

Japanese Karatedo Web Site

By

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Abstract

This report covers the production specifics of the Web site I created for Japanese Karatedo, Shotokan of Cincinnati. The purpose of this project was to establish online advertising as well as create a practical apparatus for the students of this martial arts school. To complete this site I incorporated the database, multimedia, and programming aspects of the IET program in order to create a useful and interactive Web site. Within this report are the details concerning design protocols, specific tools used, planned and achieved deliverables, and the summary of what I learned on this project.

Japanese Karatedo Web Site

1. Problem Statement

1.1 Statement of Need

For my Senior Design product I created a Web site for Japanese Karatedo, a martial arts dojo. The owner, Sonny Kim, wanted a Web site to serve as an advertisement as well as keep dojo members up-to-date on events. The dojo's first Web site was an undersized site that was done in FrontPage and had very little content. Mr. Kim wanted to use graphics and animations to gain, and hold, the attention of people searching for information on martial arts, especially in Cincinnati. In addition to attracting new customers, he wanted the site to be something practical for the students. A calendar that highlights dojo activities, background information on the dojo, instructor profiles, and an interactive bulletin board will help achieve this. He also wanted to be able to have online forms for competitions and membership on the site to ease dojo administration.

1.2 Areas of IT Emphasis for the Product

The three areas of the IET curriculum that I utilized while developing this site were programming, multimedia, and database management. While all three were not used to the same extent, they were indispensable to the completion of this project.

1.2.1 Programming

The primary element of programming for this project was using HTML to code the individual pages. While I used Macromedia DreamWeaver 3.0 to design the pages, it was manipulating the code by hand was essential in order to specifically alter the code.

DreamWeaver was very useful in creating the layout of the pages, but at times it can produce extra non-essential code that will increase the download time of the site. Also as a developer, I prefer certain coding conventions different from those provided by the editor. I also utilized cascading style sheets in an effort to produce streamlined and uniform pages. Cascading style sheets eliminated the need to make multiple changes during the production of the site and saved countless hours when design changes were made. I also employed the use of Active Server Pages both for the user login pages on the members' section of the site as well as the bulletin board. The user login prohibits non-dojo members from accessing both the bulletin board and the belt test sections of the site. Mr. Kim has personally developed the specifics for his belt tests and preferred that these not be open to the public. I created a database of usernames specific to each member with a common password which the user is prompted for upon entering the members' section. When the user logs in, a session variable is created from their username in ASP. If the user attempts to access a page without having logged in, they receive an error message. The bulletin board on the members section was also created using ASP. The user's name, message subject, and message are all entered into a database as the user enters this information. Upon clicking on the title of the message on the board's front page, I used SQL statements to retrieve this information and display it in an HTML table. I also used several small JavaScript utilities on this site. I have a validation script in place to make sure a user has entered their username and password before continuing with the login, a profanity checker to ensure no undesirable messages are submitted to the message board, and several scripts enabling the user to print or close windows.

1.2.2 Multimedia

Many of the martial arts related sites I viewed while preparing the design of this site were static pages with little emphasis on color or animation. Mr. Kim wanted a site that had an emphasis of color and animation to gain the user's attention. I created graphics using Paint Shop Pro 7 and altered and enhanced photographs using Photoshop.

1.2.3 Database

For both the user login pages and the message board it was necessary to create two separate databases. I used Microsoft Access to create a database of usernames and passwords for the user login pages. Since we knew beforehand that we would have fewer than one hundred members at a time, Access was a suitable program. I created pages to add, delete, and list any usernames from the database, all of which are executed through SQL statements. For the message board, I had to create a database consisting of the subject headings, messages, replies, and message position elements necessary to create an organized bulletin board. I used SQL statements to create and retrieve the messages based on the user interaction.

2. Review of the Literature

I did not have to do a lot of research in order to justify this project. I had a customer who had very specific intentions for his Web site. In creating the project, the majority of the resources I used came from Web sites dealing with specific portions of my project. I consulted a lot of sites that had either code samples or tutorials to complete many small sections of my project. Second to these were manuals or companion guidebooks that I used as references for the different types of software I was using.

Generally when I encountered a problem or question I could find the answer relatively quickly on the Web or within the accompanying software manuals.

