

Bronson Door Company Web Site

By

Clint Holden

Submitted to
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the Degree of Bachelor of Science
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Abstract

The Bronson Door Company Web site is an informative, user-friendly Web site that advertises current garage doors and services to help increase more local business. Special features of the site include a “Garage Door Finder,” in which a user can browse the Bronson Door Company’s wide selection of garage doors. Then, if registered, the user has an option to save garage door preferences. Administrator web templates allow for easy updating of garage door information and viewing of customer information. Also, a fun game created with Macromedia Flash MX gives users some entertainment. The Web site has user-friendly interfaces and easy navigation. Some of the software tools used to build this site includes ASP.NET, C# and Microsoft Access 2003. The site contains a database backend that stores customer and garage door information utilized for the Web site.

Bronson Door Company Web Site

1. Statement of the Problem

The Bronson Door Company is a small business that employs four workers. They install new residential and commercial garage doors and service broken doors. Garage door types include: overhead, rolling steel, and fire doors. Their garage door opener brands are Genie and Lift Master (2). This business has installed over 5000 garage doors since it has started.

The Bronson Door Company currently has some advertisements in local newspapers and phone books. The company also advertises at trade shows, and advertisement stickers are placed on every installed door. The current advertisements are not enough though. To increase more local business the Bronson Door Company needs to advertise using this Web site.

2. Description of the Solution

A family friend, Brian Bronson, who owns this small business, asked if I would like to develop a web site for him (2). I decided to take on the Web site. This project then led me to work on it as my Senior Design project for my degree at the College of Applied Science. Brian and I discussed that this Web site would be extensive and take a year to complete. Cost, time, and budget were all agreed upon and the project had begun.

2.1 User Profile

The users for this project are: the client (anyone interested in the Web site), users (future garage door buyers), and the administrator (Bronson Door Sales and Service owner, Brian Bronson). All of these users have Internet access so they can visit the Web

site. They also know how to use a general web interface in a web browser, such as Internet Explorer. They understand basic Internet navigation and how to use Windows applications. The clients are as young as 13 years old, and are computer literate.

On the other hand, Brian Bronson has become familiar with the Administrator login interface. He now understands how to use web forms. It took only 30 minutes to show Brian the basics of the Web site. He has administrator permissions to read and write to the database. Web forms allow him to view, update, remove, and insert different doors and customers.

2.2 Design Protocols

The next sections explain the organization and color scheme that was used in the design of the Bronson Door Company Web site.

2.2.1 Organization

A single login at the start up page allows any user to easily find their way to the login features. This login saves space on the Web site instead of having multiple logins. At the login each user, the client, and administrator have specific tasks. The user has ability to save garage doors and view them later, and the administrator can view, update, remove, and insert garage doors and view/remove customers.

Garage door images are large enough to see the details in the image that are displayed on the Bronson Door Company Web site. The garage door finder features all large photos of garage doors. The idea of using all large images on this Web site was pondered from Clopay's Web site (See Figure 1.).



Figure 1. Clopaydoor.com Main Page, Source: (7)

Hyperlinks are included on every page in order for a user to navigate to and back from a web page. This navigation is easy to understand because each hyperlink is descriptive. The outline of the Web site can be found below (See Figure 2.). Buttons allow a user to perform a task within a page. These tasks include: a submit button to submit login information, navigation buttons to scan the databases, and action buttons to perform an update, remove, or insert.

2.2.2 Color Scheme

The background of the start up page is a brown and white gradient. This page has frames and images to give the page a formal look. Other pages on this Web site will have images of the business and garage doors. The garage door template and garage door

finder pages allow you to scan through the many garage door images included on the web server. Data validation and other errors will appear as red text on all pages.

