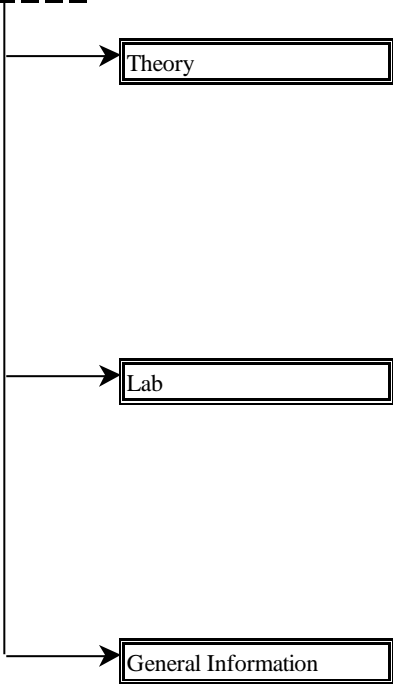
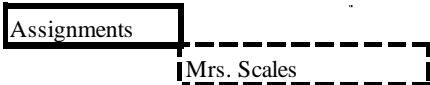
CDD Qtr 2

Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
Chapter 9
Chapter 10
Chapter 11
Dimensioning
Blocks and Wblocks
Attributes



Dimensioning
Chapter 5
Chapter 6
Chapter 7
Chapter 14
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Chapter 3
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Chapter 7
Chapter 8
Chapter 9



Cad Quarter 7
CDD Quarter 1
CDD Quarter 2
CDD Quarter 3
CDD Quarter 5

Cad Quarter 7
CDD Quarter 1
CDD Quarter 2
CDD Quarter 3
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Sample VBA Code

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AutoDesk
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VBA

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VBAIDE
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VBAMAN
VBARUN
VBASTMT

## **Appendix C. Resources and Logistics**

### **Hardware**

The following is a list of hardware that I used for this project:

- Computer - Minimum of a Pentium III with 128mb Ram, 12 GB hard drive
- 100 MB Zip drive
- CD-ROM
- Color Printer
- Digital camera

### **Software**

The following is a list of software I used for this project:

- Microsoft Office 2000
- Macromedia Flash
- Jasc Paint Shop Pro 7
- Dreamweaver 4
- Coursebuilder for Dreamweaver
- Adobe Acrobat
- Camtasia
- AutoCAD 2000i

## **Appendix D. Budget**

### **Hardware**

Computer	\$1,500.00
100 MB Zip Drive	100.00
CD-ROM	100.00
Color printer	250.00
Digital camera	450.00

### **Software**

Microsoft Office	250.00
Macromedia Flash	320.00
Jasc Paint Shop Pro	100.00
Dreamweaver	260.00
Coursebuilder	0.00
Camtasia	150.00
Adobe Acrobat	
AutoCAD 2000i	3,300.00

**Budget Grand Total    \$ 6,630.00**

## Appendix E. Testing Proof of Design Survey

Please take a moment to complete this evaluation form. Your comments are important to improve the product. Please complete the form at the end of the presentation. Your comments are appreciated.

Name of Product: **CAD Learning Web site**

- |   |           |      |      |      |
|---|-----------|------|------|------|
| 1. Overall effectiveness of the program                               | Excellent | Good | Fair | Poor |
| 2. Program organization and execution                                 | Excellent | Good | Fair | Poor |
| 3. Do you like the methods used in the program?                       | Excellent | Good | Fair | Poor |
| 4. How do you like the graphics and text?                             | Excellent | Good | Fair | Poor |
| 5. Do the links function properly?                                    | Excellent | Good | Fair | Poor |
| 6. If not, what areas need to improve?                                |           |      |      |      |
| 7. Are the Navigation buttons understandable and functional?          | Yes       | No   |      |      |
| 8. If not, what areas need improvement?                               |           |      |      |      |
| 9. Is the appearance acceptable?                                      | Yes       | No   |      |      |
| 10. If not, What would you recommend?                                 |           |      |      |      |
| 11. Are there any topics that weren't covered that should be covered? | Yes       | No   |      |      |
| 12. If so, what topics would you recommend to be added?               |           |      |      |      |

