

# **L Hirth Construction Web site**

By

Jason Holt

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

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Date

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Prof. Annu Prabaakar, Faculty Advisor

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Date

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## **Abstract**

The L Hirth Construction Web site is a needed solution to the many requests of past, current, and future customers. In the past many customers have asked to have email correspondence. Potential customers have asked to be able to see past projects and be able to contact references. Having the Web site to send these past, current, and future customers to satisfies these needs. A new user can look around the site, but will need to setup their login to get full functionality. Their login information is stored in a My SQL database. Once logged in they can contact the company, and also any of the past customers who have made themselves a reference. They can see before and after pictures from past work. A user can also see and add testimonials about the company and their work. There are links provided to assist the customer in doing research for their current and future projects. This is all laid out in an easy to read, and simple to navigate Web site.

# **L Hirth Construction Web site**

## **1. Statement of the Problem**

There are many construction and remodeling companies. Most all of these companies have Web sites. Some sites are static and only offer little information about the type of work that the company offers. These sites usually represent the smaller companies. The larger companies have more functionality but are very impersonal. They offer the user ways to get more information but you have to contact them and wait to hear back for that information.

Many of my customers want to know information about my company and the different services that are offered. I have also been asked if I have pictures of my work. Others want to know if I have any references. I do have pictures of many projects I have done and also have customers that are willing to be references for me. Most all of my current and potential customers have Internet access. They want to be able to contact me through E-mail and even request that I E-mail my estimates to them. I need a good way to put all of this together.

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

All of these needs are taken care of with a Web site for the company. The Web site has a slide show on the opening page. MySQL database will track the users and all the photos. All of this is done with PHP scripting language. The final product is on a hosted Web server running Linux operating system. This site has a fresh clean look that makes things easy to find while being user friendly.

Some of the features of the site will be:

- The site shows the services that my company has to offer.
- It provides contact information including E-mail addresses and phone numbers for customers.
- It shows photos of the different jobs.
- It has testimonials from customers.
- It shows past customers who are willing to be references with any contact information for other potential customers to talk with them.
- It has an easy navigation bar.
- The site will be dynamic with the addition of new photos, customer testimonials, and any added services the company may add in the future. (4)

As the user navigates through the site the navigation bar remains in the same spot.

This will make it easier for the user to return to something they saw before or to pick a new topic to look at. The colors have been chosen so that text is easy to read.

## **2.1 User Profile**

There are three user roles for this Web site. They are a General User, an Authenticated User, and an Administrator. The individual roles are explained below.

### **2.1.1 General User**

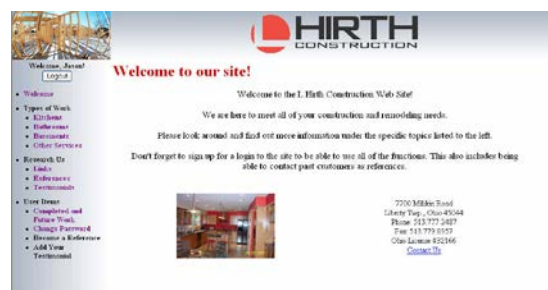
Before logging in a user will only be able to see thumbnail images of all the before and after photos. A general user can also see the links page to be able to start some of the research they might need for a future project. The user can also click a link to set up their log in account for authentication.



**Figure 1. General User Welcome Page**

### 2.1.2 Authenticated User

An authenticated user can do everything the general user can do. Once they log in with their own account they will be able to see all of the before and after pictures in full size, not just the thumbnails. They are also able to see the references page where they can see information from other customers that are willing to be contacted. When they are ready to be a reference there is a link so they can add their contact information. Next is the testimonials page. Here the user can read what other users have to say about the company. There is also a link to be able to add their comments. The user can change their password or request a new one if they have forgotten theirs. This user can also keep a list of future project they are interested in doing and are able to list all of past work for easy reference when looking into home equity or future resale.



**Figure 2. Authenticated User Welcome Page**

### 2.1.3 Administrator

The administrator can do and see all of the above and go to an administrator page with more tools. Here the administrator can manage the user database and the photo database. The stats page can be viewed to monitor the traffic to the site.



