cis20.2-spring2010-sklar,lab II.4
php and mysql exercise

A. accessing MySQL from PHP

Note that documentation is available online here:

`http://www.php.net/manual/en/ref.mysql.php`

Basically, there are four things you want to be able to do in MySQL from within PHP:

1. connect to the mysql database
2. execute mysql queries
3. check the status of your mysql commands
4. disconnect from the mysql database

Queries can be any kind of MySQL query, including SELECT, UPDATE, INSERT, etc.

Following SELECT queries, you can execute MySQL/PHP functions to put the data read from the MySQL database into PHP variables. Then you can use the PHP variables in your PHP script to do whatever analysis, display, etc. that you want.

1. connect to the MySQL database

Here is an example of connecting to the MySQL database from within PHP:

```
$conn = mysql_connect( $mysql_host, $mysql_user, $mysql_password )
        or die( 'Could not connect: ' . mysql_error() );
echo 'Connected successfully';
mysql_select_db( $mysql_db ) or die( 'Could not select database' );
```

You will need to replace the variables `$mysql_host`, `$mysql_user`, `$mysql_password` and `$mysql_db` with strings containing the values for connecting to your database.
Notice that there are two functions invoked:

- one that logs into mysql: `mysql_connect()`
- one that selects the database to use: `mysql_select_db()`

Also notice that you put your un-encrypted password in the script that connects to the database. So be careful where you put that script! Make sure it is in a directory where there is a default `index.html` (or `index.php`) file so that nobody can get to the script from a web browser.

2. execute MySQL queries

Here is an example of executing a SELECT query from within PHP:

```
// set up and execute the MySQL query
$query  = 'SELECT * FROM my_table';
$result = mysql_query( $query )
          or die( 'Query failed: '. mysql_error() );
// print the results as an HTML table
echo "<table>\n";
while ( $row = mysql_fetch_array( $result, MYSQL_ASSOC )) {
    echo "\t<tr>\n";
    foreach ( $row as $item ) {
        echo "\t\t<td>$item</td>\n";
    }
    echo "\t</tr>\n";
}
echo "</table>\n";
// free result
mysql_free_result( $result );
```

There are three functions used here:

- one to execute the query and store the result in a local variable: `mysql_query()`
- one to parse the data read returned from the query as an array: `mysql_fetch_array()`
- one to free the memory used by the query result: `mysql_free_result()`

NOTE that if the result returned is a scalar and not an array, then only `mysql_query()` needs to be called and does not need to be followed by a call to `mysql_fetch_array()`.
Finally, note the use of `mysql_error()` in the query function.

3. check the status of your MySQL commands

If errors occur, the functions return errors. These errors can be read as strings using the function `mysql_error()`. Note the usage in this statement:

```
$conn = mysql_connect( $mysql_host, $mysql_user, $mysql_password )
        or die( 'Could not connect: ' . mysql_error() );
echo 'Connected successfully';
```

4. disconnect from the mysql database

To disconnect from MySQL, there is one function needed: `mysql_close( $conn );`

other handy PHP/MySQL functions

There is a long list of PHP/MySQL functions. The whole list is available on the web page listed above. Here are a few of the more handy functions:

- `int mysql_num_rows ( $result )`
  This function returns the number of rows contained in a `$result`; this is relevant when the result returned from `mysql_query()` is an array and not a scalar.

- `int mysql_affected_rows ( $conn )`
  This function returns the number of rows that were affected by the most recently executed INSERT, UPDATE, REPLACE or DELETE query. This is useful for checking if what you expected to happen with these commands actually happened (e.g., if the row you expected to insert was inserted, etc.).

- `int mysql_insert_id ( $conn )`
  This function is used when inserting a row into a table that has an AUTO_INCREMENT ID field; the function returns the ID number that was generated.

- `string mysql_stat ( $conn )`
  This function returns a string containing information about the status of the current database connection.

B. try it yourself

1. Log into the class web server using **putty (ssh)** and your username and password.
   The IP address of the web server is: `146.245.250.181`

2. In lab II.2, you created a table in your MySQL database on the class server called `birthday`, which has fields like this:

```
mysql> DESC birthday;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| thename  | varchar(30) |      | PRI |         |       |
| themonth | int(11)     | YES  |     | NULL    |       |
| theday   | int(11)     | YES  |     | NULL    |       |
| theyear  | int(11)     | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

3. Write a PHP script that will connect to your MySQL database and query your `birthday` table, selecting all the rows and columns.
   Display the results as an HTML table in a web page.

4. Modify the query to select only the `thename` column, for all rows in your birthday table.

5. Modify the query to select all the columns in your birthday table for those rows with a birth month in March.

6. Modify the query to select only the `thename` column in your birthday table for those rows with a birth month in March.

C. moving on

1. Create an HTML form with fields for someone to enter their name and the month, day and year of their birthday.

2. Read that data into PHP variables, and then form them into a MySQL INSERT statement.

3. Execute the statement and call `mysql_affected_rows()` to make sure that the INSERT statement worked properly.

4. Then execute the first query statement above, that gets all the rows and columns from the `birthday` table and displays them as an HTML table. Make sure that the new person has been added correctly.