

# CS2102 Project Report

Social Network - yourspace

*yourspace is a social networking site that enables users to create, find and join groups of their own interest.*

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## 1. Introduction

yourspace is a social networking site that enables users to create, find and join groups of their own interest. Within the interest groups, members can discuss and network with one another through posts. The built-in catalogue enables searching of groups and users.

### 1.1 Design

The main concept behind the design of yourspace is to keep the web interface simple to navigate, fulfil user requirements of a social networking site (create and edit profile/groups, search for users/group, and post text on the group page) and secure to prevent information leaks.

The design of the system would require three main components namely the database design, database server and webpage. The database design includes the database schema and ER-diagram which will dictate the structure of the database. The database server implemented is MySql which is a relation database management system (RDBMS) and the webpage is hosted on Apache locally. The webpage is designed using HTML, CSS, JavaScript and PHP.

#### 1.1.1 Design Specifications

• • •

##### Database Server:

MySQL 5.5.16 (RDBMS)

##### Web Server:

Apache 2.2.21

##### Web Server language:

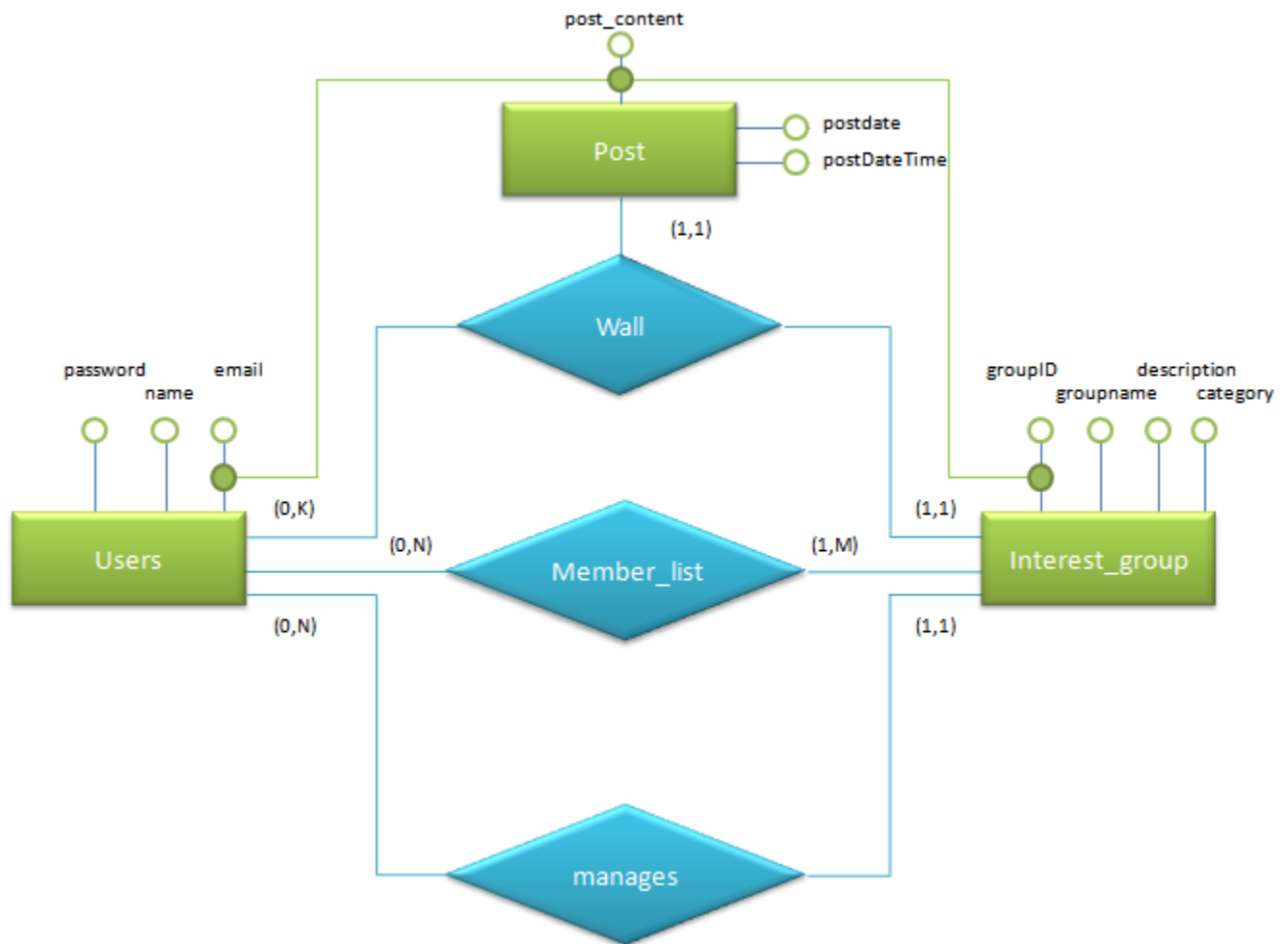
HTML  
CSS  
JavaScript  
PHP

##### Web Server Package Installer:

XAMPP 1.7.7

## 2. Database Design

### 2.1 Entity-Relationship Diagram



## 2.2 Entities

users	
Attribute	Domain
name	Varchar(128)
email ( <b>Primary Key</b> )	Varchar(128)
password	Varchar(64)

interest_group	
Attribute	Domain
groupname	varchar(128)
description	varchar(255)
groupID ( <b>Primary Key</b> )	Int(5)
category	varchar(10)

post	
Attribute	Domain
