CIS 551: Databases Final Project

Database of Climbing Routes

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Port number: 3875
Username: guest. No password
Database Name: climbing
URL: https://ix.cs.uoregon.edu/ swalton2/551/Final/

1 Table of Contents

2 Summary

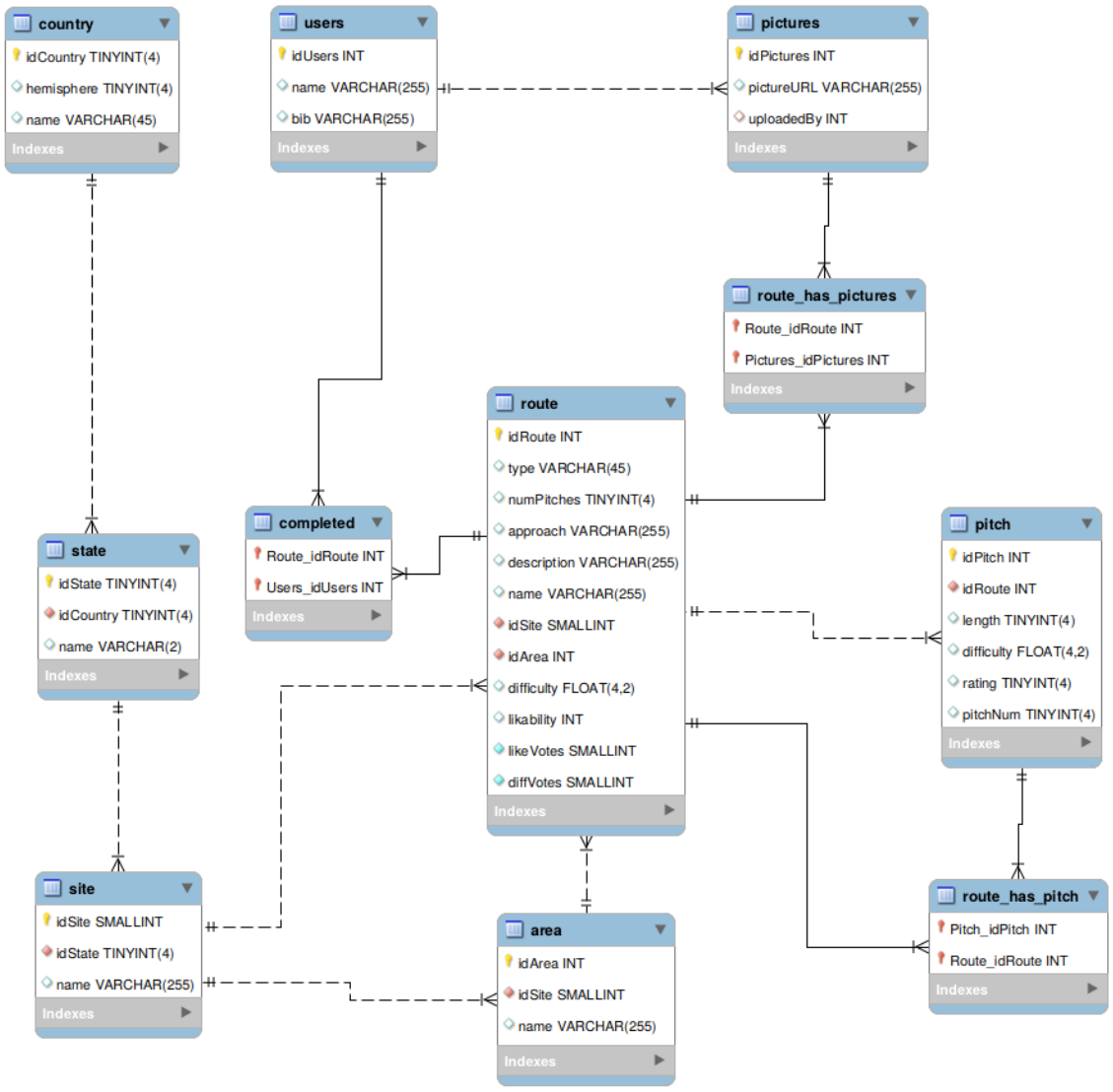
In this project I created a website similar to that of Mountain Project (links on site). The purpose of this site is so that rock climbers can create a list of routes. These routes will have the information necessary for them to know if they can climb them and what to prepare for. Being community driven, users are encouraged to add to routes and vote on the difficulty and likability of routes. They are also able to find pictures that have been taken.