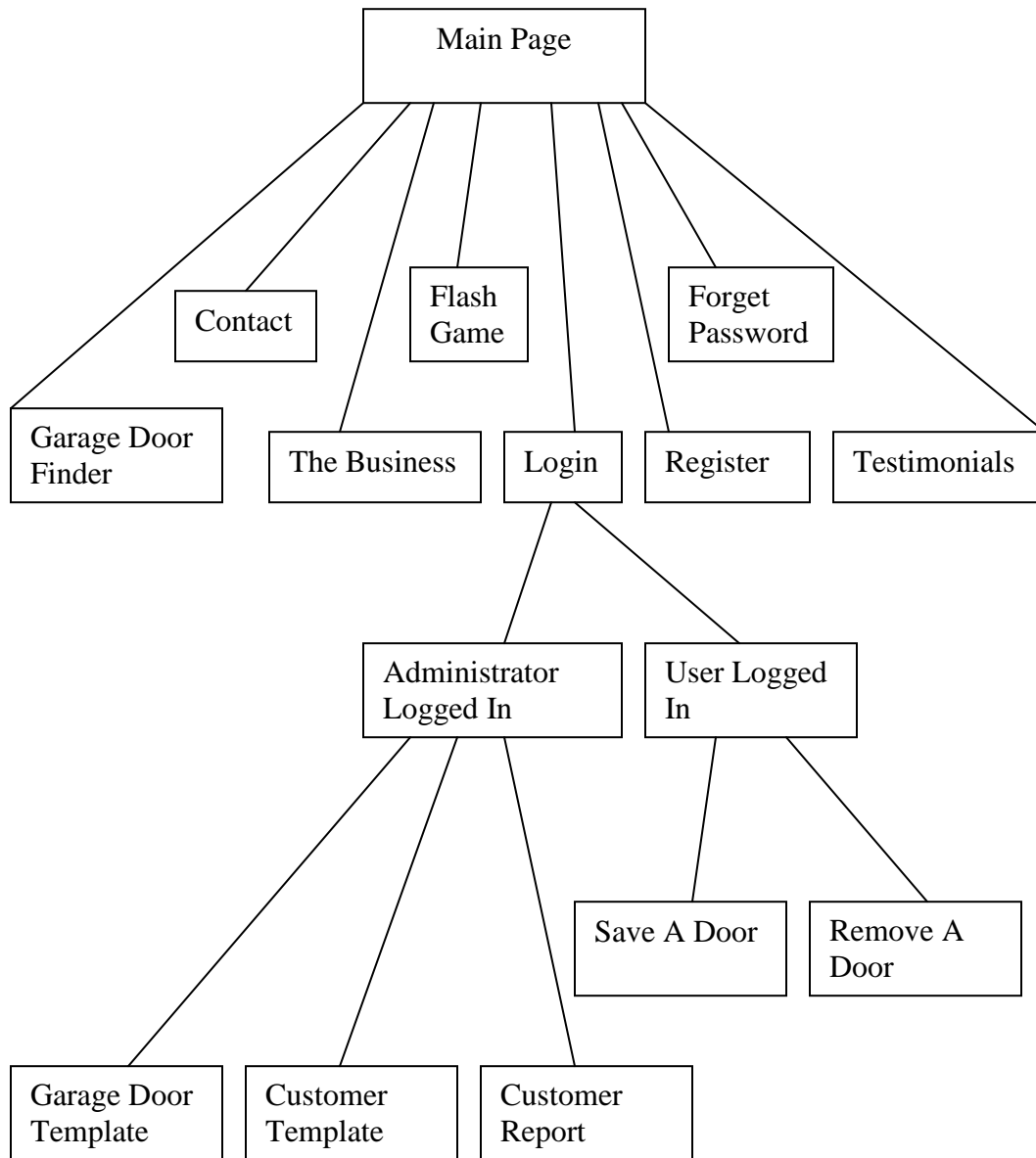


Figure 2. Bronson Door Company Web Site Outline

3. Deliverables

During the design phase of this project the following deliverables were defined:

- Client, user, and administrator interfaces
- Single authentication point
- Customer and garage door templates to allow the administrator to edit the database easily
- Access database used for storing garage door and customer information
- The database is a data source for the ASP.NET login, registration, customer template, user template, garage door finder and garage door saver pages.
- An entertaining and visually appealing flash game

4. Design and Development

The next sections describe the project's timeline, overall budget with hardware, software, and book costs.

4.1 Timeline

The project involved several challenges, learning mistakes/opportunities, and accomplishments. Below are my achievements of the Senior Design sequence.

4.1.1 Senior Design 1 Accomplishments

During my Senior Design 1 class I accomplished the following:

- Researched garage door Web sites
- Interviewed with the owner of the Bronson Door Company (2)
- Increased knowledge in ASP.NET, C#, and Flash
- Began Web site development
- Developed my proposal and presentation

4.1.2 Senior Design 2 Accomplishments

During my Senior Design 2 class I accomplished the following:

- Designed database
- Developed flash game
- Created user interface
- Prepared Design Freeze documentation and oral presentation

4.1.3 Senior Design 3 Accomplishments

During my Senior Design 3 class I accomplished the following:

- Completed game programming
- Tested site design
- Modified project as needed
- Completed documentation for the project
- Presented the final project

4.2 Budget

The budget for the project is shown in the table below. All software was paid for by academic licenses. The computer, scanner, and camera were all purchased prior to the project. Web hosting and domain name registration will take place after project completion.

Item	Cost
Macromedia Flash MX	\$489.00
Photoshop CS	\$580.00
Visual Studio .NET 2003	\$650.00
Microsoft Access 2003	\$194.99
Web Host Space /year Godaddy.com(4)	\$120.00
Domain Name Registration / year	\$9.00
Computer	\$500.00
Digital Scanner	\$250.00
Digital Camera	\$150.00
Actual Total	\$2942.99
My Total	\$900.00

Figure 3. Budget

Source: (1,4)

5. Proof of Design

The next section shows in detail how deliverables of the project were fulfilled and what challenges we encountered.