member_email_address ( <b>Primary Key</b> )	varchar(128)
post_content	varchar(255)
groupID ( <b>Primary Key</b> )	Int(5)
postDateTime	timestamp
postdate	time
postID( <b>Primary Key</b> )	Int(6)

## 2.3 Relationships

manages	
Attribute	Domain
managerID	varchar(128)
groupID	Int(5)

members_list	
Attribute	Domain
Member_email_address	varchar(128)
groupID	Int(5)

Note: As post is a weak entity, the one-to-one relation it has with wall is represented by the post schema.

## 2.4 Database Schema (DDL code)

```
DROP TABLE IF EXISTS post;
```

```
DROP TABLE IF EXISTS members_List;
```

```
DROP TABLE IF EXISTS manages;
```

```
DROP TABLE IF EXISTS interest_group;
```

```
DROP TABLE IF EXISTS users;
```

```
CREATE TABLE users(  
password VARCHAR(128) NOT NULL,  
email VARCHAR(64) PRIMARY KEY,  
name VARCHAR(128) NOT NULL,  
photoURL VARCHAR(255)  
);
```

```
CREATE TABLE interest_group(  
groupname VARCHAR(128) NOT NULL UNIQUE,  
description VARCHAR(255) NOT NULL,  
groupID INT(5) PRIMARY KEY NOT NULL AUTO_INCREMENT,  
category VARCHAR(10) CHECK (category = 'Places' OR category = 'Business' OR category =  
'Product' OR category = 'People' or category = 'Community')  
);
```

```
CREATE TABLE manages(  
managerID VARCHAR(64),  
g_ID INT(5),  
FOREIGN KEY (managerID) REFERENCES users (email),
```

```
FOREIGN KEY (g_ID) REFERENCES interest_group (groupID)
);
```

```
CREATE TABLE members_List(
member_email_address VARCHAR(64),
groupID INT(5),
FOREIGN KEY (member_email_address) REFERENCES users (email),
FOREIGN KEY (groupID) REFERENCES interest_group (groupID)
);
```

```
CREATE TABLE post(
member_email_address VARCHAR(64) REFERENCES users (email),
groupID INT(5) REFERENCES interest_group (groupID),
post_content VARCHAR(1024),
postID INT(6) NOT NULL AUTO_INCREMENT,
PRIMARY KEY (postID, groupID, member_email_address),
postDateTime timestamp NULL DEFAULT NULL,
postdate time
);
```