There are many applications that are within the program. The main applications for the users are that they can search routes, see the entire listings, and investigate individual routes. Users are also able to submit new routes. They can even submit routes in countries, states, sites, etc that do not yet exist in the database. If they call the submit route function then it will generate those as well. Additionally, if a user specifies that a route has more than one pitch, then the route page will automatically take them through the process of specifying each pitch, then will bring them to the landing page as they submit the last pitch.

When searching a route or listing all of them, the route names are clickable links. This will take the user to the respective route page and display the relevant information for them, including any pictures. Additionally on this page users are able to vote on the likability and difficulty of a particular route.

Users are also able to generate their own profiles. Their usernames are also clickable links within the user listing directory. Their page shows their name, a description, and what photos they have submitted to the site.

3 Logical Design



4 List of Applications

- Submissions
  - Country
  - State
  - Site
  - Area
  - Route
  - Pitch

  - User
  - Picture
- Update Information
  - Route Difficulty
  - Route Likability
- User Pages
- Route Pages
- Search
  - By Country
  - By State
  - By Site
  - By Area
  - By Route
  - Or by combination
- User Directory
- Route Directory
- Random Picture Display on Landing Page
- API

5 User's Guide

This website was designed to make things easy on the user, and thus is expected to not need much guidance.

On the landing page the user is presented with the ability to search, add a user, see the user directory, see the route directory (sorted by popularity and then difficulty), and able to add new routes. The landing page also shows a random picture from the database.

In searching and the route directory listing users are presented with the country, state, site, area, route, type, number of pitches, difficulty, and likability of routes. The route names are buttons which will bring them to the specific route page.

On the route page they are presented with the same information, but additionally with a description of the route and the approach. Users are also able to vote on the difficulty and likability of the route. These values default to the already established values. Both are averages based on the number of times that users have voted on

a route. Pictures from the route are also displayed. If a route has multiple pitches, then these pitches are also displayed to the user.

A user is also able to add themselves with a short description. In the user directory we can see the name and description of the user. The name is a button which will generate a page that shows the same information and the images that the user has submitted.

Note: there is a backup of the database. If anything goes wrong, please resource this one.

5.1 API

In the */sec* folder we find all the class based object and we can thus use these API calls for testing and breaking things. In this section we highlight some of these functions.

5.1.1 connect.php

This is root function and all other functions will call from it. This just handles the connection information and only has one function "connect".

5.1.2 countryFunctions.php, stateFunctions.php, siteFunctions.php, areaFunctions.php

This file has functions related to the country table. Many of these are useful for testing and others are used within the website. One can either just print out all countries with "listCountries()" or receive back an array with them with "getAllCountries()". Functions also exist to get the name or ID of the country, add a new one, or delete by name or ID. The same functions exist for states, sites, and areas.

It should also be noted that there is a recursive process here. There is a hierarchy within these files: country ¿ state ¿ site ¿ area. If one creates an area then a site, state, and country will also be created (country, then state, then site, then finally area). Dynamically creating objects like this ensures that we have a consistent and logical database. All add statements are done with PDO::prepare. The execute statements are then in try-catch blocks to preserve consistency.

5.1.3 routeFunctions.php

The route function is the top of the hierarchy in the above chain. Creating a route will force the creation of all other elements if they are not already created. It also has similar functions to the above table APIs.

Route also has some other unique functions to it. These include searching through routes with any combination of: "country", "state", "site", "area", "likability", "difficulty", "type", or "number of pitches". Additionally, one can just call functions such as "getRoutesIn{Country,State,Area,etc.}. The Route API also allows the user to update the likability with "updateLikability(int vote, int idRoute)" and difficulty

with “updateDifficulty(float vote, int idRoute)”. These functions also count each time they were called, and average the inputs given.

5.1.4 pitchFunctions.php

This API only allows for a user to access the pitches in a route or to add a new pitch, supplying the route ID.

5.1.5 pictureFunctions.php

This API has similar functions as the others. What is unique in here is that we can grab a random picture either from the entire set of pictures or from a route. We can also easily obtain pictures that are uploaded by a single user. Users can also upload pictures that are not connected to routes (this won't show on the landing page).

This API also handles the bridge table operations. (See ER diagram)

5.1.6 userFunctions.php

This has similar calls to the rest of the API functions.