5.1 Interfaces

All interfaces of this web application allow a computer to display the interface when a web browser is connected to the Internet and the URL of the application is entered. The login allows for a user and administrator to access extra features.

5.1.1. Client Interface

The first interface that loads when the Web site is visited is the startup page. This page includes a user login and links to allow a user to navigate from page to page (see Figure 4).



Figure 4. Bronson Door Company Main Page

At the startup page a client can navigate to the garage door finder, interested, business, contact, testimonials, and flash game page. The garage door finder allows a client to scan the database to find the picture and information of the garage door(s) they are looking for. Each textbox labels information about each door and when scanned the information changes with the image (See Figure 5.).

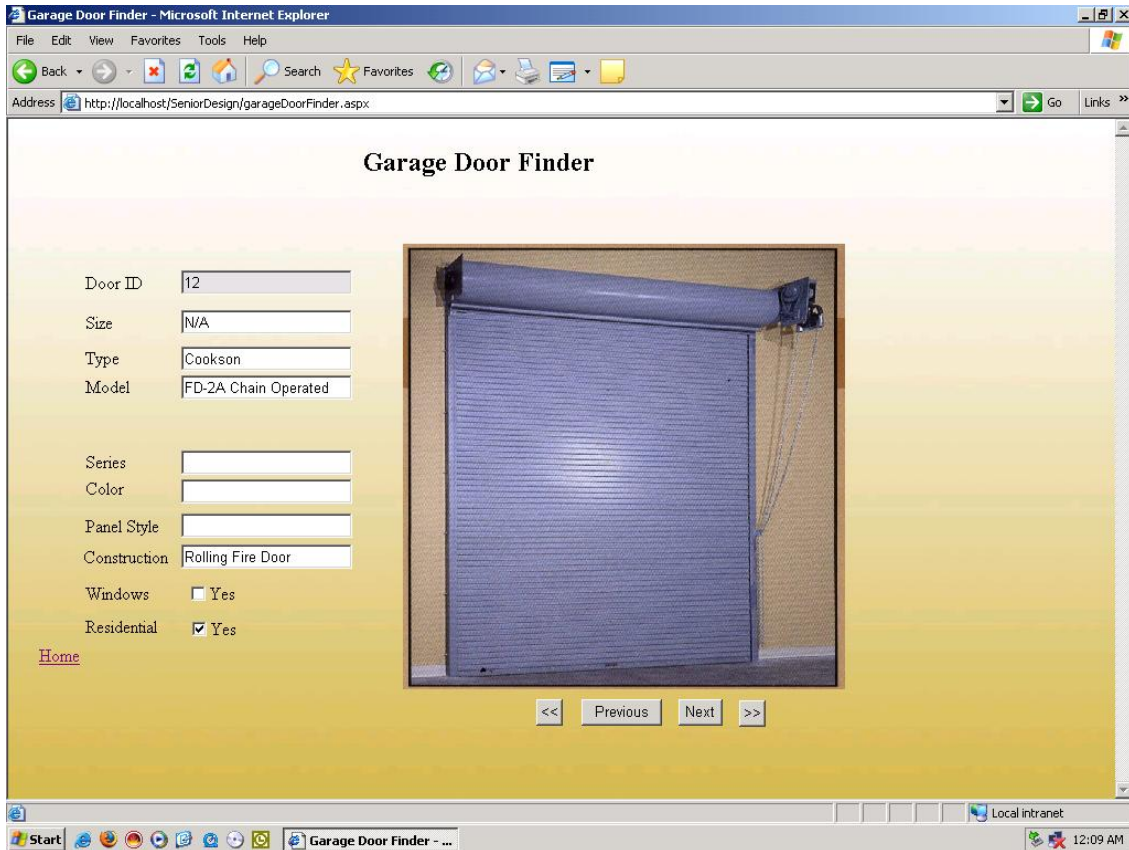


Figure 5. Garage Door Finder

5.1.2. User Interface

If a user likes a door and would like to save it to look at it later, then they can. At the startup page a new user must click on new user link under the login. The new user page allows the new user to enter their personal information and save it to the database. The user must at least leave at least their full name, email, user name and password. Once a user is entered in the database then they can login and be directed to a different page much like the garage door finder and save doors that they are interested in (See Figure 6.).