## 2.5 Schema Functions

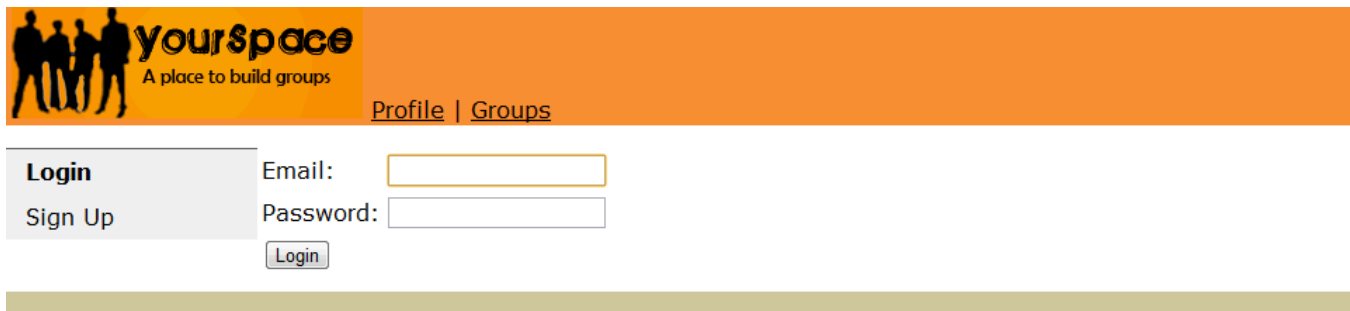
The Users entity primarily deals with user information such as name, password and email. The interest\_group entity stores information regarding the interest group when it is created e.g. name, id and description. The post entity stores information about each individual's written post on the 'wall' of the interest group. It tracks the date and time and is identified by a combination of email, group id and post id. The manages relationship models the relation between the creator (manager) of the interest group and the members\_list links members and their related interest groups.

### 3. Web page design

#### 3.1 Main page

##### 3.1.1 Login

The main page of the website is also the login page which is shown in the screenshot below. Users who have not signed up for an account can click on the sign up button at the left column which will direct him to the sign up page.



The screenshot shows the 'yourSpace' website. The header is orange with the logo 'yourSpace' and the tagline 'A place to build groups'. To the right of the logo are links for 'Profile' and 'Groups'. On the left, there are two buttons: 'Login' and 'Sign Up'. Below these buttons is a form with two input fields: 'Email:' and 'Password:', each followed by a text input box. Below the password field is a 'Login' button. The entire form is enclosed in a light gray border.

The SQL query below is to retrieve all the user's particulars so as to check if the password he has entered for login is similar to the one he has registered with.

```
$LoginRS__query=sprintf("SELECT * FROM users WHERE email=%s AND password=%s",  
    GetSQLValueString($loginUsername, "text"), GetSQLValueString($password, "text"));
```

If the Email is not a registered one or the password has been entered incorrectly, the user will be directed back to the login page.



### 3.1.2 Side bar (Interest group category index)

This is the side panel that our members can use to navigate around the site.

The screenshot shows the 'yourSpace' website header with the logo 'yourSpace' and the tagline 'A place to build groups'. Below the header, there are two links: 'Profile' and 'Groups'. On the left, a sidebar menu is highlighted with a red border, containing the following options: 'Create a Group', 'Join a Group', 'View Groups', 'Groups Joined', and 'Log out'. To the right of the sidebar, the 'My Profile' section is visible, showing the user's name 'kang' and email 'kyleemail@gmail.com'. Below the profile information, there is a link to 'Edit Profile'.

### 3.2 Sign-up page

The screenshot below shows the sign up page.


The screenshot shows the 'yourSpace' website header with the logo 'yourSpace' and the tagline 'A place to build groups'. Below the header, there are two links: 'Profile' and 'Groups'. On the left, a sidebar menu is visible with the options 'Sign Up' and 'Log In'. The 'Sign Up' option is highlighted. To the right of the sidebar, the 'Create An Account' form is visible, containing the following fields: 'Name:', 'Email:', 'Password:', and 'Retype Password:'. Each field has a corresponding text input box. Below the 'Retype Password' field, there is a 'submit' button.

We require that all the text fields are being filled and also, the password and retype password are being checked if they are equal.

The SQL query below inserts the newly registered user into the database. Since the email address is the primary key of the 'users' table, we ensured that 2 of the same email address cannot be registered.

```
$email = $_POST['email'];
$name = $_POST['name'];
if(!mysql_select_db($database_yourspace, $yourspace))
    exit('failed to select the database');
$query = "INSERT INTO users (name, email, password) VALUES('$name', '$email', '$password')";
$result = mysql_query($query);
if(!$result){
    echo"<script type='text/javascript'> window.location = 'signup.php?success=0'</script>";
}
else{
    echo"<script type='text/javascript'> window.location = 'signup.php?success=1'</script>";
}
```

### 3.3 Profile page

 **YourSpace**  
A place to build groups

Profile | Groups

Create a Group  
Join a Group  
View Groups  
Groups Joined  
Log out

**My Profile**

Name:	kang
Email:	kyleemail@gmail.com

[Edit Profile](#)

### 3.3.1 Editing personal Profile

Members can update name and password of the account they registered in the signup page.