5.1.7 basicFunctions.php

The Basic API handles 2 things. The first is to print all the tables. This is for testing and investigation purposes only. The other part is that this handles the conversion back and forth between the floating point value for difficulty that is stored within the route table and the Yosemite Decimal System. The use of these functions allows us to talk in a language that climbers understand.

6 Contents of Tables

```sql
--
-- Table structure for table `country`
--

DROP TABLE IF EXISTS `country`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `country` (
  `idCountry` tinyint(4) NOT NULL,
  `hemisphere` tinyint(4) DEFAULT NULL,
  `name` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`idCountry`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `country`
--

LOCK TABLES `country` WRITE;
/*!40000 ALTER TABLE `country` DISABLE KEYS */;
INSERT INTO `country` VALUES (0,NULL,'US'),(1,NULL,'UK'),(2,NULL,'FR');
/*!40000 ALTER TABLE `country` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `state`
--

DROP TABLE IF EXISTS `state`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `state` (
  `idState` tinyint(4) NOT NULL,
  `idCountry` tinyint(4) NOT NULL,
  `name` varchar(2) DEFAULT NULL,
  PRIMARY KEY (`idState`),
  KEY `fk_State_1_idx` (`idCountry`),
  CONSTRAINT `fk_State_1` FOREIGN KEY (`idCountry`) REFERENCES `country`
(`idCountry`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `state`
--

LOCK TABLES `state` WRITE;
/*!40000 ALTER TABLE `state` DISABLE KEYS */;
INSERT INTO `state` VALUES (0,0,'OR'),(1,0,'AZ'),(2,1,'SL'),(3,2,'SA'),
(4,0,'CA'),(5,0,'MT'),(6,0,'WA');
/*!40000 ALTER TABLE `state` ENABLE KEYS */;
UNLOCK TABLES;
```

```
--
-- Table structure for table `site`
--

DROP TABLE IF EXISTS `site`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `site` (
  `idSite` smallint(6) NOT NULL,
  `idState` tinyint(4) NOT NULL,
  `name` varchar(255) DEFAULT NULL,
  PRIMARY KEY (`idSite`),
  KEY `fk_State_idx` (`idState`),
  CONSTRAINT `fk_State` FOREIGN KEY (`idState`) REFERENCES `state` (`idState`)
ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `site`
--

LOCK TABLES `site` WRITE;
/*!40000 ALTER TABLE `site` DISABLE KEYS */;
INSERT INTO `site` VALUES (0,0,'Smith Rock'),(1,1,'Sedona'),(2,2,'Glen Nevis'),
(3,3,'Ceuse'),(4,4,'Joshua Tree'),(5,5,'Gallatin Canyon'),(6,6,'Icicle Creek'),
(7,6,'Skykomish Valleu');
/*!40000 ALTER TABLE `site` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `area`
--

DROP TABLE IF EXISTS `area`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `area` (
  `idArea` int(11) NOT NULL,
  `idSite` smallint(6) NOT NULL,
  `name` varchar(255) DEFAULT NULL,
  PRIMARY KEY (`idArea`),
  KEY `fk_Site_idx` (`idSite`),
  CONSTRAINT `fk_Site` FOREIGN KEY (`idSite`) REFERENCES `site` (`idSite`)
ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `area`
--

LOCK TABLES `area` WRITE;
/*!40000 ALTER TABLE `area` DISABLE KEYS */;
INSERT INTO `area` VALUES (0,0,'Kiss of the Lepers Buttress'),(1,0,'Monkey Face'),
(2,1,'Twin Butte'),(3,2,'Steall Hut Crag'),(4,3,'Secteur Berlin'),
(5,4,'Real Hidden Valley'),(6,5,'Skyline Buttress'),(7,5,'Sparerib'),
(8,6,'Snow Creek'),(9,7,'Central Wall');
/*!40000 ALTER TABLE `area` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `route`
--

DROP TABLE IF EXISTS `route`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `route` (
  `idRoute` int(11) NOT NULL,
  `type` varchar(45) DEFAULT NULL,
  `numPitches` tinyint(4) DEFAULT NULL,
  `approach` varchar(255) DEFAULT NULL,