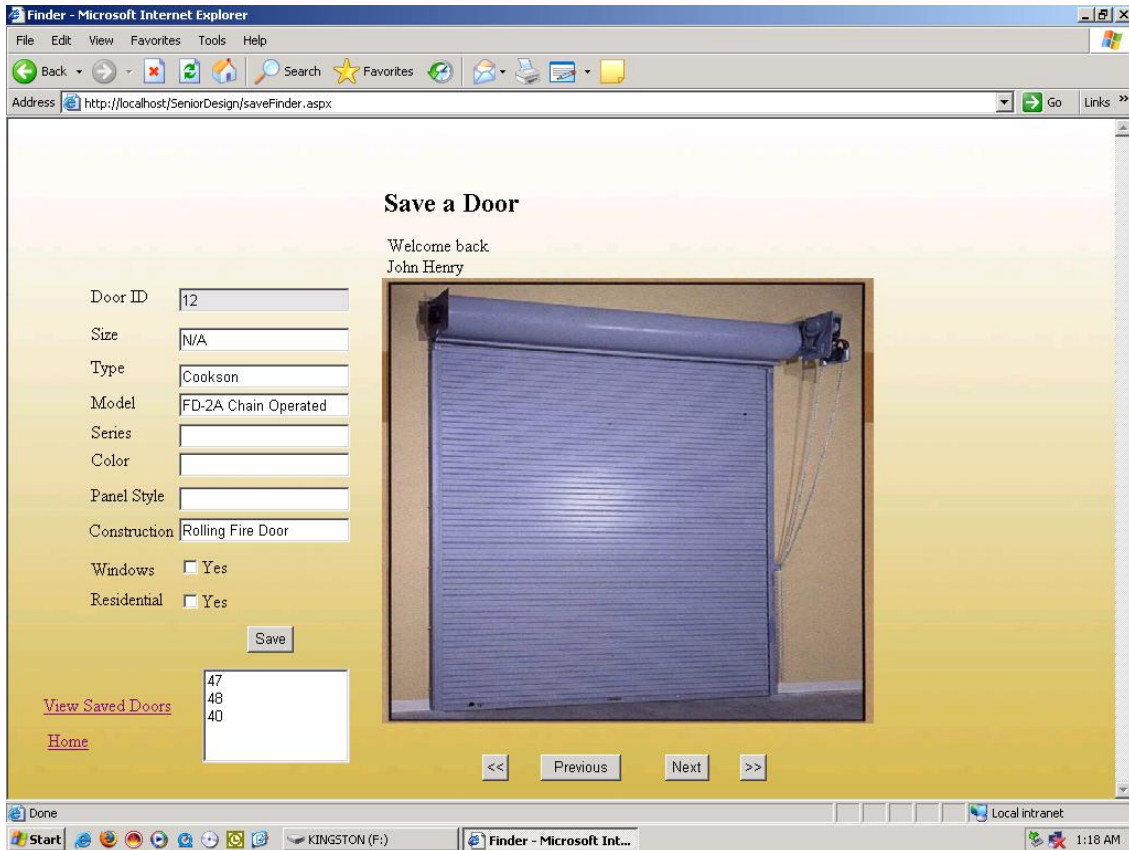


Figure 6. Save A Door

If the user forgets his or her password they can retrieve it by clicking the forget password link at the start up page. At the retrieve password page they can enter their email or username and click submit and an email will be sent to the email address they registered that includes their password (see Figure 7). The administrator can even use this email feature.

