

# MOBILE COMPUTING-ASSIGNMENT 2

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## FRIENDS FINDER APP

Friends finder android application uses MYSQL data base provided by XAMPP and PHP web services.

front end implementation of MainActivity, LoginActivity, RegistrationActivity and FriendsActivity with respective functionalities.

A web service using php scripts to connect to the database provided by XAMPP. Created different web services for each functionality of the app, i.e., registerUser for registration, login for loginActivity, find\_frnds and updateUser for locating nearby users within a radius of 1km

In findFriends.php, implemented a algorithm to calculate the distance between two latitudes and longitudes and queries to pull up users based on the distance (1km).

Algorithm is here:

Passed to function:

lat1, lon1 = Latitude and Longitude of point 1 (in decimal degrees)

lat2, lon2 = Latitude and Longitude of point 2 (in decimal degrees)

unit = the unit you desire for results

where: 'M' is statute miles (default)

'K' is kilometers

'N' is nautical miles

```
function distancetocalculate($lat1, $lon1, $lat2, $lon2, $unit) {
```

```
    $theta = $lon1 - $lon2;
```

```
    $dist = sin(deg2rad($lat1)) * sin(deg2rad($lat2)) + cos(deg2rad($lat1)) * cos(deg2rad($lat2)) *  
    cos(deg2rad($theta));
```

```
    $dist = acos($dist);
```

```
    $dist = rad2deg($dist);
```

```
$miles = $dist * 60 * 1.1515;
```

```
$unit = strtoupper($unit);
```

```
if ($unit == "K") {
```

```
    return ($miles * 1.609344);
```

```
} else if ($unit == "N") {
```

```
    return ($miles * 0.8684);
```

```
} else {
```

```
    return $miles;
```

```
}
```

```
}
```

Reference link: <http://blog.iyngaran.info/calculate-distance-between-two-locations-by-latitude-and-longitude>

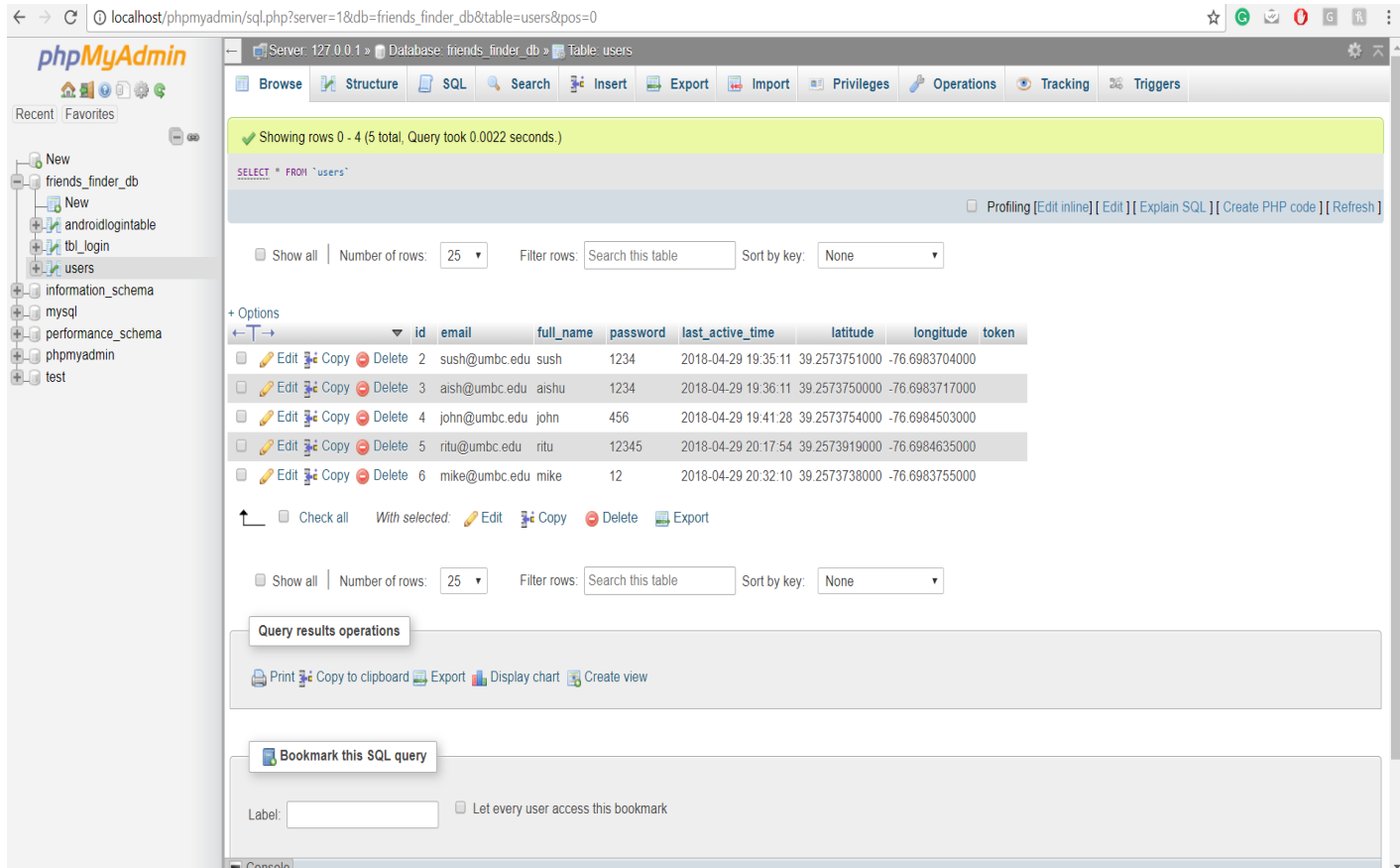
<http://blog.iyngaran.info/php-get-latitude-longitude-from-an-address-with-google-map>

Reference for creating login and registration module:

<http://androidcss.com/android/android-php-mysql-login-tutorial/>

<https://www.youtube.com/watch?v=ZOrYOWJYGl8>

Data base table created:



The screenshot shows the phpMyAdmin interface. On the left, the database structure is visible, including 'friends\_finder\_db' and its tables: 'tbl\_login' and 'users'. The 'users' table is selected, and its structure is shown. The table has 5 rows of data. The SQL query 'SELECT \* FROM `users`' is entered in the query box. The query results are displayed in a table with columns: id, email, full\_name, password, last\_active\_time, latitude, longitude, and token.

	id	email	full_name	password	last_active_time	latitude	longitude	token
<input type="checkbox"/>	2	sush@umbc.edu	sush	1234	2018-04-29 19:35:11	39.2573751000	-76.6983704000	
<input type="checkbox"/>	3	aish@umbc.edu	aishu	1234	2018-04-29 19:36:11	39.2573750000	-76.6983717000	
<input type="checkbox"/>	4	john@umbc.edu	john	456	2018-04-29 19:41:28	39.2573754000	-76.6984503000	
<input type="checkbox"/>	5	ritu@umbc.edu	ritu	12345	2018-04-29 20:17:54	39.2573919000	-76.6984635000	
<input type="checkbox"/>	6	mike@umbc.edu	mike	12	2018-04-29 20:32:10	39.2573738000	-76.6983755000	

YouTube link for the project DEMO:

[https://youtu.be/AB2J\\_FECyJA](https://youtu.be/AB2J_FECyJA)

<http://blog.iyngaran.info/calculate-distance-between-two-locations-by-latitude-and-longitude>