3. Product Description and Intended Use

A. User Profile

One of the main points that Mr. Kim stressed during the design of the site was that he wanted a site that was straightforward and easy to navigate. He pointed out other karate sites that he found confusing or boring as examples of the way we did not want to go. Also, many of the dojo's students are children and Mr. Kim wants this site to be something simple enough that even they have no difficulty using it. I developed the site so that Web users with little or no IT experience would not have a problem accessing any portion of it. From the standpoint of advertising, I wanted to information on the site to be well organized and condensed for quick perusal. If a page became too long, I found a way to break it up into another section of the site in an effort to keep the site from being drawn out and boring.

B. Design Protocols Organization

Mr. Kim and I collected the hard copy information he already had concerning the dojo and divided it into sections: Class Information and Dojo Membership, a photo gallery, history and philosophy, and instructors. I have dedicated a page to each of these sections. From there we decided to include a page detailing directions to the dojo and a members only section available only to dojo students. All of the pages will be navigable from the opening page with sub sections, such as driving directions from a specific

location, being accessible from one of the main sections. The members' section will have links to the calendar and the bulletin board, in addition to the login pages. Currently I am organizing the layout for this section and Mr. Kim and I are still developing the details of which pages will be open to whom.

Navigation

Navigating the site is done through a typical button scheme. I created the buttons in Flash and placed them into a small menu on each of the pages of the site. From any page the user can click to get back to the home page or to any of the other sections. There are also several links within the site that bring up small windows with detailed information pertaining to sub sections. These windows open over the top of the current page and have the ability to print out for further reference as well as a link to close them when the user is finished.

Graphics/Animation

Mr. Kim wanted to get a site online quickly with the intent of adding the bells and whistles once this was accomplished. For a color scheme I am using a combination of gray, black, white, and red. We looked at several karate sites and decided on a background that showcased the Shotokan Karate trademark tiger in addition to the dojo logo. I have used black as the font color in contrast to the light background. We discussed alternating a light text against a darker background and vice versa, but eventually agreed that what was in place was more uniform. I created a photo gallery page with two separate sections for both the adult and child classes. Mr. Kim took many photographs with a digital camera and I selected the best ones and organized them into separate pages. I used

Photoshop 6.0 to alter, enhance, and optimize these photographs. The galleries offer some interactivity to the user as they can select a thumbnail in order to see a larger version of the image. I also used some of these photos throughout the site and within the Flash animations. I used Macromedia Flash 4.0 to create the animations used on the site. I created an opening movie clip as the opening page to the site, as well as many short animations for menus, titles, and banners. These animations really add some life to each of the pages and help draw the user's attention to specific areas on the page.



Figure 1. Japanese Karatedo Logo

Hosting

We are hosting the site through Brinkster.com. During the initial stages of the project, I utilized their free service to get the site up and running. When the first design phase was completed, I transferred the domain name japanesekaratedo.com over from the previous developer and Mr. Kim upgraded to Brinkster's premium service plan. The plan offers one hundred megabytes of space, file transfer protocol access, and twenty-five email accounts.

4. Deliverables/Objectives

The specific goals for this project related to whether the site is being viewed by a dojo member, or someone just browsing the Web.

Specifics for non-dojō users include:

- Detailed HTML pages providing information on Shotokan Karate history and philosophy.
- A series of pages dedicated to background information on the dojō, instructor profiles, contact information, and class expectations.
- A flash enabled directions page that invites users to select which area of town they are coming from and their choice will provide a map with detailed written directions as well as a map.
- An interactive photo gallery where users can select photos to get a visual grasp of class demographics and the layout of the dojō.
- Several client side scripts including bookmarking, print, close window capabilities, form validation, and profanity checking.

For dojō members it includes:

- A series of ASP login pages that verify a username and password allowing access to the member's section.
- An interactive ASP bulletin board where users can post topics of discussion and submit comments and replies to other board posts.
- Online forms for competitions and belt testing paperwork.
- A yearlong calendar of events both within and outside of the dojō.



Figure 2. Members' Login Page

5. Development

Luckily, budget for this site was much less of a concern than the time aspect. I had free access to most of the hardware and software I needed to produce this site. I also used a lot of online resources in order to fill in any experience gaps I encountered.