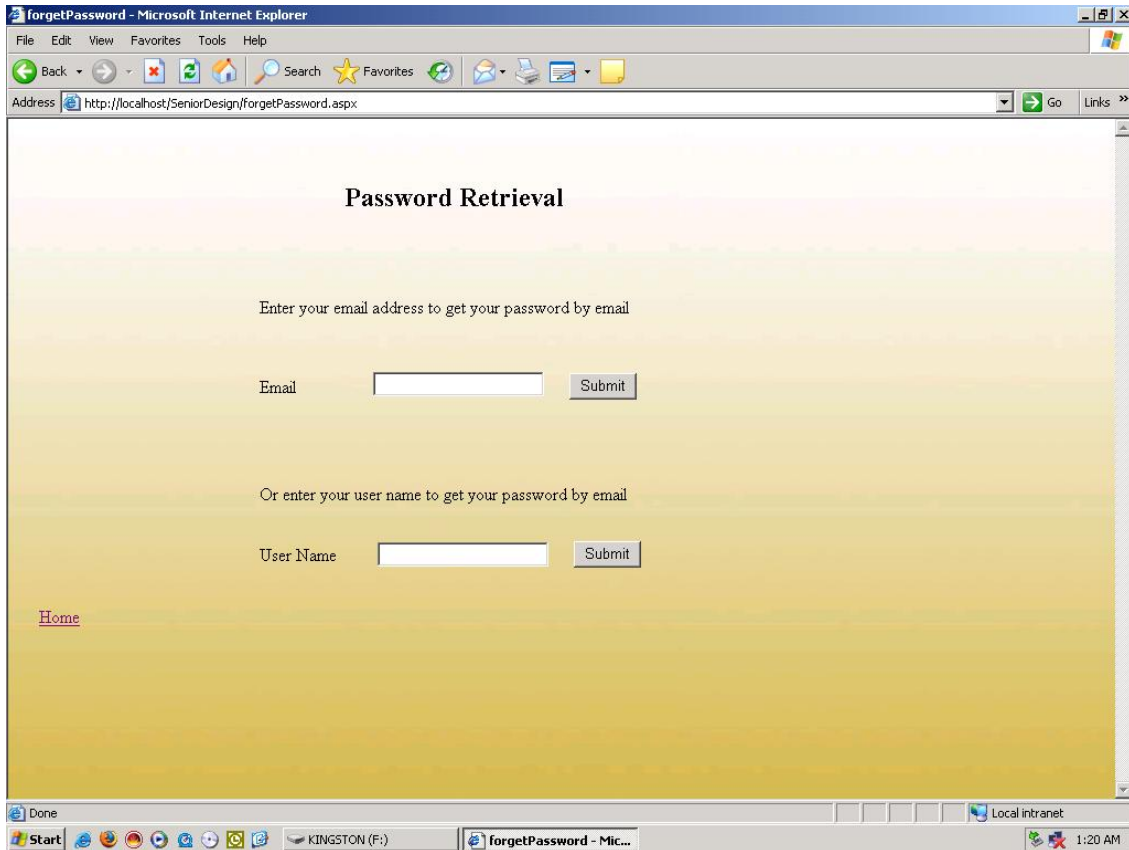


Figure 7. Password Retrieval

5.1.3 Administrator Interface

The administrator must login at the startup page in order to go to the administrator interface. This interface looks much like the garage door finder but with more options (see Figure 8.). These options are insert, remove, and update. Insert allows the administrator to insert a new row into the table, remove will remove a row, and update will change the data that the user specified for the row(s).

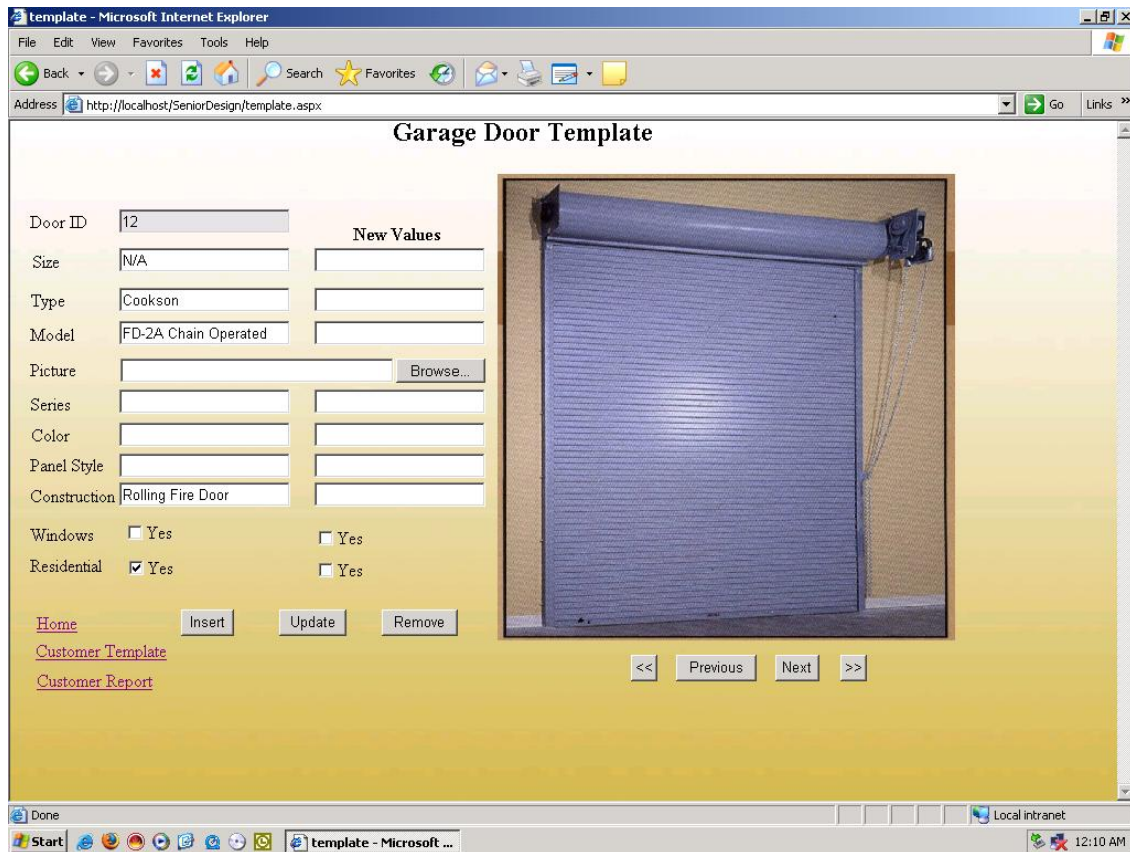


Figure 8. Garage Door Template

The administrator is able to modify the user table from an interface. They can remove any user from the database (see Figure 9). A customer report allows the administrator to view all customer information (see Figure 10). This is helpful for retrieving customer information.