**Figure 3. Administrator Welcome Page**

## 2.2 Design Protocols

This Web site uses a simple but reliable and user-friendly layout for navigation. The page is divided into three sections. Down the left from top to bottom is the main navigation bar. It has a gray background to distinguish it from the rest of the page. All the links to the sub pages are listed here based on your user level. These levels are explained under the user profile section and laid out in the use-case diagram. Across the top of the remaining page is the title bar that displays the company logo. The background for the title bar as well as the third section is a textured tan color. The third section is the main part of the page that is used to display all of the requested information.

This Web site utilizes one database with multiple tables. It holds the users and their personal information as well as their interactive items. This includes their testimonials, reference information, and work lists. All the tables are linked based on the unique id number they receive when the user signs up for an account. Another table is

used to store the photos needed for the site. It also allows the choice of which photos will be used in the opening slide show.

### **3. Deliverables**

To provide a well-organized and complete project the following deliverables were defined in the design phase:

- Web site developed in HTML and PHP script.
- Databases in MySQL.
- Three levels of users (per Use-Case diagram).
- Role-specific navigation bar on left of every page.
- Ability for General user to:
  - View minimal site pages
  - See thumbnail images of photos
  - Use links page
  - Create own login account
- Ability for Authenticated user to:
  - Do anything a General user can
  - Click thumbnail to view larger images
  - View company references
  - View customer testimonials
  - Become a reference
  - Add their testimonial
  - Maintain future and completed project lists

- Change their password
- Ability for Administrator to:
  - Do anything a General & Authenticated user can
  - Manage user database from site
  - Manage photo database from site
  - View site statistics

## **4. Design and Development**

This section describes the projects timeline and overall budget including hardware and software.

### **4.1 Timeline**

This project was broken down and completed in three phases. The phases are Design (Senior Design I), Development & Design Freeze (Senior Design II), and Implementation (Senior Design III). The details about each phase are discussed below.

#### **4.1.1 Senior Design I Accomplishments**

In Senior Design I, I had to decide on the project that was to be completed. This includes all the criteria, layout, and an idea of the deliverables. This was then presented to a group of Professors working with Senior Design. They then decided if the project would be worthy of pursuing as my final project for the program. Below is a timeline of the major events in the Senior Design I section (See Figure 1.).

Item / Goal	Date to be completed by
Progress Report 1	Oct. 14, 2004
Problem/Need/Area of Inquiry	Oct. 21, 2004
First Proposal	Nov. 4, 2004
Progress Report 2	Nov. 4, 2004
Oral Presentation	Nov. 18, 2004
<b>Final Proposals with Power Point</b>	Dec. 2, 2004

**Figure 4. Senior Design I Timeline**

#### **4.1.2 Senior Design II Accomplishments**

In Senior Design II, I had to put the project together. This entailed the database and code of the Web site. By the end of this section of the project I had to have a working prototype and a final list of deliverables. This list would make up the final requirements for the project. The prototype of the project was presented to my advisor for approval so that I could move on to the final section of the project. Below is a timeline of the major events in the Senior Design II section (See Figure 2.).

Item / Goal	Date to be completed by
Register Domain Name	Dec. 10, 2004
Create email account for company employees	Jan. 6, 2006
Pages created with flow	Jan. 27, 2006
Create user database	Feb. 3, 2006
Sample text loaded to pages	Feb. 17, 2005
User can change password, enter reference info, Add testimonials	Mar. 24, 2006
Administrator can manage user database and View Web site statistics from site	Mar. 31, 2006
Clean up of prototype	Mar. 31, 2006
<b>Design Freeze</b>	Mar. 31, 2006
<b>Prototype done with paper</b>	Mar. 31, 2006

**Figure 5. Senior Design II Timeline**

### 4.1.3 Senior Design III Accomplishments

In Senior Design III, the project must be complete. This is to include all the items on the list of deliverables. The final project was presented to my advisor for final approval and completion of the Senior Design process. Below is a timeline of the major events in the Senior Design III section (See Figure 3.).