**YourSpace**  
A place to build groups

[Profile](#) | [Groups](#)

**View Profile**

Create a Group

Join a Group

View Groups

Log out

Update Name:

New Password\*:

Verify password:

\*At least 6 characters, 12 characters max, and spaces are not allowed.

This is the SQL for updating the records.

```
$updateSQL = sprintf("UPDATE users SET password=%s, name=%s WHERE email=%s",  
    GetSQLValueString($_POST['password'], "text"),  
    GetSQLValueString($_POST['Name'], "text"),  
    GetSQLValueString($_POST['email'], "text"));
```

We used JavaScript as a means to ensure that they have entered the same password twice correctly.

```
function validatePwd() {
var invalid = " "; // Invalid character is a space
var minLength = 6; // Minimum length
var pw1 = document.myForm.password.value;
var pw2 = document.myForm.password2.value;
// check for a value in both fields.
if (pw1 == '' || pw2 == '') {
alert('Please enter your password twice.');
```

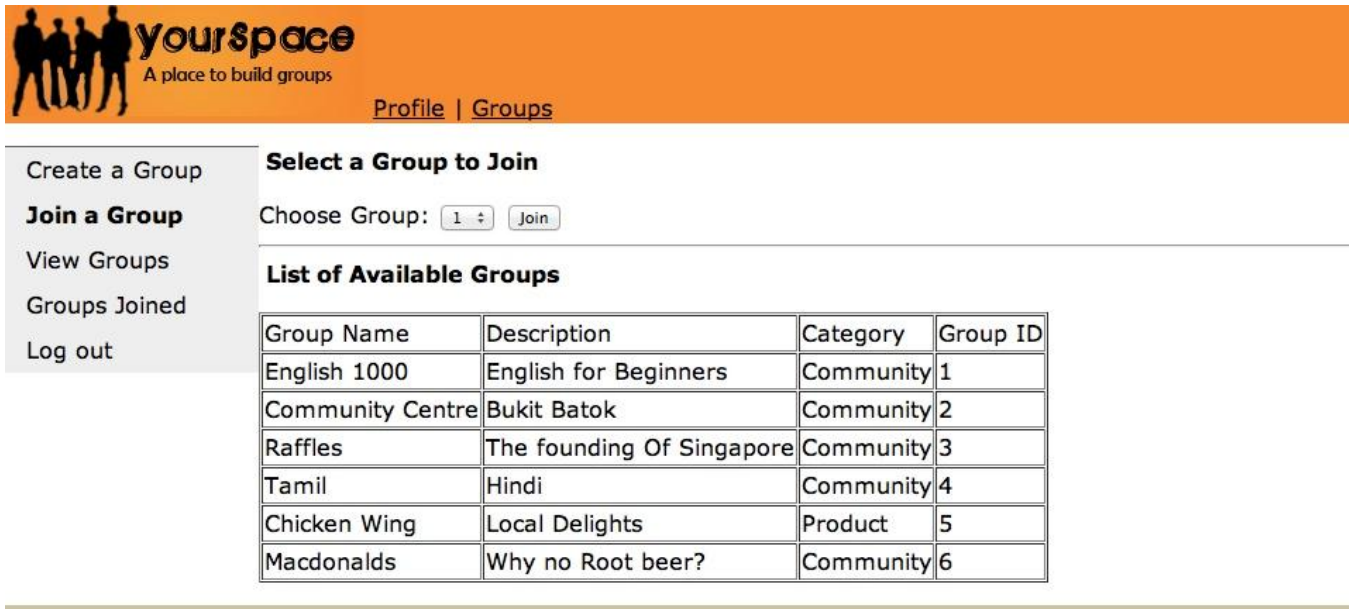
```
return false;
}
// check for minimum length
if (document.myForm.password.value.length < minLength) {
alert('Your password must be at least ' + minLength + ' characters long. Try again.');
```

```
return false;
}
// check for spaces
if (document.myForm.password.value.indexOf(invalid) > -1) {
alert("Sorry, spaces are not allowed.");
return false;
}
else {
if (pw1 != pw2) {
alert ("You did not enter the same new password twice. Please re-enter your password.");
return false;
}
else {
alert('Nice job.');
```

```
return true;
}
}
}
```

### 3.3.2 *Joining an Interest Group*

Members can start joining groups. They select the groups available to them, submit the group id and click on Join. Members cannot rejoin groups that they are already in. The listings of groups available are done using Nested Query.