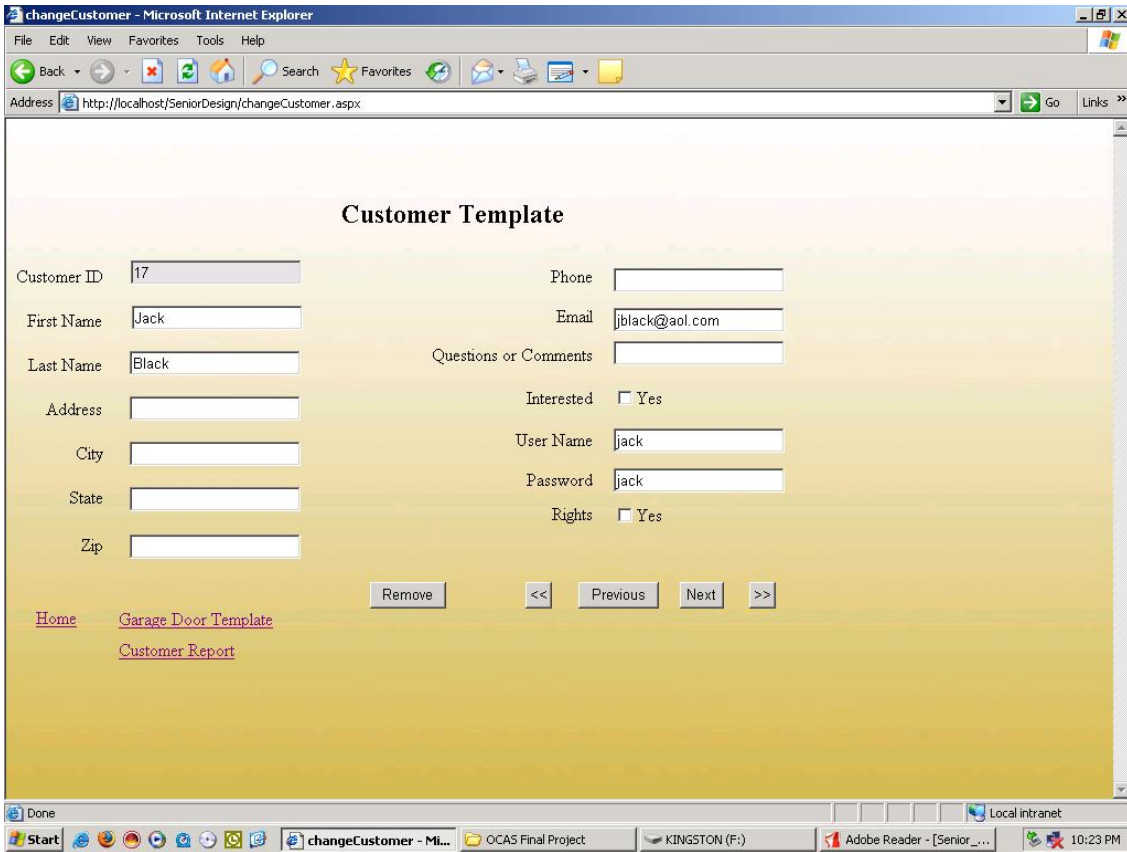


Figure 9. Customer Template

Customer ID	First Name	Last Name	Address	City	State	Zip Code	Phone	Email
17	Jack	Black						jblack@aol.com
18	John	Henry						jhen@aol.com
19	Clint	Holden						holdenct@email.uc.edu
20	Jack	Norman	123 West 5th St.	Cincinnati	OH	45202	513-123-3212	fred@aol.com

Figure 10. Customer Report

5.2 “Bronson Challenge” Flash Game

All users can access the “Bronson Challenge” flash game. This is a simple flash game that is designed to give the site some attention. All pictures were hand drawn using the mouse. The game uses the control key to shoot and the forward and backward keys to move. The purpose of the game is to shoot garage doors that are in your way until you reach the end of the level (See Figure 11.).