  `description` varchar(255) DEFAULT NULL,
  `name` varchar(255) DEFAULT NULL,
  `idSite` smallint(6) NOT NULL,
  `idArea` int(11) NOT NULL,
  `difficulty` float(4,2) DEFAULT NULL,
  `likability` int(11) DEFAULT NULL,
  `likeVotes` smallint(6) NOT NULL,
  `diffVotes` smallint(6) NOT NULL,
  PRIMARY KEY (`idRoute`),
  KEY `fk_Route_Area1_idx` (`idArea`),
  KEY `fk_Route_Site_idx` (`idSite`),
  CONSTRAINT `fk_Route_Area1` FOREIGN KEY (`idArea`) REFERENCES `area` (`idArea`) ON DELETE NO ACTION ON UPDATE NO ACTION,
  CONSTRAINT `fk_Route_Site` FOREIGN KEY (`idSite`) REFERENCES `site` (`idSite`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `route`
--

LOCK TABLES `route` WRITE;
/*!40000 ALTER TABLE `route` DISABLE KEYS */;
INSERT INTO `route` VALUES (0,'sport',5,'Go over the hill like you\'re going
    towards monkey face. Turn right and you\'re there.','Beautiful climb.
    Everyone can and should try it.','First Kiss',0,0,7.00,10,10,2),(1,'sport',2,
    'Go around the main hill and down the stairs. Can\'t miss it','Iconic view
    and climb','Monkey Space',0,1,11.25,8,1,1),(2,'sport',1,'East side of monkey
    face','Hard classic straight on monkey face','Just Do It',0,1,14.50,10,2,2),
(3,'sport',1,'Left side of cave','Best 12d in Arizona. ','Mission To Mars',1,2,
    12.75,5,2,2),(4,'trad',1,'Beautiful hike in. Hard to miss','One of the hardest
    and best climbs in the UK','Stolen',2,3,13.75,10,1,1),(5,'trad',1,'further
    left blue streaks on the Berlin Sector','Sustained 5.12 climbing on classic
    Ceuse dishes and pockets all the way to the top','Blocage Violent',3,4,12.50,
    8,1,1),(6,'trad',1,'Located on the far right side of the west face of The
    Sentinel','There\'s a beer named after this route, so why wouldn\'t you want
    to climb it?','Illusion Dweller',4,5,10.25,8,1,1),(7,'trad',6,'','Skyline
    Arete is the longest route in the canyon. Sitting high above the river, the
    route offers fun climbing at a modest grade with sweeping views from
    comfortable belays','Skyline Arete',5,6,6.00,6,1,1),(8,'trad',2,'Sparerib is
    its own formation.','The crux is on the second pitch. For 5.8, it is very
    exposed but well worth the hike and effort. ','Sparerib',5,7,6.00,5,1,1),
(9,'trad',6,'Can\'t miss it','Probably the most popular route in Leavenworth.
    Starts at the base of Snow Creek Wall and follows fantastic features up
    through the main shield to the top. T','Outer Space',6,8,9.00,10,1,1),
(10,'trad',3,'The route is immediately to the left when you reach the upper
    town walls via the standard approach trail. It heads up a corner to the left
    of a blank face. ','Super classic at Index','Davis Holland',7,9,10.50,9,1,1);
/*!40000 ALTER TABLE `route` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `route_has_pictures`
--

DROP TABLE IF EXISTS `route_has_pictures`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `route_has_pictures` (
  `Route_idRoute` int(11) NOT NULL,
  `Pictures_idPictures` int(11) NOT NULL,
  PRIMARY KEY (`Route_idRoute`,`Pictures_idPictures`),
  KEY `fk_Route_has_Pictures_Pictures1_idx` (`Pictures_idPictures`),
  KEY `fk_Route_has_Pictures_Route1_idx` (`Route_idRoute`),
  CONSTRAINT `fk_Route_has_Pictures_Pictures1` FOREIGN KEY
(`Pictures_idPictures`) REFERENCES `pictures` (`idPictures`) ON DELETE NO ACTION
ON UPDATE NO ACTION,
  CONSTRAINT `fk_Route_has_Pictures_Route1` FOREIGN KEY (`Route_idRoute`)
REFERENCES `route` (`idRoute`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `route_has_pictures`
--

