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Criterion C: Product Development

Techniques and tools used to develop the website
- PHP & SQL
- HTML, CSS, and JavaScript
- Bootstrap framework
- UniServer Zero XI

I started the website by building its framework, the database. For a forum, which consists of almost only user created content the database is main component that sculps how the logic of the site is implemented. I used phpMyAdmin for the database, which uses SQL. The database consists of five tables, categories, messages, topics, posts, and users, which are the dynamic components users can interact with. The "user" table hold a variety of information, like username, password, id number, and profile info.

#	Name	Type	Collation	Attributes	Null	Default	Extra
1	id	int(11)			No	None	AUTO_INCREMENT
2	username	varchar(255)	utf8_general_ci		No	None	
3	password	varchar(255)	utf8_general_ci		No	None	
4	email	varchar(255)	utf8_general_ci		Yes	NULL	
5	avatar	tinytext	utf8_general_ci		Yes	NULL	
6	signature	tinytext	utf8_general_ci		Yes	NULL	
7	name	tinytext	utf8_general_ci		Yes	NULL	
8	bio	varchar(255)	utf8_general_ci		Yes	NULL	
9	rank	int(4)			No	0	

To register a new user a person must enter a username(that is not already in use) and a valid password(six or more characters).

Username: Test123
Password: ••••••
Register

The password is then hashed(for security) and a new user is created in the database.

```php
<?php
session_start();
include_once("connect.php");
if ($_POST['username']!=""  && $_POST['password']!=""){
    $username = $_POST['username'];
    $input_pass = $_POST['password'];
    $password = hash('sha256', $password.SALT);
    $sql2 = "SELECT * FROM users WHERE username='".$username."' LIMIT 1";
    $res2 = mysql_query($sql2) or die(mysql_error());
    if(mysql_num_rows($res2) > 0){
        echo "that username exists <a href='register.php'>GO BACK</a>";
    }else if(strlen($username)<6 || strlen($input_pass)<6){
        if(strlen($username)<6){
            echo "please enter a username longer than 6 characters | ";}
        if(strlen($input_pass)<6){
            echo "please enter a password longer than 6 characters | ";}
        echo "<a href='register'>GO BACK</a>";
    }else{
        $sql = "INSERT INTO users
        (id, username, password, email, avatar, signature, name, bio, rank) VALUES
        (NULL, '".$username."', '".$password."', NULL, NULL, NULL, NULL, NULL, '0')";
        $res = mysql_query($sql) or die(mysql_error());
        header("Location: index");
    }
    exit();
}else{
    echo "please enter a username and password";
    include_once("register");
}
?>
```

	id	username	password
☐ 🖉 Edit ⬛ Copy ⊖ Delete	18	testuser2	b0847cadf967755e94c8a3ea8a405df2ce296c8bceb5ed36fe...
☐ 🖉 Edit ⬛ Copy ⊖ Delete	20	VMorris	b0847cadf967755e94c8a3ea8a405df2ce296c8bceb5ed36fe...
☐ 🖉 Edit ⬛ Copy ⊖ Delete	19	ScottR	b0847cadf967755e94c8a3ea8a405df2ce296c8bceb5ed36fe...
☐ 🖉 Edit ⬛ Copy ⊖ Delete	21	ckaitz	b0847cadf967755e94c8a3ea8a405df2ce296c8bceb5ed36fe...
☐ 🖉 Edit ⬛ Copy ⊖ Delete	22	Test123	b0847cadf967755e94c8a3ea8a405df2ce296c8bceb5ed36fe...

Users can not log in with their accounts, which will give them new pages displayed in the navbar which are specific for accounts

Test123   ••••••   Log In   Register

Home   Forum

You are logged is as Test123　Logout

Home　Forum　Profile　Settings　Messages (0)

The forum is the main feature of the site. It is divided into categories of discussion.

You are logged is as Test123　Logout

Home　Forum　Profile　Settings　Messages (0)

Testing - category for testing the site

Computer Science Discussion - Discuss and exchange code

In each category there are topics that are created by users and can be replied to. The topics are displayed using a table that organizes them in order of most recently replied to. However "Pinned" topics, often reserved for board rules always appear first and are marked with 📌 .