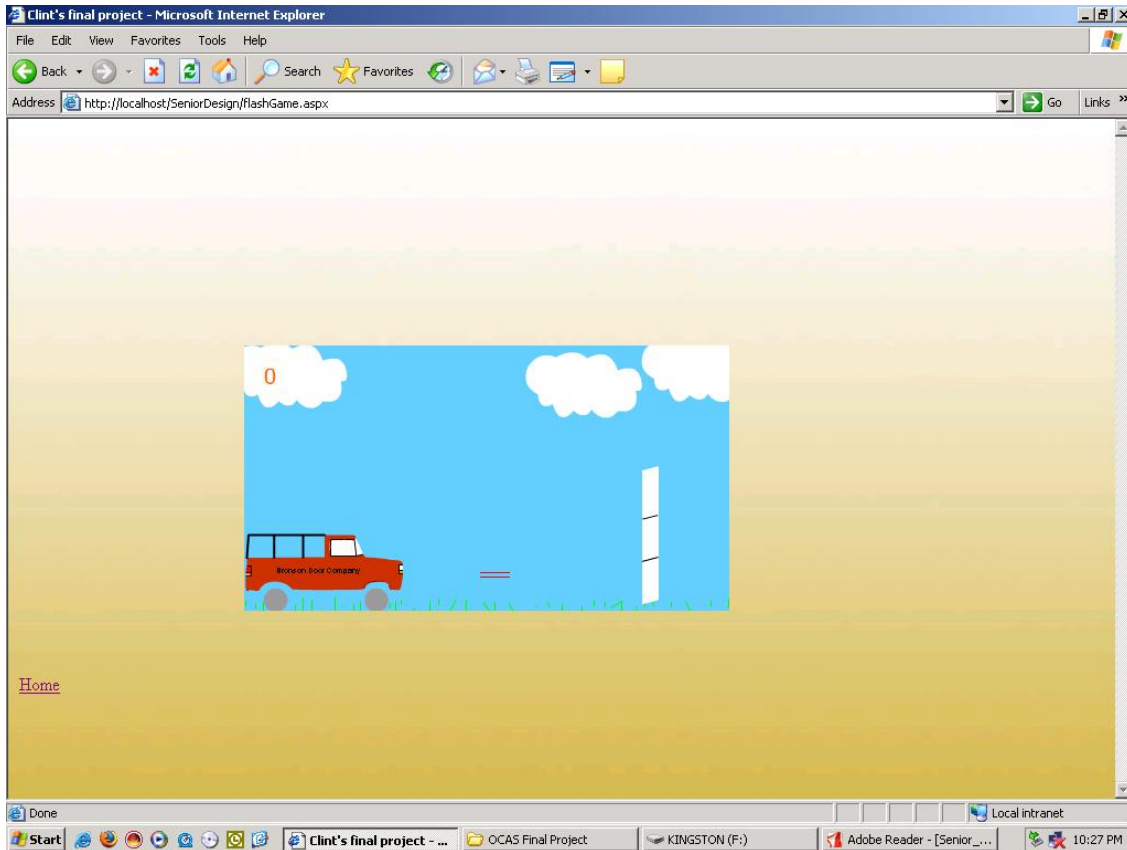


Figure 11. “Bronson Challenge” Flash Game

6. Testing Procedures

Three friends from school, my relative, and the Bronson Door Company owner, all tested the Bronson Door Company Web site. Only my relative tested the project before it was hosted because my project resides on my home computer. The other friends tried to break and crack into the website testing its security, error catching, and data validation.

7. Conclusions and Recommendations

7.1 Conclusions

In conclusion, this Web site should help with Brian’s advertisement and increase business. The Web site address will be posted on his truck doors, house sign, and phone

book, which will help get the word around. The site is easy to navigate and easy to learn allowing any user to use the site.

7.2 Recommendations

While working on this project I encountered many challenges. I recommend taking the programming sequence, server and client side web programming, database administration and any other web programming classes to overcome these challenges. Being somewhat interested with web programming, I believed that I could accomplish any task within my project. I actually took on more than I could handle. I didn't even know how to do most of the programming that I needed. So I researched a lot and learned the web programming that I needed to finish my project.

I learned web programming much easier by taking classes than on my own reading books and Web sites. It seems better to even out your workload within the time you have to finish your project. Follow a project timeline if you can, it will make life easier.

Appendix A.

Research Information

During research I discovered that I would use some ideas that attracted my eye from visiting garage door manufacturers' Web sites. Some of the ideas that I included were the Garage Door Finder and Save Door pages.

www.clopaydoor.com - I started using larger images on the Bronson Garage Door Web site after visiting this site. Most of the photos are of a door and a building structure. The design a door feature was interesting and gave me the idea of programming my Garage Door Finder (7).

www.overheaddoor.com - I tested the design a door feature on this site and found it very useful. Other features were more interesting too me though. These features were the customer registration/login and the "My Folder" feature. When a user registers and logs in, then they can save garage doors into their "My Folder." On the Bronson Door Company Web site a user registers and logs in, then they can save garage doors that saves as their preference in the server database (10).