A. Timeline

In creating this site, I was under two sets of constraints for time. I wanted to have the site functional to Mr. Kim's expectations while at the same time developing the specifics for Senior Design. By the end of Senior Design II, fall quarter of 2000, I had completed the basic layout for the non-dojo section of the site with several pictures and basic animations. Despite many communication and paperwork hurdles, we had secured the domain name and hosting service by January 31st. My second major milestone was to have a new background developed by mid February. By March 1st I had added the belt tests to the members' section as well as the calendar of dojo events. The full site was up and running by mid March and I have since been adding pages and details per Mr. Kim's

request. I have also created more elaborate animations and graphics and tested several different backgrounds.

B. Budget

Considering that I attained all of the software necessary to create this project through school or work, our monetary necessities minimal. Mr. Kim and I worked out an agreement where he would waive my tuition for karate class in return for the development of his Web site. Dojo tuition runs sixty dollars a month, with belt test running forty dollars apiece. Our agreement took effect in October, 2000 and I have taken two tests since then. I have added this to the table of costs as development service. I did most of the work on the site from either my home computer or my system at work so hardware costs were also negligible. The table below gives a breakdown of the potential cost of this project both with and without school and work assistance.

Product Title	Cost	Source	Real Cost	Source
Development Service	\$540		\$540	
DreamWeaver Ultradev	\$0	School/Download	\$500	Cnet.com
Flash 4	\$0	School	\$200	Cnet.com
Paint Shop Pro	\$0	School	\$75	Cnet.com
Photoshop 5.5	\$0	Work	\$600	Cnet.com
Brinkster.com (Web host)	\$11	Signup fee	\$11	Monthly fee
	\$11	Monthly rate	\$132	Yearly total
Network Solutions	\$75	Domain Name	\$75	Domain Name
Hardware (system)	\$0	Already owned	\$1400	Microcenter

System Upgrade	\$140	128mb RAM	\$140	128mb RAM
Totals	\$0		\$3740	

C. Hardware and Software

Almost all of the production of this site was done on my home or work computer. They are almost identical systems having 600-megahertz Pentium III processors, 196 megabytes of RAM, and ample hard drive capacity. The bonus of using my work computer was having access to a T1 internet connection which was a real luxury when transferring multiple files to the server.

The main software packages I used for this site were Macromedia Dreamweaver 3.0, Macromedia Flash 4.0, Jasc Paint Shop Pro 6.0, Adobe Photoshop 5.5, and Microsoft Access 2000. I had only occasionally used Dreamweaver for Web development prior to this project, but I now feel that it will be central to any future projects. It is relatively easy to learn, does not create an overwhelmingly amount of excess code, and has ample online support. Setting up pages using this program is very simple and it also allows for quick hand editing when necessary. In addition to Dreamweaver's design capabilities, it includes a phenomenal file transfer protocol accessory that makes uploading and downloading files very easy. I rarely encountered any problems or software crashes and when I did they were easily solvable through the forums on Macromedia's Web site.

Originally I planned to use Jasc Paint Shop Pro for my graphic needs as it had been the program with which I was most experienced and it was available through school. About halfway through the project Photoshop was installed on my work system and I gradually learned how to use this program to fulfill the projects graphical

requirements. Again the wide availability of online tutorials made it less complicated to learn up to an intermediate level.

I had limited experience with Macromedia's Flash 4 going into this project and learned enough about it during production to realize it is almost a necessity. I chose Flash because it is very widely used in development, is relatively easy to learn and use, and it creates relatively small file sizes for graphics. When I added a new background to the site in February, I was using static GIF images for the page titles which only looked mediocre and had a fairly large file size. I replaced these titles with Flash animations and not only did they look better but were much smaller files, thus loading a lot faster. Flash and Dreamweaver work together seamlessly which cut out what would have been a lot of time spent hand coding the animations into the pages.

I used Microsoft Access 2000 for the database portion of this project because of its ease of use and its ability to meet the site's demands. I knew that our databases were going to be relatively small so I really did not need any more functionality that what Access provides. Also I had taken Database Management I and had a reasonable feel for how the program works. It proved very useful when creating the Active Server Pages since these are both Microsoft technologies.

6. Proof of Design

Each projected deliverable of the project has met with varying degrees of success. The specific goals for users outside of the dojo have been met as Mr. Kim has reported that several new customers have inquired about karate lessons after viewing our site. The completed deliverables are:

- I set up several static HTML pages that detail the history and philosophy of Shotokan Karate. There are also more personalized pages that provide information on the background of the dojo, its instructors, and ways to contact the dojo. Mr. Kim obtained most of this information through his own personal research.
- I created an interactive Flash movie that allowed users to select a starting destination in Cincinnati which then, based on their choice, is linked to a page with a map from that section of town.