**yourSpace**  
A place to build groups

Profile | Groups

Create a Group  
**Join a Group**  
View Groups  
Groups Joined  
Log out

**Select a Group to Join**

Choose Group: 1 ▾ Join

**List of Available Groups**

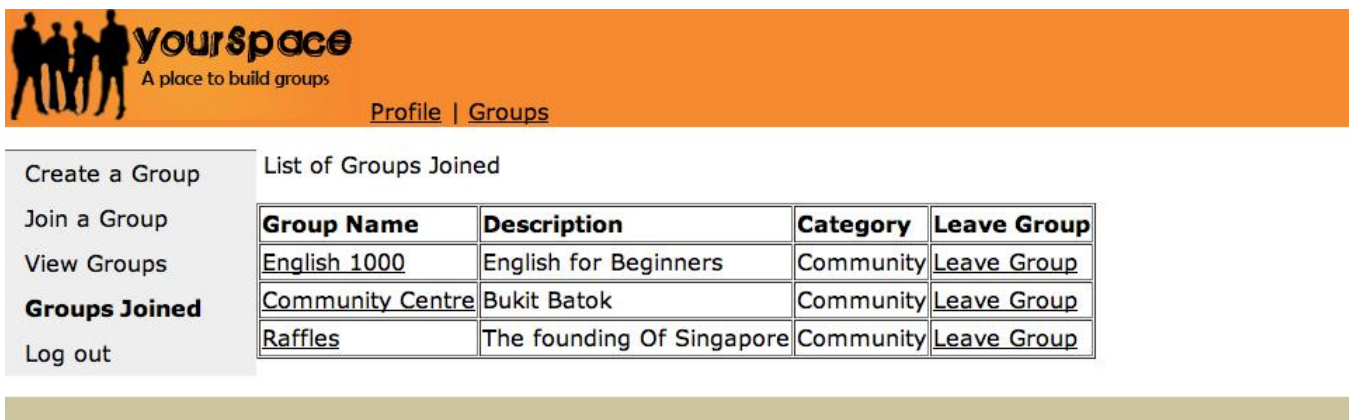
Group Name	Description	Category	Group ID
English 1000	English for Beginners	Community	1
Community Centre	Bukit Batok	Community	2
Raffles	The founding Of Singapore	Community	3
Tamil	Hindi	Community	4
Chicken Wing	Local Delights	Product	5
Macdonalds	Why no Root beer?	Community	6

This is the Nested Query we used to display the groups available.

```
$query_groupIdList = sprintf("SELECT interest_group.groupID FROM interest_group
WHERE not exists (select null from members_List m where
m.groupID=interest_group.groupID and m.member_email_address=%s) ORDER BY
interest_group.groupID ASC ", GetSQLValueString($colname_groupIdList, "text"));
```

### 3.3.3 Leaving an Interest Group

Members are able to leave the group that they have joined. They can do this by clicking on the “Leave” button next to the group name they are currently in.



**yourSpace**  
A place to build groups

Profile | Groups

Create a Group  
Join a Group  
View Groups  
**Groups Joined**  
Log out

**List of Groups Joined**

Group Name	Description	Category	Leave Group
English 1000	English for Beginners	Community	<a href="#">Leave Group</a>
Community Centre	Bukit Batok	Community	<a href="#">Leave Group</a>
Raffles	The founding Of Singapore	Community	<a href="#">Leave Group</a>

This is the SQL code for retrieving the groups that the members have joined.

```
$query_groupsJoined = sprintf("SELECT members_List.member_email_address,  
members_List.groupID, interest_group.groupname, interest_group.`description`,  
interest_group.groupID, interest_group.category FROM members_List, interest_group  
WHERE member_email_address = %s AND members_List.groupID = interest_group.groupID",  
GetSQLValueString($colname_groupsJoined, "text"));|
```

This is the SQL code for deleting members who have joined.

```
$deleteSQL = sprintf("DELETE FROM members_List WHERE member_email_address=%s AND  
groupID=%s", |GetSQLValueString($_GET['member_email_address'], "text"),  
GetSQLValueString($_GET['groupID'], "int"));
```

### 3.3.4 Creating an Interest Group

## 3.4 Interest Group page

### 3.4.1 Posting on the interest group wall

Members can able to participate in the groups they have joined. They can key in their opinions in the text box and click on the “Add” button to submit their post.