Appendix B.

Project Timeline

Task	Start Date	End Date
Final proposal and presentation	5/16/05	6/16/05
Research Flash MX	5/7/05	5/22/05
Research ASP.NET	6/23/05	7/8/05
Develop Web site prototype	10/1/05	11/28/05
Create database prototype	10/1/05	11/28/05
Design freeze and presentation	10/15/05	11/28/05
Build, test, revise beta project	11/28/05	1/1/06
Build, test, revise final project	1/1/06	2/1/06
Host project on a server	2/1/06	2/7/06
Web site testing	2/7/06	2/20/06
Loose ends	2/20/06	3/1/06
Present final project	3/1/06	3/12/06

Appendix C.

Code Snippets

C1. Login Page Code Snippet

This is the code for the submit button on my main page. When a user clicks the submit button the username and password is compared to the username and password in the database. The password is encrypted in the database so the user types the decrypted password that is then encrypted and compared to the password in the database. The rights value determines if the user is an administrator or not.

```
private void Submit(object sender, System.EventArgs e)
{
    if (TextBox1.Text != "" && TextBox2.Text != "")
    {
        //using atbushCipher class for encryption

        atbushCipher ac = new atbushCipher();
        string pwd = ac.encrypt(TextBox2.Text.Trim());

        MakeConnection mc = new MakeConnection();

        //Check if username and password matches the
        database

        bool b = mc.CheckValidUser(TextBox1.Text, pwd);

        if (b == true)
        {
            this.Session["custID"] = mc.C;
            this.Session["fname"] = mc.F;
            this.Session["lname"] = mc.L;

            this.Session["uname"] = mc.UN;
            this.Session["pwd"] = mc.PWD;
            this.Session["rights"] = mc.R;
            this.Session.Timeout = 20000;

            //if rights are true, go to administrator page
            //else, go to user page, or else bad login

            if(mc.R == true)
            {
```

```

this.Response.Redirect("choiceForm.aspx");
                this.Session["idx"] = 0;
            }
            else

this.Response.Redirect("choiceForm2.aspx");
        }

        else

        {
            Label4.Text = "Please enter a correct
username and/or password.";
        }
    }
}

```

C2. Customer Registration Code Snippet

This code snippet shows the connection string, data added to a datarow from textboxes, and the database updated from the datarow. Encryption is used here, after the user types the password it is encrypted into the database. Textboxes are then cleared and ready for another user to enter information.

```

private void Submit(object sender, System.EventArgs e)
    {
        //Connecting to data source using a connection
        //string
        string connectionString =
@"Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=C:\Inetpub\wwwroot\SeniorDesign\SeniorDesign.mdb;";
        string sql = "SELECT * FROM Customers";

        OleDbConnection conn = new OleDbConnection();
        conn.ConnectionString = connectionString;

        if (conn.State == ConnectionState.Open )
        {
            conn.Open();
        }

        OleDbDataAdapter adapter = new OleDbDataAdapter(sql,
conn);

        OleDbCommandBuilder cmBuilder = new
OleDbCommandBuilder(adapter);

        DataSet dss = new DataSet("Customers");

        //fill data adapter
        adapter.Fill(dss, "Customers");
    }
}

```

```

//insert new row in datarow and include the data from
//the textboxes
DataRow row = dss.Tables["Customers"].NewRow();
row["fname"] = TextBox8.Text.ToString();
row["lname"] = TextBox7.Text.ToString();
row["address"] = TextBox6.Text.ToString();
row["city"] = TextBox5.Text.ToString();
row["state"] = TextBox1.Text.ToString();
row["zip"] = TextBox4.Text.ToString();
row["phone"] = TextBox9.Text.ToString();
row["email"] = TextBox10.Text.ToString();
row["question"] = TextBox11.Text.ToString();
row["interested"] = CheckBox1.Checked;
row["uname"] = TextBox2.Text.ToString();

//atbushCipher class encrypts, decrypts passwords
atbushCipher ac = new atbushCipher();
string pwds = ac.encrypt(TextBox3.Text.Trim());

row["pwd"] = pwds;

dss.Tables["Customers"].Rows.Add(row);

//update database from customer information
adapter.Update(dss, "Customers");

if (conn == null)
{
    if (conn.State == ConnectionState.Open)
    {
        conn.Close();
    }

    conn.Dispose();
}

//clear textboxes for next user
TextBox8.Text = "";
TextBox7.Text= "";
TextBox6.Text= "";
TextBox5.Text= "";
TextBox1.Text= "";
TextBox4.Text= "";
TextBox9.Text= "";
TextBox10.Text= "";
TextBox11.Text= "";
CheckBox1.Checked = false;
TextBox2.Text= "";
TextBox3.Text= "";

Label14.Text = "Customer Updated";
}

```

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