Item / Goal	Date to be completed by
Create photo database	May 5, 2006
Upload photos and link to pages	May 5, 2006
Administrator can manage photo database from site	May 5, 2006
Create photo slide show on opening page	May 5, 2006
Final Testing	May 12, 2006
Clean up	May 12, 2006
<b>Project ready, Tech Expo</b>	May 19, 2006
Final paper	May 31, 2006

**Figure 6. Senior Design III Timeline**

### 4.2 Budget

The budget for this project is shown in the table below. Many of the cost listed below were already incurred prior to the start of this project (See Figure 4.).

*Software:*

Photoshop CS (5)	\$650.00
Macromedia Dreamweaver MX (5)	150.00
GoDaddy Domain Registration (per year) (2)	16.00
GoDaddy hosting service w/ deluxe email (per year) (2)	60.00
MySQL – Part of hosting service (2)	0.00
PHP - Part of hosting service (2)	0.00
Software Total	\$876.00

*Hardware:*

Intel Pentium 4 - 2.8 Mg with 512 Mb memory, 17” monitor	\$1000.00
Adelphia Primer Internet service (1)	64.00
Cannon Digital Rebel Camera with 1 Gb CompactFlash memory card	1300.00
Hardware Total	\$2364.00

*Budget:*

Software Total	\$876.00
Hardware Total	2364.00
Budget Total	\$3240.00

**Figure 7. Budget**

## **5. Proof of Design**

This section shows in detail the layout and functionality of the Web site.

### **5.1 Welcome Page**

The Welcome page is the first page of the Web site to be seen when you load the site. You can also return to this page at any time by selecting Welcome on the menu bar on the left side of the page (See Figure 5). On this page also lists mailing address for the company, phone number, and the Contact Us link will open the default email program on the users machine and allow you to email the company.



**Figure 8. Welcome Page**

### **5.1.1 Cascading Style Sheets**

This main Welcome page, and all the pages, uses cascading style sheets for formatting and layout (See Appendix A). This allows a single reference to pull all of the formatting information including font, size, and color instead of coding it in every page.

### **5.1.2 Login**

The login portion of the window is at the top of the menu and is visible on all pages through out the site (See Appendix B). This allows users to login even if they are not on the Welcome page.

### **5.1.3 Web site Menu**

The Menu is what drives any Web site. The Menu here is visible at all times and stays on the left hand side to make it easy to find and navigate (See Appendix B).

### **5.1.4 Creating a User**

There are two ways to become a registered user of the Web site. The first way is that the user can create their own. If someone is looking at the site and would like to get full access all they have to do is click the register button and fill in the information. They can immediately login the site and a reminder email is set out to the address they provided. All of the information that is entered to receive a login is validated by a Java

script before it is stored in the MySQL database. The second way to create a login is through the Administrator account. Any user that has Administrator privileges can create a user account for a user. The user is still sent a reminder email to the email account provided. This is a help tool for the company. When the company gets a new client an account can be created for them. The password for their account is randomly generated for them. When the user logs in they can leave the password and continue to use it, or choose to change it to something easier to remember. The reminder email will go out and give them the login information for the site. This will prompt them to look at the site.

## **5.2 Types of Work**

The Types of Work section is set up to show off pictures of some of the different work performed by the company. It is broken into four sections. The first three are Kitchens, Bathrooms, and Basements. Remodeling these areas make up a large portion of the workload of the company. The fourth section is Other Services. This is where many of the other services the company offers will be placed.

The general user that is not logged in can view these pages and see the thumbnail picture. The user must login and be authenticated before they can click the thumbnail and see the full size version of the picture.

## **5.3 Research Us**

This section of the Web site is for the user to find out about the company and some of the products that are used.

### **5.3.1 Links**

The Links page is viewable to the General User. It is a standard links page that give access to many of the companies where a user can research the products that will be used for their upcoming projects.

### **5.3.2 References**

A user must be authenticated before they can view the References page. This page is where a new client can find the contact information of past customers who are willing to be references.

### **5.3.3 Testimonials**

The Testimonials page also requires you to be an Authenticated User to see it. This is where the user can look through to see what other people have to say about the company. Each posting is marked with who it was written by and when they wrote it.