LOCK TABLES `route_has_pictures` WRITE;
/*!40000 ALTER TABLE `route_has_pictures` DISABLE KEYS */;
INSERT INTO `route_has_pictures` VALUES (0,1),(1,2),(2,3),(3,4),(4,5),(5,6),
(6,7),(7,11),(8,12),(9,13),(10,14);
/*!40000 ALTER TABLE `route_has_pictures` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `route_has_pitch`
--

DROP TABLE IF EXISTS `route_has_pitch`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `route_has_pitch` (
  `Pitch_idPitch` int(11) NOT NULL,
  `Route_idRoute` int(11) NOT NULL,
  PRIMARY KEY (`Pitch_idPitch`,`Route_idRoute`),
  KEY `fk_Pitch_has_Route_Route1_idx` (`Route_idRoute`),
  KEY `fk_Pitch_has_Route_Pitch1_idx` (`Pitch_idPitch`),
  CONSTRAINT `fk_Pitch_has_Route_Pitch1` FOREIGN KEY (`Pitch_idPitch`)
REFERENCES `pitch` (`idPitch`) ON DELETE NO ACTION ON UPDATE NO ACTION,
  CONSTRAINT `fk_Pitch_has_Route_Route1` FOREIGN KEY (`Route_idRoute`)
REFERENCES `route` (`idRoute`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `route_has_pitch`
--

LOCK TABLES `route_has_pitch` WRITE;
/*!40000 ALTER TABLE `route_has_pitch` DISABLE KEYS */;
INSERT INTO `route_has_pitch` VALUES (0,0),(1,0),(2,0),(3,0),(4,0),(5,1),(6,1),
(7,7),(8,7),(9,7),(10,7),(11,7),(12,7),(13,8),(14,8),(15,9),(16,9),(17,9),(18,9),
(19,9),(20,9),(21,10),(22,10),(23,10);
/*!40000 ALTER TABLE `route_has_pitch` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `pitch`
--

DROP TABLE IF EXISTS `pitch`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `pitch` (
  `idPitch` int(11) NOT NULL,
  `idRoute` int(11) NOT NULL,
  `length` tinyint(4) DEFAULT NULL,
  `difficulty` float(4,2) DEFAULT NULL,
  `rating` tinyint(4) DEFAULT NULL,
  `pitchNum` tinyint(4) DEFAULT NULL,
  PRIMARY KEY (`idPitch`),
  KEY `fk_Route_idx` (`idRoute`),
  CONSTRAINT `fk_Route` FOREIGN KEY (`idRoute`) REFERENCES `route` (`idRoute`)
ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `pitch`
--

LOCK TABLES `pitch` WRITE;
/*!40000 ALTER TABLE `pitch` DISABLE KEYS */;
INSERT INTO `pitch` VALUES (0,0,30,7.00,9,1),(1,0,30,6.00,7,2),(2,0,30,5.00,5,3),
(3,0,30,5.00,7,4),(4,0,30,7.00,10,5),(5,1,30,11.00,8,1),(6,1,30,11.25,10,2),
(7,7,30,6.00,7,1),(8,7,30,6.00,7,2),(9,7,30,6.00,0,3),(10,7,30,6.00,2,4),
(11,7,30,6.00,8,5),(12,7,30,6.00,10,6),(13,8,30,6.00,8,1),(14,8,35,3.00,0,2),
(15,9,30,2.00,3,1),(16,9,30,2.00,4,2),(17,9,30,9.00,7,3),(18,9,30,8.00,9,4),
(19,9,35,7.00,10,5),(20,9,30,9.00,10,6),(21,10,30,8.00,6,1),(22,10,30,10.00,8,2),
(23,10,30,10.50,10,3);
/*!40000 ALTER TABLE `pitch` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `users`
--

DROP TABLE IF EXISTS `users`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `users` (
  `idUsers` int(11) NOT NULL,
  `name` varchar(255) DEFAULT NULL,
  `bib` varchar(255) DEFAULT NULL,
  PRIMARY KEY (`idUsers`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `users`
--

LOCK TABLES `users` WRITE;
/*!40000 ALTER TABLE `users` DISABLE KEYS */;
INSERT INTO `users` VALUES (0,'Steven Walton','I made this ^_^'),
(1,'SpiderMan','I don\'t need ropes.'),
(2,'David Bowie','I can climb into a bed, that\'s about it.'),
(3,'Alex Honnold','I did that free climb thing. No biggie.'),
(4,'Adam Ondra','I finally made the Olympics. Speedclimbing is hard!'),
(5,'Trevor Bergstrom ','Aspiring Trad Dad. Lives for 5.FUN! routes to show off all his brand new cams.'),
(6,'John Salathe','You could say I invented this.'),
(7,'Warren Harding','I climb the hardest!'),
(8,'Edmund Hillary','Everest? That was me'),
(9,'Tenzing Norgay','You don\'t make it up Everest without a Nepalese sherpa carrying all your stuff.');
