

WORK PLAN

Mary Jo Brown

Edt 432 – Development 1

Lesson: Drawing Objects in AutoCAD

Introduction

The current assignment consists of the design and development of an interactive Web based e-class that presents a self-paced approach to teaching the steps necessary to complete an architectural drawing. The project includes a simulated AutoCAD interface along with animated instructions aimed at stimulating the students learning experience. It ends with a self-assessment session designed to check progress and reinforce learning.

The AutoCAD program is an interactive drawing system designed to permit the user to create or edit a technical drawing. AutoCAD is a very versatile program and many offices are finding value in its offerings. From tracking essential property in buildings as a visual database to providing detailed engineering and architectural drawings for builders, the AutoCAD program has many applications. There are many work opportunities for the CAD operator ranging from tracer/draftsperson to Senior Architectural/Engineering Draftsperson. Students in a beginning drafting class benefit from the self-paced learning that forms the foundation for future advancement.

Overall, the project focuses on the typical drawing conventions used in drafting two-dimensional (2D) architectural objects. Each lesson emphasizes the sequence of related commands that when combined enables the student to complete a small project. The lesson opens with an initial screen explaining the technical requirements needed to run this Web site and leads to an introductory screen establishing the premise of the tutorial and the instructions to begin. Subsequent screens cover AutoCAD command sequences starting with the *draw* command and continuing down the menu list to the subcommands: *line*, *rectangle*, *arc*, *circle*, and *polygon*. A simulated AutoCAD interface designed to allow the learner to view each command sequence helps introduce the command order. After viewing the simulation, the student will be encouraged to repeat the learned command sequences though another simulated AutoCAD interface. This lesson continues only if the correct sequence is followed. Feedback is

provided for incorrect attempts; success is rewarded with progress.

Goals

The learner completing these lessons will develop skills and competencies with frequently used commands and terminology related to two-dimensional drawing.

After successfully completing the Web lesson, the student will be able to construct two-dimensional objects, such as line, rectangle, arc, and if time permits, circle and polygon.

After successfully completing the Web lesson, the student will know which basic commands to use to create a 2D drawing.

Client

This project is being completed for a High School Level Vocational -Technical School. The web lesson will be used to aid in the instruction of students enrolled in a first year AutoCAD drafting class. The teachers using this courseware have instructed that the courseware follow and complement their lesson plans. That the courseware is also to be used for student assessment and placement in the class, and show which students may need remedial help.

Scope

The tutorial included in this assigned project is part of a much larger courseware project being built under contract for the local area Vo-Tech. The full scope of the "Learning AutoCAD" project is a comprehensive course that follows along with the instructor's lesson plans throughout the first year. The current assignment titled "Drawing 2D Objects", an introduction to using basic drawing commands, is the second installment of this contract. The first installment title "Learning AutoCAD" is also a Web based tutorial. The Flash animation tutorial "Drawing 2D Objects" will be added to *Module 3 - Drawing* in the "Learning AutoCAD" courseware. *Module 3 - Drawing* will precede the already completed iMovie titled "Drawing and Editing Text" in *Module 4 - Text*.

The "Drawing 2D Objects" interactive Flash segment is a further attempt at using interactive graphic

animation to help teach a skill. This segment continues the concept of offering solutions that enhance performance and knowledge by using an interactive graphical learning environment.

The scope of this segment "Drawing 2D Objects" includes three (3) to five (5) brief Flash animation lessons on drawing two-dimensional objects. The tutorial will cover the following commands: Line, rectangle and circle, and if time permits arc and polygon. The lesson opens with an initial screen explaining the technical requirements needed to run this Web site and leads into an introductory screen establishing the premise of the tutorial and the instructions to begin. The initial screen may only be necessary for the teacher's information and may not be necessary to include in the student's version. Subsequent screens cover AutoCAD command sequences starting with the *draw* command and the subcommands: *line*, *rectangle*, *arc*, *circle*, and *polygon*.

A Flash simulated AutoCAD interface is designed to allow the learner to view each command sequence separately.