## **5.4 User Items**

This section of the Web site is for the users to manage their accounts. The individual items are described below.

### **5.4.1 Work List**

On this page a user can add and follow projects they are doing. The Administrator to the site can also add details to this entry for the customer. This type of information will be the starting date of their project, estimated ending date, and quotes on cost to the customer for that project.

### **5.4.2 Change Password**

This page is were the user can change their password. If an Administrator creates the account, or at login the user selects that they have forgotten their password, a random

password is created for them. They can login and go here to change it to something that is easier for them to remember. The new password must still meet all of the password criteria used in creating their account.

### **5.4.3 Become a Reference**

This is where the user enters their contact information that is to be displayed on the References page. This information is independent of their user login information. The customer can also add things like the best days or time of day to be contacted.

### **5.4.4 Add Your Testimonial**

A customer can add comments about the company or its employees that will be displayed on the Testimonials page of the site.

## **5.5 Administrator Page**

This is the page the Administrators can use to do the more common items to manage the site. The User Admin Page is where the list of users is displayed. By clicking on a user in the database it will pull up the items for that user. The Administrator can grant or deny access to the site, make that user an Administrator, set the users password, set the users email address, and edit that users Work List. Stats Page is where you can view all of the logged information about the traffic the site is seeing. The Add New User page is where the Administrator can create a new user account for someone. Testimonials Admin can be used to view the Testimonials table in the database. The Administrator can also delete any testimonial that uses any inappropriate language, or inappropriate subjects. The References Admin displays the references table in the database. Here an entry can be deleted in case a user wishes to no longer be contacted. New Picture Set is

where all the photos are uploaded to the site database, and Delete Picture Set can remove any of the photo sets on the site.

## **6. Testing Procedures**

In the development of this Web site each page references a style sheet to keep all text and colors consistent throughout the site. Each sub-page was created and tested individually. Then the link was created on the main page. Then the interaction with that page and the whole site were checked. If the page creates or updates fields in the database, this was checked to make sure it was writing the correct data, and not allowing incorrect data to be stored.

## **7. Conclusion**

This project solves the many needs of L Hirth Construction. The Web site is easy to navigate and easy to maintain. It provides a way to showcase past work to new customers. Potential customers can see what past customers have to say about their experience and can contact those willing to be references for the company. The project was written in PHP 5 with a MySQL database. The budget came in at \$3240.00 and a yearly renewal for registration and hosting of \$76.00. This project fulfilled all of the Design Freeze deliverables. All features were tested to ensure the usability of the final product.

# Appendix A

## Cascading Style Sheets

### A 1. Content Style Sheet

```
BODY
{
    /*background: url("../images/bback.gif");
    background-repeat: repeat; */
    background-color:#ffffff;
}

.content-header-text
{
    position: absolute;
    top: 5px;
    left: 5px;
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 24pt;
    color: #CC0000;
    z-Index: 1;
    white-space: nowrap;
}

.content-text
{
    position: absolute;
    top: 40px;
    left: 34px;
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: normal;
    font-size: 14pt;
    color: #000000;
}

.content-sub-text
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: normal;
    font-size: 14pt;
    color: #000000;
}

A:Link.content-link
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 10pt;
}
```

```

        color: #001940;
    }

A:Active.content-link
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 14pt;
    color: #0000ff;
}

A:Visited.content-link
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 14pt;
    color: #001940;
}

A:Hover.content-link
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 10pt;
    color: #FF0000;
}

DIV.image-place-holder
{
    /*height: 150px;
    width: 150px;*/
    overflow: hidden;
    text-align: center;
    vertical-align: middle;
}

#upperleft-corner
{
    position: absolute;
    top: 0;
    left: 0;
    z-index: 0;
}