/*!40000 ALTER TABLE `users` ENABLE KEYS */;
UNLOCK TABLES;
```

```sql
--
-- Table structure for table `pictures`
--

DROP TABLE IF EXISTS `pictures`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `pictures` (
  `idPictures` int(11) NOT NULL,
  `pictureURL` varchar(255) DEFAULT NULL,
  `uploadedBy` int(11) DEFAULT NULL,
  PRIMARY KEY (`idPictures`),
  KEY `fk_UploadedBy_idx` (`uploadedBy`),
  CONSTRAINT `fk_UploadedBy` FOREIGN KEY (`uploadedBy`) REFERENCES `users`
(`idUsers`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `pictures`
--

LOCK TABLES `pictures` WRITE;
/*!40000 ALTER TABLE `pictures` DISABLE KEYS */;
INSERT INTO `pictures` VALUES (0,'https://i.imgur.com/ZAO7OL9.jpg',0),
(1,'https://i.imgur.com/ZAO7OL9.jpg',0),
(2,'https://cdn-files.apstatic.com/climb/111214049_large_1494343131.jpg',0),
(3,'https://cdn-files.apstatic.com/climb/109008245_large_1494302719.jpg',0),
(4,'https://cdn-files.apstatic.com/climb/112806378_large_1494316128.jpg',0),
(5,'https://cdn.ukc2.com/i/226639.jpg',0),
(6,'https://cdn-files.apstatic.com/climb/107381362_medium_1494185290.jpg',0),
(7,'https://cdn-files.apstatic.com/climb/106540193_large_1494118505.jpg',0),
(8,'https://i.imgur.com/mPvk4K8.jpg',1),
(9,'https://i.imgur.com/diYnE9u.jpg',0),
(10,'https://i.imgur.com/v3KWW1Y.jpg',0),
(11,'https://cdn-files.apstatic.com/climb/106396576_large_1494104985.jpg',1),
(12,'https://cdn-files.apstatic.com/climb/115193380_large_1536762896.jpg',NULL),
(13,'https://cdn-files.apstatic.com/climb/106891531_large_1494148857.jpg',1),
(14,'https://cdn-files.apstatic.com/climb/108735925_large_1494294609.jpg',1),
(15,'https://i.imgur.com/mwQkSeO.jpg',5),
(16,'https://imgix.ranker.com/node_img/66/1314165/original/john-salathe-all-people-photo-1?w=650&q=50&fm=pjpg&fit=crop&crop=faces',6),
(17,'https://www.thoughtco.com/thmb/K0fHWc9qVl4w0Vsilxf4eeyYlek=/768x0/filters:
no_upscale():max_bytes(150000):strip_icc()/Tenzing-Norgay-and-Edmund-Hillary-
58c199a73df78c353c2a70bd.jpg',8),
(18,'https://www.thoughtco.com/thmb/K0fHWc9qVl4w0Vsilxf4eeyYlek=/768x0/filters:
no_upscale():max_bytes(150000):strip_icc()/Tenzing-Norgay-and-Edmund-Hillary-
58c199a73df78c353c2a70bd.jpg',9);
/*!40000 ALTER TABLE `pictures` ENABLE KEYS */;
UNLOCK TABLES;
```

7 Implementation of Code

All code is available on GitHub at https://github.com/stevenwalton/551/tree/master/Final

Functions for relevant tables are located in the */src* directory. All API calls will be located within these files. Other functions are located in the */scripts* directory, as most of these are single time use pages and display different things based on user input. Some of them are just helper pages and will redirect back to the relevant location.

The database and MySQL Workbench files are located in */database*.

8 Conclusion

I believe that this is a workable database and would represent a state of the art system! If it were 1995. Overall, I believe that there is a lot of utility in the user generated system and having users be able to contribute to a database freely. This site accomplishes these goals.

If I had more time, I would have locked some things down in the database. It is completely unprotected at this point. This means that someone can come in and drop all the tables. Luckily everything is not important and everything is backed up (both the tables and the code). Given more time I could have created API calls and a cron job to automatically backup in a given time window. This would be done if it was not just a school project.