[Profile](#) | [Groups](#)

[Create a Group](#)  
[Join a Group](#)  
**[View Groups](#)**  
[Groups Joined](#)  
[Log out](#)

### List of Posts under English 1000

   
[Search](#) [Delete](#)

User	Posts
Posted by: wong@email.com on 2012-03-29 18:49:31	And?
Posted by: kyleemail@gmail.com on 2012-03-29 18:23:52	Just some homework.
Posted by: wong@email.com on 2012-03-29 17:22:51	What English?
Posted by: kyleemail@gmail.com on 2012-03-29 17:20:57	Hi, I am having troubles with my school assignment.

This is the SQL code for adding posts into the discussion forum.

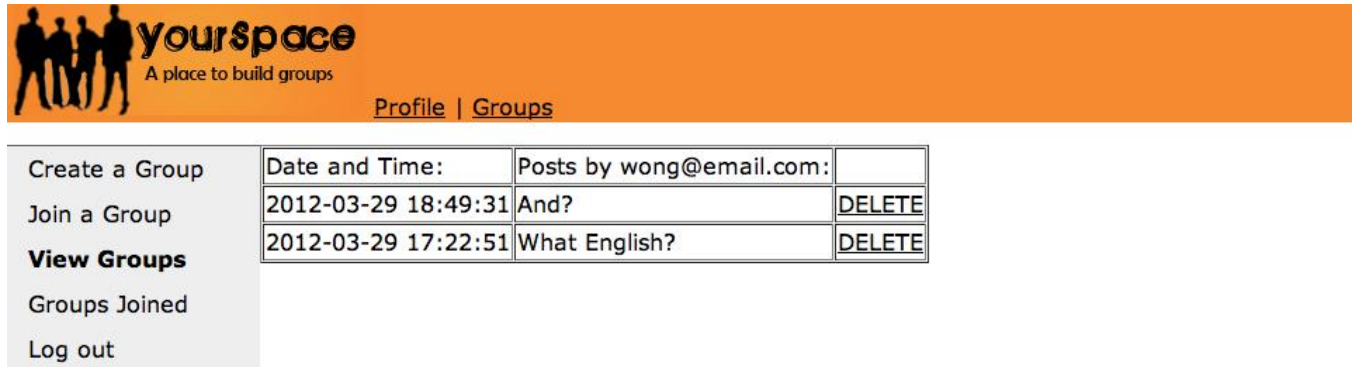
```
$insertSQL = sprintf("INSERT INTO post (member_email_address, groupID,
post_content, postDateTime, `postdate`) VALUES (%s, %s, %s, %s, %s)",
    GetSQLValueString($_POST['user'], "text"),
    GetSQLValueString($_POST['groupID'], "int"),
    GetSQLValueString($_POST['groupDiscussionInput'], "text"),
    GetSQLValueString($_POST['timestamp'], "date"),
    GetSQLValueString($_POST['date'], "date"));|
```





### 3.4.2 Deleting posts

Upon clicking on the delete link from the Group Discussion Post's page, the member can delete the posts that they have submitted previously.