```

## A 2. Frame Style Sheet

```

BODY
{
    background-color: #FFFFFF;
}

```

```
A:Link
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
    color: #000000;
    text-decoration: none;
}

A:Active
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
    color: #000000;
    text-decoration: none;
}

A:Visited
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
    color: #800080;
    text-decoration: none;
}

A:Hover
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
    color: #ff0000;
    text-decoration: none;
}

.menu-text
{
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
    color: #000000;
}

.nav-row-parent
{
    list-style-position: outside;
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
}
```

```
    color: #000000;
    text-decoration: none;
    margin-top: 10px;
}
.nav-row-child
{
    list-style-position: outside;
    position: relative;
    left: 20px;
    font-family: "Times New Roman";
    font-style: normal;
    font-weight: bold;
    font-size: 11pt;
    color: #000000;
    text-decoration: none;
}
```

# Appendix B

## B 1. Login Frame

```
<?php
    //starts the php session for logins
    session_start();
?>
<!-- Login -->
<HTML>
<!--HTML Header Definition-->
<HEAD>
    <LINK HRef='styles/framestyles.css' Rel='StyleSheet' Type='Text/css'></LINK>
    <SCRIPT Language='JavaScript' Src='../scripts/sitescripts.js'></SCRIPT>
</HEAD>
<BODY>
    <TABLE width="100%" height="100%">
        <TR>
            <TD align="center" valign="middle">
                <?php if(isset($_SESSION['loggedIn'])&&$_SESSION['loggedIn']==true) {?>
                    <!-- Logged In -->
                    <b>Welcome, <? echo $_SESSION['user_fname'] ?>!</b> <br>
                    <input type="button" value="Logout"
onClick="top.location.href='scripts/logout.php'">
                    <? } else { ?>
                    <!-- Not Logged In -->
                    <input type="button" value="Login"
onClick="top.frames('main').location.href='sitepages/login.php'"><BR><BR>
                    <a href="sitepages/register.htm" target="main">Register</a><BR>
                    <a href="sitepages/whyregister.htm" target="_blank"><font size="-2"><font
color="#0000FF">Why register?</font></a> <br>
                    <? } ?>
                </TD>
            </TR>
        </TABLE>
</body>
</html>
```

## B 2. Web site Menu

```
<?php
//start session for logins
session_start();
require("scripts/phpFunctions.php");
?>
<!--Site Menu-->
<HTML>
<!--HTML Header Definition-->
<HEAD>
    <LINK HRef='styles/framestyles.css' Rel='StyleSheet' Type='Text/css'></LINK>
    <SCRIPT Language='JavaScript' Src='scripts/sitescripts.js'></SCRIPT>
    <style>
```

```

BODY
{
    /*background-image: url('images\menu_bg.jpg');
    background-repeat: repeat-x;*/
    background-image: url('images\menu_bg_horiz.jpg');
    background-repeat: repeat-y;*/
    background-color: #FFFFFF;
}
</style>
</HEAD>
<!--HTML Body Definition-->
<BODY>
<TABLE width="100%">
<TR>
<TD align="center" valign="middle">
<?php if(isset($_SESSION['loggedIn'])&&$_SESSION['loggedIn']==true) {?>
<!-- Logged In -->
<b>Welcome, <? echo $_SESSION['user_fname'] ?>!</b> <br>
<input type="button" value="Logout"
onClick="top.location.href='scripts/logout.php'">
<? } else { ?>
<!-- Not Logged In -->
<input type="button" value="Login"
onClick="top.frames['main'].location.href='sitepages/login.php'"><BR><BR>
<a href="sitepages/register.htm" target="main">Register</a><BR>
<a href="sitepages/whyregister.htm" target="_blank"><font size="-2"><font
color="#0000FF">Why register?</font></a> <br>
<? } ?>
</TD>
</TR>
<tr><td>
<div style="position:relative;left:-20px;">
<?
if(!isLoggedIn())
{?>
<!-- BELOW ARE LINKS FOR USERS WHO ARE NOT LOGGED IN -->
<ul>
<li class="nav-row-parent"><a href="sitepages/Welcome.php"
target="main">Welcome</a></li>
<li class="nav-row-parent">Types of Work</li>
<li class="nav-row-child"><a href='sitepages/Kitchens.php'
target='main'>Kitchens</a></li>
<li class="nav-row-child"><a href='sitepages/Bathrooms.php'
target='main'>Bathrooms</a></li>
<li class="nav-row-child"><a href='sitepages/Basements.php'
target='main'>Basements</a></li>
<li class="nav-row-child"><a href='sitepages/OtherServices.php' target='main'>Other
Services</a></li>
<!--<li class="nav-row-parent"><a href="sitepages/pictures.php"
target="main">Pictures</a></li-->
<li class="nav-row-parent"><a href="sitepages/Links.htm"
target="main">Links</a></li>
</ul>
<!-- END LINKS FOR NON-LOGGED IN USERS -->
<?
}