The learner then has the opportunity to assess his/her learning by repeating the steps. As each step is completed successfully the learner advances through the lesson. A self-assessment module is added to the end of the tutorial.

Target Audience

The target audience for this e-Learning Class is a High School / Vo-Tech Level Drafting Class. They range in age from 15 to 18. The students are enrolled in a beginning architectural drafting program that may or may not lead to further education in the Architecture/Engineering field. While some students will advance to a Private or Community College, most of the students are mainly concerned with learning that is relevant to near future job opportunities.

Although the typical CAD user has a keen interest in Computer Technology, an important consideration is the computer technology the Vo-Tech student may have at home. A low-end system with slow internet connectivity will inhibit the learner's motivation and productivity. Although the students will have access to the courseware and AutoCAD program in the classroom, it is hoped that as more segments are added to "Learning AutoCAD" that homework can be assigned. This will affect the

design of the courseware for students working on low-end home computers.

Limitations

Time and funds are the major constraints put upon this project. The project completion date is firm.

Because the lessons are introductory in nature, it is reasonable that the project is to be completed before the start of the Fall Semester. To help offset the strain on the Vo-Tech's budget, the "Learning AutoCAD" project is to be completed in segments. The current project "Drawing Objects" is presented in two parts: drawing lines, rectangles, and circles; and drawing arcs and polygons.

Another major constraint to address is the level of technology the students have at home. Therefore, the courseware must be designed to accommodate the lower-end computer technology, which includes a smaller size monitor, slower processors, smaller memory storage for plugins, and slower dial-up/modem internet connectivity. The students will also have different operating systems and browsers, as well as, different platforms to work on at home. A uniform standard needs to be set without compromising the success of students who would benefit from this self-pace style of learning.

Finished Projects

The finished project is a blend of graphics, text, simulations, sound, and automated assessment to create an interactive Web based tutorial.

As agreed upon in the Contract, the client will receive as part of the second segment of the "Learning AutoCAD" Courseware titled "Drawing Objects":

1. Work plan document covering Objectives, Goals, Scope, Client, Target Audience, and Limitations of the project.
2. Story boards
3. Project documentation
4. Development files: all required graphic files used in "Drawing Objects" jpegs saved from original Photoshop files, Web-ready gifs created from original Photoshop files, flash library buttons & graphics files, and sound files.
5. Original Flash animation .FLA file.
6. Published .SWF Flash file

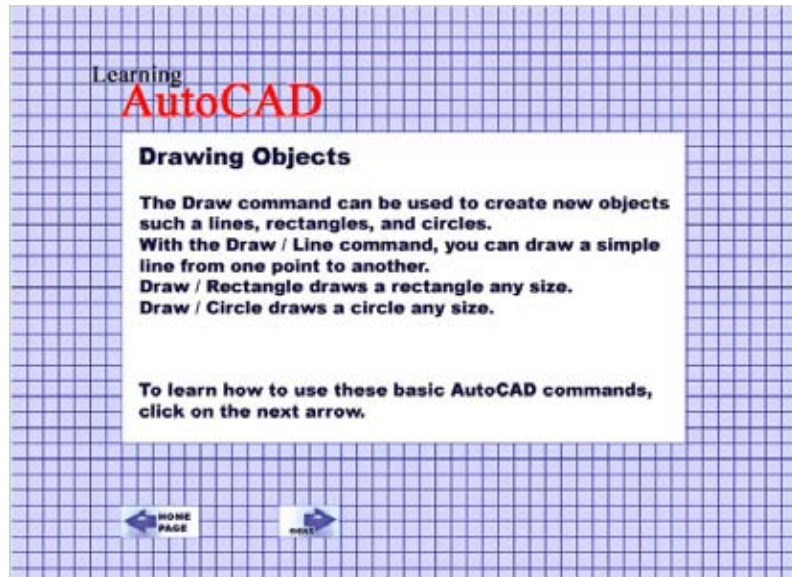
Project Timeline

To Do Timeline	Completion Date
Work Plan - Introduction & Goals	5/31 completed on time
Work Plan - Complete	6/7 completed on time
Work Plan - Storyboards	6/9
Create Graphical Elements:	
Screen sketches for each page	6/5-6/12
Screen captures of AutoCAD graphics	6/5-6/12
Other Graphics	6/5-6/12
Flash Navigation Buttons	6/5
Plan content, graphic layout for each segment:	
1 Draw / line	6/5
2 Draw / rectangle	6/12
3 Draw / circle	6/12
4 Draw / arc (time permitting)	6/12
5 Draw / polygon (time permitting)	6/15
Complete all Flash timelines & coding	6/15
Testing & debugging	6/20
Publish client version	7/1
Project Documentation	7/1