You are logged is as Test123　Logout

Home　Forum　Profile　Settings　Messages (0)

Click Here To Create A Topic

Topic Title	Last User	Replies	Views
📌 testpin Posted by: on Oct 9, 2014 1:47pm	testuser2	24	156
hello Posted by: on Oct 21, 2014 2:11pm	Test123	3	10
im in physics Posted by: on Dec 22, 2014 12:03pm	ckaitz	1	7
Hello im in class Posted by: ckaitz on Mar 18, 2015 8:16am	ckaitz	0	1

```
        while ($row = mysql_fetch_assoc($res2)) {
            // Assign local variables from the database data
            $tid = $row['id'];
            $title = "";
            if ($row['pinned'] > 0)
                $title .= "<span class='glyphicon glyphicon-pushpin'>&nbsp</span>";
            $title .= $row['topic_title'];
            $views = $row['topic_views'];
            $date = $row['topic_date'];
            $creator = $row['topic_creator'];
            // Check to see if the topic has ever been replied to
            if ($row['topic_last_user'] == "") { $last_user = getusername($creator); } else {
$last_user = getusername($row['topic_last_user']); }
            // Append the actual topic data to the $topics variable
            $topics .= "<tr>
                            <td>
                                <a href='view_topic?cid=".$cid."&tid=".$tid."&pg=".$pg."'>".$title.
"</a>
                                <p>Posted by: ".getusername($creator)." on ".convertdate($date)."
</p>
                            </td>
                            <td>".$last_user."</td>
                            <td>".topic_replies($cid, $tid)."</td>
                            <td>".$views."</td>
                        </tr>
                        ";
        }
```

Each category displays all topics with a category id equal to its own. Each topic displays all posts with a category id and topic id equal to its own. If a topic has more than 10 post it will use pagination to display 10 replies on each page. The amount of pages needed is determined by dividing the amount of replies by 10 replies per page, and rounding that number up. If the user is on the first page the last page button doesn't appear and if the user is on the last page the next page button doesn't appear. If there is only 1 page no buttons appear.

```
//Get amount of pages of the topic
$numOfPages = ceil($row_rowCount['total']/10);
if ($numOfPages>1){
    //creates bottom page links
    echo "<nav><ul class='pagination'>";
    //makes back page button
    if ($pg>1){
        $back = $pg-1;
        echo "<li><a href='view_topic?cid=".$cid."&tid=".$tid."&pg=".$back."'>&laquo;</a></li>";
    }
    //display buttons for each page
    for ($num=1; $num <= $numOfPages ; $num++ ){
        if ($pg == $num){
            echo "<li class='active'><a href='view_topic?cid=".$cid."&tid=".$tid."&pg=".$num."'>".$num."</a></li>";
        }else{
            echo "<li><a href='view_topic?cid=".$cid."&tid=".$tid."&pg=".$num."'>".$num."</a></li>";
        }
    }
    //makes foward button
    if ($pg < $numOfPages){
        $foward = $pg+1;
        echo "<li><a href='view_topic?cid=".$cid."&tid=".$tid."&pg=".$foward."'>&raquo;</a></li>";
    }
    echo "</ul></nav>";
}
```
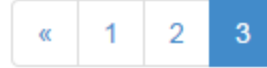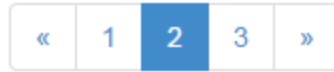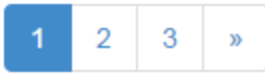
When a user replies to a topic they are prompted with a "SCEditor" text field, this allows users to easily create posts with different fonts, colors, sizes, embedded pictures and videos, and text formating. The editor converts this into HTML, which is then displayed when viewing a topic.

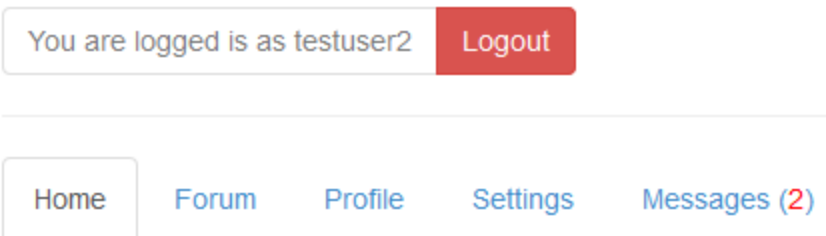

```
<div id="content">
<form action="post_reply_parse" method="post">
<p>Reply Content</p>
<textarea name="reply_content" rows="10" cols="150"></textarea>
<br /><br />
<input type="hidden" name="cid" value="<?php echo $cid; ?>" />
<input type="hidden" name="tid" value="<?php echo $tid; ?>" />
<input type="submit" name="reply_submit" value="Post Your Reply" />
</form>
```
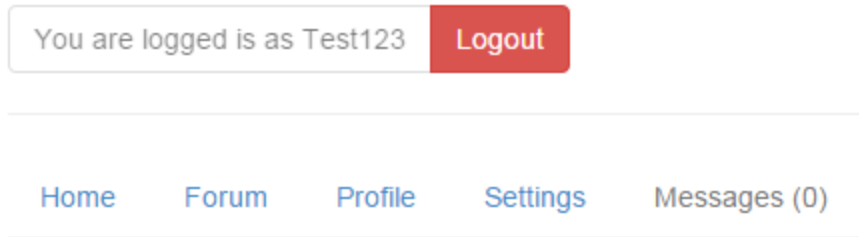
An important feature for forums is the ability for users to send private messages to each other. If a user has a message it is displayed in the navbar along with how many messages a user has. if there are no messages sent to a user the button to go to the messages page is not clickable.