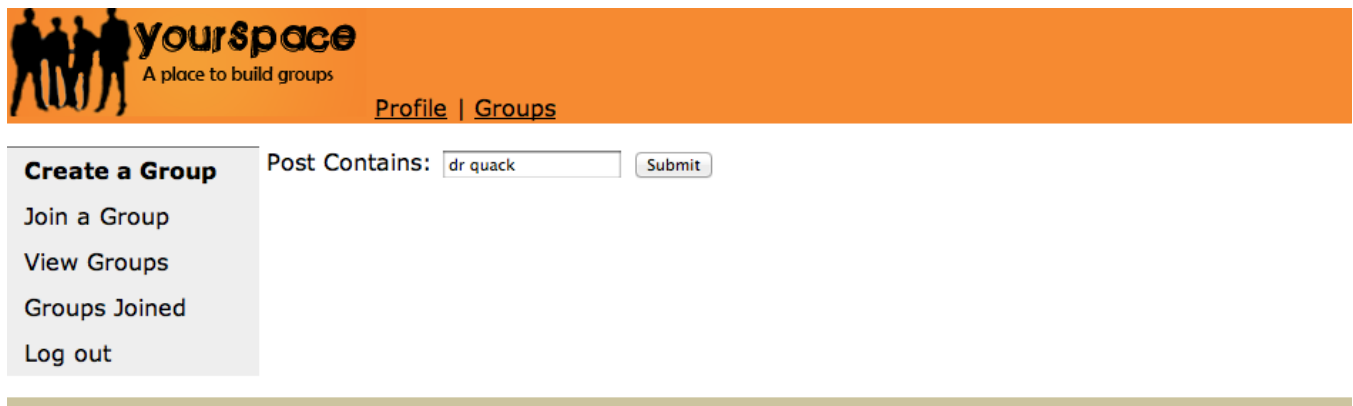


The screenshot shows the 'yourSpace' web application interface. The header is orange with the logo 'yourSpace' and the tagline 'A place to build groups'. Below the header, there are links for 'Profile' and 'Groups'. On the left, a sidebar menu contains links: 'Create a Group', 'Join a Group', 'View Groups' (highlighted), 'Groups Joined', and 'Log out'. The main content area displays a table of posts:

Date and Time:	Posts by wong@email.com:	
2012-03-29 18:49:31	And?	<a href="#">DELETE</a>
2012-03-29 17:22:51	What English?	<a href="#">DELETE</a>

### 3.4.3 Search posts

Upon clicking on the "Search" link from the Group Discussion Post's page, the member enter the search conditions they want and click the submit button. Any posts resembling their search terms will be displayed.



The screenshot shows the 'yourSpace' web application interface with a search form. The header is orange with the logo 'yourSpace' and the tagline 'A place to build groups'. Below the header, there are links for 'Profile' and 'Groups'. On the left, a sidebar menu contains links: 'Create a Group' (highlighted), 'Join a Group', 'View Groups', 'Groups Joined', and 'Log out'. The main content area displays a search form with the label 'Post Contains:' followed by a text input field containing 'dr quack' and a 'Submit' button.

This is the SQL for locating their search results.

```
$query_Recordset1 = sprintf("SELECT| * FROM post WHERE groupID = %s AND
post.post_content LIKE %s", GetSQLValueString($colname_Recordset1, "int"),
GetSQLValueString("%" . $colname2_Recordset1 . "%", "text"));
```

The Search Results page will display posts similar to what they have searched for.

**yourspace**  
A place to build groups

[Profile](#) | [Groups](#)

[Create a Group](#)  
[Join a Group](#)  
**[View Groups](#)**  
[Groups Joined](#)  
[Log out](#)

**Search Results:**

Users	Posts
Posted by: kyleemail@gmail.com on 2012-03-29 17:20:57	Hi, I am having troubles with my school assignment from DR quack.

### 3.5 Page Pagination for yourspace

Our website has page pagination. We decided to display records of 6 a single page and the user can click on the navigation links provided to scroll to the First, Previous, Next or Last page.

This is the code for our page pagination.

---

```

$maxRows_groupRS = 6;
$pageNum_groupRS = 0;
if (isset($_GET['pageNum_groupRS'])) {
    $pageNum_groupRS = $_GET['pageNum_groupRS'];
}
$startRow_groupRS = $pageNum_groupRS * $maxRows_groupRS;

mysql_select_db($database_yourspace, $yourspace);
$query_groupRS = "SELECT * FROM interest_group";
$query_limit_groupRS = sprintf("%s LIMIT %d, %d", $query_groupRS, $startRow_groupRS, $maxRows_groupRS);
$groupRS = mysql_query($query_limit_groupRS, $yourspace) or die(mysql_error());
$row_groupRS = mysql_fetch_assoc($groupRS);

if (isset($_GET['totalRows_groupRS'])) {
    $totalRows_groupRS = $_GET['totalRows_groupRS'];
} else {
    $all_groupRS = mysql_query($query_groupRS);
    $totalRows_groupRS = mysql_num_rows($all_groupRS);
}
$totalPages_groupRS = ceil($totalRows_groupRS/$maxRows_groupRS)-1;

$queryString_groupRS = "";
if (!empty($_SERVER['QUERY_STRING'])) {
    $params = explode("&", $_SERVER['QUERY_STRING']);
    $newParams = array();
    foreach ($params as $param) {
        if (strpos($param, "pageNum_groupRS") == false &&
            strpos($param, "totalRows_groupRS") == false) {
            array_push($newParams, $param);
        }
    }
    if (count($newParams) != 0) {
        $queryString_groupRS = "&" . htmlentities(implode("&", $newParams));
    }
}
$queryString_groupRS = sprintf("&totalRows_groupRS=%d%s", $totalRows_groupRS, $queryString_groupRS);

