Milestone 3: Database Methodology

Team Name Loading…

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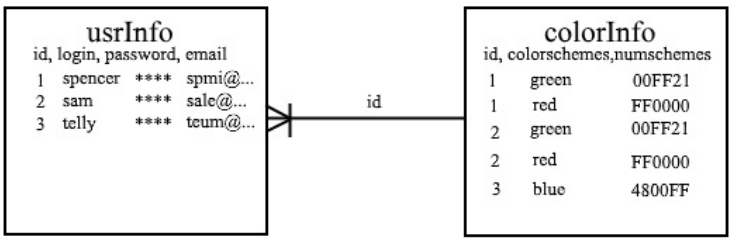
1. **Database Usage:**

   Through using the relational database, mySQL, we will store the information needed for the application regarding login credentials and the color schemes for the Arduino controlled LED for each user. This database will be our backbone of the 'back-end' portion for our application. Having the ability to pull information from different data schemas to our app and relaying the instructions to the Arduino will be the primary function and use of the database.

2. **ER-Diagram:**

Database ER-Diagram



3. **Database Scripts:**

We have several scripts. Two of which allow for modular insertion via command-line arguments into our tables colorInfo and usrInfo (those links lead to their scripts, respectively).

Likewise, we wrote a singular script to create a database named “leduino”. This script creates the database and then, calls the second script we created ‘leduino.sql’, wherein our tables are created and some default values are inserted. The results of that action can be observed below:

Script to create database and insert our tables:

```
#!/bin/bash
sudo mysql -e "CREATE DATABASE leduino;"
sudo mysql leduino < leduino.sql
```

Script to create tables and insert default data:

```
mysql> show tables;
+-------------------+
| Tables_in_elduino |
+-------------------+
| colorInfo         |
| usrInfo           |
+-------------------+
2 rows in set (0.00 sec)

mysql> select * FROM colorInfo;
+----------+--------------------+------------------+
| 'id'     | 'colorschemes'     | 'numschemes'     |
+----------+--------------------+------------------+
|        1 | green              | 00FF21           |
|        1 | red                | FF0000           |
|        2 | green              | 00FF21           |
|        2 | red                | FF0000           |
|        3 | blue               | 4800FF           |
+----------+--------------------+------------------+
5 rows in set (0.00 sec)

mysql> SELECT * FROM usrInfo;
+----------+-------------+----------------+----------------+
| 'id'     | 'login'     | 'password'     | 'email'        |
+----------+-------------+----------------+----------------+
|        1 | spencer     | ****           | spmi@ex.com    |
|        2 | sam         | *****          | sale3054@c.com |
|        3 | telly       | *******        | teum@c.com     |
+----------+-------------+----------------+----------------+
3 rows in set (0.00 sec)
```

```
create table if not exists usrInfo (
'id' int(4) not null auto_increment,
'login' varchar(20) not null,
'password' varchar(20) not null,
'email' varchar(20) not null,
primary key ('id', 'login')
) ENGINE=MyISAM DEFAULT CHARSET=utf8 AUTO_INCREMENT=8;
insert into usrInfo ('id', 'login', 'password', 'email') values
(0001, 'spencer', '****', 'spmi@ex.com'),
(0002, 'sam', '*****', 'sale3054@c.com'),
(0003, 'telly', '*******', 'teum@c.com');

create table if not exists colorInfo (
'id' int(4) not null auto_increment,
'colorschemes' varchar(10) not null,
'numschemes' varchar(6) not null,
primary key ('id', 'colorschemes')
) ENGINE=MyISAM DEFAULT CHARSET=utf8 AUTO_INCREMENT=8;
insert into colorInfo ('id', 'colorschemes', 'numschemes') values
(0001, 'green', '00FF21'),
(0001, 'red', 'FF0000'),
(0002, 'green', '00FF21'),
(0002, 'red', 'FF0000'),
(0003, 'blue', '4800FF');
```

All of these pieces are simple, however, in tandem they will allow for quick read/write on the backend of our project.

It is likely that these will need to become more complicated in the near future, but for now, this accomplishes our foreseeable tasks.