Figure 3. Flash Intro Page

- I implemented several small JavaScripts throughout the site. The smaller scripts perform functions such as opening, closing, and printing windows. The more advanced scripts validate that all fields on particular forms have been filled out as well as a profanity checking script for our bulletin board.
- I set up several interactive photo galleries for both the children's and adult classes. When a user selects a thumbnail, a larger version of that photograph is

brought up in that window. Later on in the project, Mr. Kim suggested adding video clips to the site which are now downloadable for viewing by users.

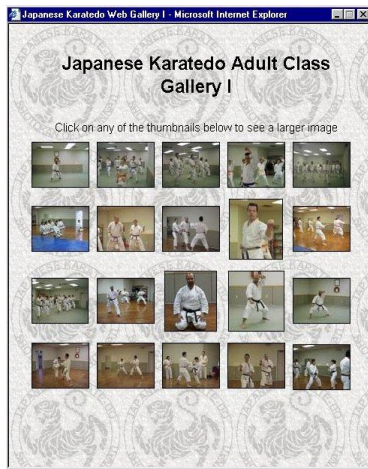


Figure 4. Gallery Index Page



Figure 5. Large Gallery Picture

The specific deliverables for dojo members were completed primarily using Active Server Pages.

- I created a user login scheme which assigns each member of the dojo a username and password. There is a session variable lock on all pages of the members' section which prohibits access without having logged in.
- Online forms for competitions and belt testing are in place and have been used with great success. Originally Mr. Kim and I had discussed designing forms that could be filled out and emailed in but this was met with objection from the dojo's main administrator Mrs. Kim. The resulting forms can be filled out online and then printed for submission to the dojo which has cut down on a significant amount of paper traffic to and from the office.

- The calendar of events ended up just being a static page that lists the yearlong activities. A regular HTML page was the simplest solution for this and has received most of the hits on our site.

When Mr. Kim and I were originally discussing his expectations for the site, one of his main concerns was that the site be easily navigable by users of any IT experience level. He wanted the children enrolled at his dojo to be able to use the site as easily as any adults. I feel that I was successful in this deliverable in that most of the compliments I have received have alluded to the site's simplicity of use. The kids at the dojo really seem to like it and the adults have expressed that they find it very useful for updates and information.



Figure 6. Kids Class Information Page

7. Conclusion

I learned a great deal about Web development from this project. One of the most important things I learned is that when creating a Web site, prior planning is absolutely integral to maintaining a schedule. The “measure twice, cut once” principle has never rang more true for me. Since I was learning a lot of what I was doing as I worked, it was

difficult to settle on anything for very long. As I learned more, I wanted to improve the site and this took up a great deal of production time. I was lucky to have an extra quarter between Senior Design I and II to be able to work on my project.

Before I began working on this Web site, I had only had minimal exposure to many of the software tools I was using. I was very lucky to have chosen programs that had multiple help resources and online tutorials. About halfway through my project I obtained a copy of Photoshop, a program I had never used before. I think this was a very positive aspect of the project as this program is a standard throughout Web development.

Secondly, I learned a lot about working for/with a client. Mr. Kim had previously had a negative experience with his Web developer that I think made him slightly wary of employing a learning developer. As Mr. Kim is my karate instructor, as well as a friend, I really did not want to disappoint him. Mr. Kim is not very technologically savvy and halfway through the project was becoming frustrated at what appeared to be my slow pace. I had to explain that not every element of development is visible and that I needed to focus on more of the behind the scenes work. Since we both had full time jobs, it was sometimes difficult to communicate and align schedules but in time I feel like we worked out an agreeable situation. I found that he appreciated updates as often as possible and it helped me as well to gauge progress. Overall I'm very pleased at how our arrangement has worked out and Mr. Kim has informed me that he is satisfied as well.

Above all else, I learned that organization was key to the success of this project. Whether that pertains to synchronizing files on local and remote servers or maintaining solid communication with the client, keeping everything orderly helped maintain a balance. Between work and school, useful production time was a lot easier to maintain if

I had my plans organized and thought out in advance. While I encountered many different hurdles while completing this project, most of the time I enjoyed working on it and feel a very strong sense of accomplishment with its completion.

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