```


Code for generating url links so the users can navigate.

```

<table border="0">
  <tr>
    <td><?php if ($pageNum_groupRS > 0) { // Show if not first page ?>
      <a href="<?php printf("%s?pageNum_groupRS=%d%s", $currentPage, 0, $queryString_groupRS); ?>">
First</a>
      <?php } // Show if not first page ?></td>
    <td><?php if ($pageNum_groupRS > 0) { // Show if not first page ?>
      <a href="<?php printf("%s?pageNum_groupRS=%d%s", $currentPage, max(0, $pageNum_groupRS - 1),
$queryString_groupRS); ?>">Previous</a>
      <?php } // Show if not first page ?></td>
    <td><?php if ($pageNum_groupRS < $totalPages_groupRS) { // Show if not last page ?>
      <a href="<?php printf("%s?pageNum_groupRS=%d%s", $currentPage, min($totalPages_groupRS,
$pageNum_groupRS + 1), $queryString_groupRS); ?>">Next</a>
      <?php } // Show if not last page ?></td>
    <td><?php if ($pageNum_groupRS < $totalPages_groupRS) { // Show if not last page ?>
      <a href="<?php printf("%s?pageNum_groupRS=%d%s", $currentPage, $totalPages_groupRS,
$queryString_groupRS); ?>">Last</a>
      <?php } // Show if not last page ?></td>
  </tr>
</table>

```

What it looks like for the users who are navigating pages.


**yourSpace**  
A place to build groups

[Profile](#) | [Groups](#)

[Create a Group](#)  
[Join a Group](#)  
**[View Groups](#)**  
[Groups Joined](#)  
[Log out](#)

**List of Posts under English 1000**  
  
[Search](#) [Delete](#)

User	Posts
Posted by: Janice@email.com on 2012-03-29 20:22:26	"Knowledge is power."
Posted by: Francis@email.com on 2012-03-29 20:22:21	"Education is the best provision for the journey to old age."
Posted by: BengBeng@email.com on 2012-03-29 20:22:17	"Opportunity may knock only once, but temptation leans on the doorbell."
Posted by: Kyle@email.com on 2012-03-29 20:22:11	"A real friend is someone who walks in when the rest of the world walks out."
Posted by: JeanCocteau@email.com on 2012-03-29 20:22:06	"I believe in luck; how else can you explain the success of those you dislike?"
Posted by: TheVin@email.com on 2012-03-29 20:22:00	"I'm not afraid to die. I just don't want to be there when it happens."

[First](#) [Previous](#) [Next](#) [Last](#) 

[Profile](#) | [Groups](#)[Create a Group](#)[Join a Group](#)**[View Groups](#)**[Groups Joined](#)[Log out](#)**List of Posts under English 1000** [Search](#) [Delete](#)

User	Posts
Posted by: Janice@email.com on 2012-03-29 20:22:26	"Knowledge is power."
Posted by: Francis@email.com on 2012-03-29 20:22:21	"Education is the best provision for the journey to old age."
Posted by: BengBeng@email.com on 2012-03-29 20:22:17	"Opportunity may knock only once, but temptation leans on the doorbell."
Posted by: Kyle@email.com on 2012-03-29 20:22:11	"A real friend is someone who walks in when the rest of the world walks out."
Posted by: JeanCocteau@email.com on 2012-03-29 20:22:06	"I believe in luck; how else can you explain the success of those you dislike?"
Posted by: TheVin@email.com on 2012-03-29 20:22:00	"I'm not afraid to die. I just don't want to be there when it happens."

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