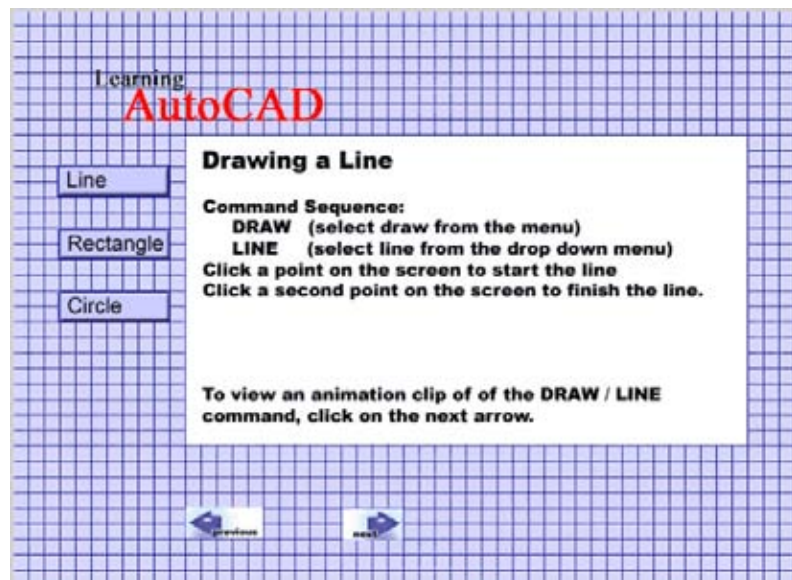
STORYBOARDS

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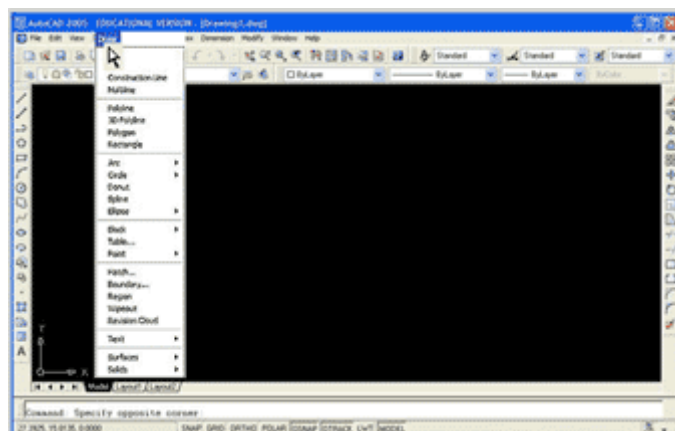
This storyboard shows the Introduction to the Drawing Objects segment. The student can click on HOME to go back to the Main Menu of the Website designed in Dreamweaver. The entire website is not part of this project. The student can click on next to go to the Drawing Menu.



This storyboard is the Drawing Menu. The student can choose to learn about Drawing Lines, Rectangles, or Circles. When they mouseover the buttons a description of each command is displayed in the text window. When they click on each button a simulated AutoCAD lesson is started for each command.



This is the simulation screen for Drawing a Line. It will be inserted in the blue grid background and use the previous and next navigation buttons.



STORYBOARDS

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This storyboard will be an assessment type simulation to test the students' knowledge of the AutoCAD commands presented to them in this lesson. They will be instructed to move the cursor to the area on the screen that mimics the actual command sequence. The Movie Clip will continue with each correct response. Another assessment would be a drag and drop to test knowledge of the commands.