```

```

else
{ ?>
    <!-- BELOW ARE LINKS FOR LOGGED IN USERS -->

    <ul>
    <li class="nav-row-parent"><a href="sitepages/Welcome.php"
target="main">Welcome</a></li>
        <li class="nav-row-parent">Types of Work</li>
        <li class="nav-row-child"><a href='sitepages/Kitchens.php'
target='main'>Kitchens</a></li>
        <li class="nav-row-child"><a href='sitepages/Bathrooms.php'
target='main'>Bathrooms</a></li>
        <li class="nav-row-child"><a href='sitepages/Basements.php'
target='main'>Basements</a></li>
        <li class="nav-row-child"><a href='sitepages/OtherServices.php' target='main'>Other
Services</a></li>
        <li class="nav-row-parent">Research Us</li>
        <li class="nav-row-child"><a href="sitepages/Links.htm"
target="main">Links</a></li>
        <!--<li class="nav-row-child"><a href="sitepages/pictures.php"
target="main">Pictures</a></li>-->
        <li class="nav-row-child"><a href="sitepages/References.php"
target="main">References</a></li>
        <li class="nav-row-child"><a href="sitepages/testimonials.php"
target="main">Testimonials</a></li>
        <li class="nav-row-parent">User Items</li>
        <li class="nav-row-child"><a href="sitepages/user.worklist.php" target="main">Work
List</a></li>
        <li class="nav-row-child"><a href="sitepages/user.changepassword.php"
target="main">Change Password</a></li>
        <li class="nav-row-child"><a href="sitepages/user.becomereference.php"
target="main">Become a Reference</a></li>
        <li class="nav-row-child"><a href="sitepages/user.addTestimonial.php"
target="main">Add Your Testimonial</a></li>
    <!-- END LINKS FOR LOGGED IN USERS -->
    <?
        if(isAdmin())
    { ?>
    <!-- BELOW ARE LINKS FOR ADMINS -->
    <li class="nav-row-parent"><a href="admin/admin.php" target="main">Admin
Home</a></li>

    <!-- END LINKS FOR ADMINS -->

    <?
        } ?>
    </ul>
    <?
        } ?>
    </div>
</td></tr>
</TABLE>
</BODY>
</HTML>

```

## Appendix C

### Validation Java Script

```
var emailExp = /^[a-z][a-z_0-9\-\.\+@[a-z_0-9\-\.\+\.]{2,3}]$/i
var phoneExp = /^d{10}$/
var lowerAlpha = /[a-z]/
var upperAlpha = /[A-Z]/
var digitExp = /^d/
var zipCodeExp = /^d{5}$/

function validEmail(str)
{
    return emailExp.test(str);
}

function validPhone(str)
{
    str = stripNonDigits(str);
    return phoneExp.test(str);
}

function stripNonDigits(str)
{
    return str.replace(/[^0-9]/g, "");
}

function validPassword(str)
{
    return str.length >= 6 && lowerAlpha.test(str) && upperAlpha.test(str) && digitExp.test(str);
}

function validZipCode(str)
{
    return zipCodeExp.test(str);
}

function isNumberInt(str)
{
    return (!isNaN(parseInt(str))) && parseInt(str) == parseFloat(str);
}
```

## References

1. Adelphia. <http://www.adelphia.net/>. November 2, 2004.
2. Go Daddy Software, Inc. <http://www.godaddy.com/gdshop/default.asp>. October 4, 2004.
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4. PHP. <http://www.php.net/>. October 8, 2004.
5. Pricewatch. <http://www.pricewatch.com/>. November 2, 2004.