13. Features that would make the program better:

14. How would you rate the overall Performance of the Product?

15. Were there any bugs throughout the Web site?

**Beta testing performed by:**

**Name:**

**Title:**

**Company:**

**Address:**

**Phone Number:**

**E-mail address:**

## Appendix F. Testing Proof of Design Survey Results

1.	Overall effectiveness of the program	Excellent	Good	Fair	Poor
		<b>18</b>	<b>6</b>	<b>0</b>	<b>0</b>
2.	Program organization and execution	Excellent	Good	Fair	Poor
		<b>19</b>	<b>5</b>	<b>0</b>	<b>0</b>
3.	Do you like the methods used in the program?	Excellent	Good	Fair	Poor
		<b>16</b>	<b>8</b>	<b>0</b>	<b>0</b>
4.	How do you like the graphics and text?	Excellent	Good	Fair	Poor
		<b>10</b>	<b>8</b>	<b>6</b>	<b>0</b>
5.	Do the links function properly?	Excellent	Good	Fair	Poor
		<b>17</b>	<b>7</b>	<b>0</b>	<b>0</b>
6.	If not, what areas need to improve?				
	<b>Need more graphics</b>				
	<b>Not all links are complete</b>				
7.	Are the Navigation buttons understandable and functional?		Yes	No	
			<b>24</b>	<b>0</b>	
8.	If not, what areas need improvement?				
9.	Is the appearance acceptable?		Yes	No	
			<b>24</b>	<b>0</b>	
10.	If not, What would you recommend?				

11. Are there any topics that weren't covered that should be covered? Yes No

2 22

12. If so, what topics would you recommend to be added?

**Create toolbars**  
**Create profiles**  
**Create titleblock with attributes**  
**Creating attributes**

13. Features that would make the program better:

**AVI files**  
**Sound for powerpoint**  
**More graphics**

14. How would you rate the overall Performance of the Product?

**Excellent**  
**85%**  
**Very Good**  
**8 out of 10**

15. Were there any bugs throughout the Web site?

**Did not work well with Netscape Navigator**  
**Looking at presentations**  
**Error occurred trying to scale factors sheet**

## Appendix G. Quiz.asp Code

```
<html>
<head>
<title>
quiz </title>
</head>
<body>

<%@ LANGUAGE="VBSCRIPT" %>
<%
Server.ScriptTimeOut = 120

Dim sqlcall
Dim rs
Dim oConn
Dim quesnum
Dim quesId

quesnum = 0
quesId = -1

Set oConn = Server.CreateObject("ADODB.Connection")
oConn.Open "Driver={Microsoft Access Driver (*.mdb)};" & _
    "Dbq=c:\inetpub\wwwroot\scales\project\db1.mdb;" & _
    "Uid=;" & _
    "Pwd=;"

'Is this user name already in use for this school?

sqlcall = "SELECT tblQuizInfo.QuestionId, tblQuizInfo.QuestionText, tblAnswer.AnswerText " & _
    "FROM tblQuizInfo INNER JOIN tblAnswer ON tblQuizInfo.Id = tblAnswer.Id " & _
    "WHERE (((tblQuizInfo.QuizId)=1)) " & _
    "ORDER BY tblQuizInfo.QuestionId, tblAnswer.DisplayOrder;"

Set rs = oConn.execute(sqlcall)
do while not rs.eof
If quesId <> rs.fields("QuestionId").value then
    quesnum = quesnum + 1
    response.write ("<p>" & quesnum & ". " & rs.fields("questiontext").value & "</p>" & vbcrLf)
    quesId = rs.fields("questionId").value
End If

Response.write ("<input name=""G" & quesnum & "RadioInp"" type=""radio"">" &
rs.fields("AnswerText").value & "<br>" & vbcrLf)
rs.movenext
loop
set rs = nothing
set oConn = nothing
response.write message
    %>
```

## Appendix H.

### Code created from Quiz.asp

```
<html>
<head>
<title>
quiz </title>
</head>
<body>

<p>1. What allows you to specify the type and precision
of linear and angular units?</p>
<input name="G1RadioInp" type="radio">Units<br>
<input name="G1RadioInp" type="radio">Limits<br>
<input name="G1RadioInp" type="radio">Grid<br>
<input name="G1RadioInp" type="radio">Ortho<br>

<p>2. What command allows you to set the size of the drawing area?</p>
<input name="G2RadioInp" type="radio">Units<br>
<input name="G2RadioInp" type="radio">Limits<br>
<input name="G2RadioInp" type="radio">Grid<br>
<input name="G2RadioInp" type="radio">Ortho<br>

<p>3. What command forces lines to be drawn horizontal or vertical?</p>
<input name="G3RadioInp" type="radio">Ortho<br>
<input name="G3RadioInp" type="radio">Grid<br>
<input name="G3RadioInp" type="radio">Snap<br>
<input name="G3RadioInp" type="radio">Limits<br>

<p>4. What command is a visual reference of units of lengths?</p>
<input name="G4RadioInp" type="radio">Units<br>
<input name="G4RadioInp" type="radio">Limits<br>
<input name="G4RadioInp" type="radio">Grid<br>
<input name="G4RadioInp" type="radio">Snap<br>

<p>5. What action acts like the enter key?</p>
<input name="G5RadioInp" type="radio">Space bar<br>
<input name="G5RadioInp" type="radio">Esc<br>
<input name="G5RadioInp" type="radio">Snap<br>
<input name="G5RadioInp" type="radio">Limits<br>

</body>
</html>
```

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