You are logged is as Test123   Logout

Home   Forum   Profile   Settings   Messages (0)

You are logged is as testuser2   Logout

Home   Forum   Profile   Settings   Messages (2)

```
if ($msg_num > 0){$msg_num = "<font color='#FF0000'>".$msg_num."</font>";}
else{$messages = "disabled";
$messages_link = "#";}
```

For the design and layout of the site I used the Bootstrap framework which gives many features for website elements. It is used on many professional websites and is a standard in website design. One of its main features is the ability to scale elements on the page base on the size of the screen it is being viewed on. This allows for the same site to be easily displayed on mobile phones along with desktops.

```
<div class class="container">
<div class="row">
<div class="col-lg-8 col-lg-push-2 col-md-9 col-md-push-1">
```
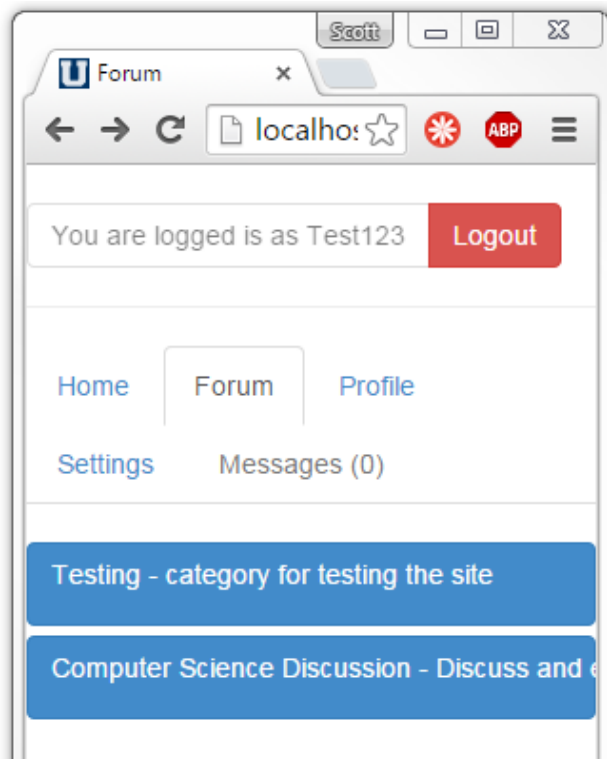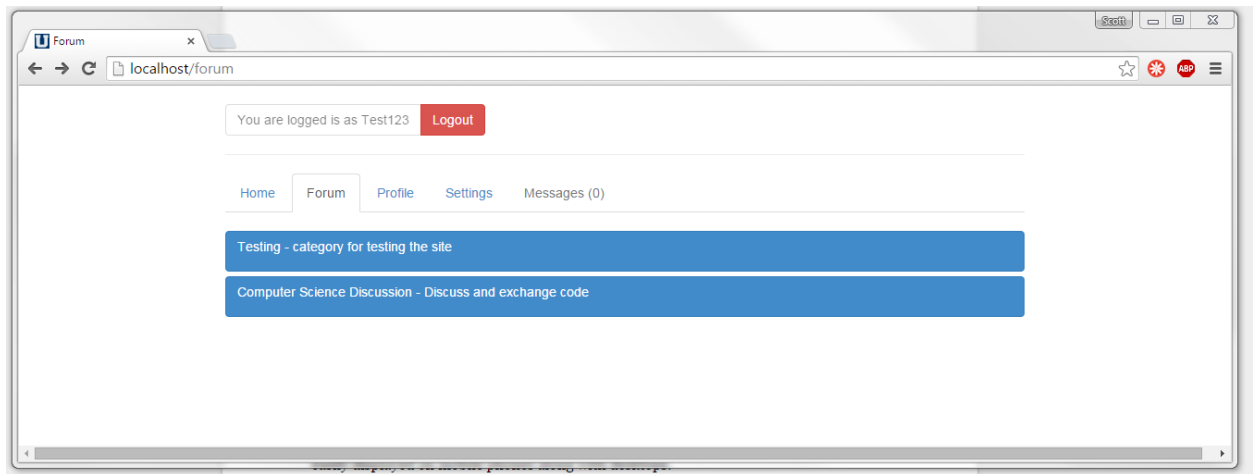
Bootstrap was also used for the buttons which can be separated, displayed together in groups, have drop down menus and have text fields.