

Ryan Howerton

12/4/2018

CS 340

Project Final Submission

URL: <http://flip2.engr.oregonstate.edu:3436>

Note that you must be on the OSU network.

## Feedback by the reviewers:

### Step 6:

“Hi Ryan,

Here are some notes I have:

- The pokemon update work fine for the most part. The main thing that causes it to have problems is negative number input (see below for additional detail).
- The number inputs allow negative numbers and it seems like it's causing errors on the backend. Number range constraints can be easily added through min and max attributes for input element. Link: [https://www.w3schools.com/tags/att\\_input\\_type\\_number.asp](https://www.w3schools.com/tags/att_input_type_number.asp)
- I am still getting a message that there is a SQL query syntax error for the insert into moves. Otherwise, everything else looks good. Keep up the good work!” – Joseph Shin

“Hi Ryan,

Looks good, update absolutely works on pokemon so good job with that. I get weird results when I try and search and press enter versus when I search and click "search". It looks like you hooked up enter to do something as I see the url change, but it still only reloads for me. I still also get an SQL error when I try and add a move, but everything else seems to work fine. Keep it up and good luck for the final!” – David Sahni

“Hey Ryan,

It looks like the updating for pokemon works and I also get some strange results with the search functionality. Other than some minor things, it looks pretty good so far. Great work.” – Forrest Hellard

“I get the following error when inserting into moves, no matter what value I try:

```
{"code":"ER_PARSE_ERROR","errno":1064,"sqlMessage":"You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near '? , ? , ? , ?)' at line 1","sqlState":"42000","index":0,"sql":"insert into moves (name, type1, power, accuracy, category) values (?, ?, ?, ?, ?)"}
```

It seems that there is a problem with your sql syntax.

Other than that, I don't see major issues with the site. I do believe the design could be slightly improved by adding margins between some of the elements Particularly in the lists of pokemons. It is quite difficult to read some of the items as they are run together.

-- Sean Moss

Hi Ryan,

So on your pokedex page, I can't seem to add. It just gets stuck and doesn't move, and I'm not getting an error message. It might be because I'm trying to add invalid values, like 999 and -1, though I also can't seem to get valid numbers to work. As for updates, it seems to work well, but it won't let me change a value to negative, which I assume is intended.” – Le-Chuan Chang

“Update works well for the pokemon but results in 404 not found for moves. Are there any plans to connect each pokemon with the associated moves of its type?” – Benjamin Alley

## Step 5:

Hi Ryan,

Your READ and DELETE functionalities for pokemon, types, and moves are working well. Also, good job getting your select options for pokemon types and move types to dynamically load.

I wasn't able to add any moves, there seems to be some syntax error for your sql query to insert a move.

I tried searching for pokemon in your pokedex page, but I'm not sure if it is working because the list of pokemon isn't changing.

Your navigation links list (at the top) seem to change depending on what page you're on, which is fine, but when I'm in the moves page there is not link to the pokedex page.

Also, I'm assuming that your region maps page is still under construction.

Other than those things, your project is looking good. Keep up the good work.” – Joseph Shin

Hey Ryan,

The pokedex page implements the read and delete functions well, and the search works but only if you click "submit". If you try and search with the enter key, the page just reloads. Add, read, and delete all work for types, but only read and delete work for moves. Adding a move results in a page error. Things line up with your pdf, and you seem to be on the way to update functionality. Looks like the region map page still needs to be implemented, but you are on the right path!” – David Sahni

Hi Ryan,

This website is coming along nicely. There are some minor issues, that should be easy to fix. I would go over your SQL, just because it will not allow the user to create a new move. Also, as someone else noted, the search bar functionality could be improved by allowing for the user to just press enter. The overall navigation could be improved, and there should be an easier way for the user to jump from page to page. Besides those minor issues, it looks good.” – Forrest Hellard

“I also get a sql error when trying to add a new move. The sql error message just mentions the problem is near your insert query, but it looks fine as far as I can tell, so I'm betting it's something adjacent to it. The searches for a move by name and pokemon by name work well. Add and delete works for type as well as pokemon. The links for the region maps isn't working for me, giving me a 404 not found error. Same thing happens if you click search with nothing in the field probably since it just goes to "/search" and not "/search/:id". Also, view moves page has a link to view moves page and not pokedex so you have to go to type chart to get back to pokedex.” – Benjamin Alley

“I also am getting an error when adding a new move. Other than that, I think your site could benefit from a little more css, to make it slightly less cluttered and more readable. I'm thinking particularly of the form fields for adding new entities. A bit of margin between them would make it more attractive and usable. The columns with large numbers are also somewhat hard to read. Other than that, everything seems to work as expected and it seems to match your original plan!” – Sean Moss

“Hi Ryan,

So one thing I should note is you can make pokemon have negative numbers for stats and, as some of the data already in the table shows, very high stats. I'm pretty sure pokemon stats are capped at 0 to 255, so you may want to make a Javascript check for that. I also noticed that your Moves page doesn't support adding or updating, but it does support deleting (I deleted Pound to see if it would work, it does). You can't access the pokedex from the move page, so you should readd that.” – Le-Chuan Chang

#### **Step 4:**

“Hi Ryan,

Your site looks great! The form on the insert page works and I can see the new pokemon displayed after I submit. The links on the top of the pokedex page don't work, but I am sure you are aware of that! Looks like you also have to implement Inserts for types and moves, but since the pokemon page was done so well I am sure those will be quick work. Seem to be on the right track, keep it up!” – David Sahn

“Hi Ryan,

Create functionality works nicely for the pokemon.

I'm assuming the links that lead to 404 pages are ones that you are just currently working on.

Your INSERT queries look good.

I'm looking forward to seeing your other pages. Keep up the good work!” – Joseph Shin

“Hi Ryan,

Site looks great! I like that you have a bunch of attributes for each Pokemon, makes me miss playing it back in the day. And I am a fan of the search bar, it works well!

I did notice, however, that searching then going back to the original page was tedious since I had to press back several times. Don't mean to sound nit-picky.

Queries look good, and I'm looking forward to your next revision of the site.” – Patrick Kim

“What you have looks good, I'm going to assume your National Pokedex Draft homepage will eventually have a description of the site or something. I would set a blank box for secondary and have it as the default, since not all Pokemon have a second type. Good job having the add and delete work.” – Le-Chuan Chang

“Hi Ryan,

I love how easy this site is. The create functions worked great and I loved the inclusion of the search bar. There could be some minor user improvements, but nothing major.” – Forrest Hellard

“Hi Ryan. Good work here! It looks like you can add and delete for pokemon and the many to many relationship works well. It also looks like, as is the case for most of us, you have more work to do in order to display the rest of the information in the database, but you've got a good start! I'm sorry , but I deleted your pikachu. I put him back, but he's a little disfigured.” – Benjamin Alley

### **Step 3:**

“Hey, Ryan. Your site looks like it has some good bones for you to build on with your project. Your SQL queries look great too. I would mention that you might want some more functionality to delete and update for other tables than pokemon and moves respectively. Other than that, everything looks really good!

A couple side things I will mention are that if you choose to host your site from your public\_html folder in your Z drive, you actually don't need to be on the OSU network to access it. It's a good spot for hosting personal projects to show potential employers! Also, I highly recommend draw.io as a free online resource for erd's and schema's. I've found that it's been really useful for the class.” – Benjamin Alley

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“Hi Ryan,

Don't forget to include add/update/delete functionality. Your site is very straight forward, which is good, but assuming you intend to include all the Pokemon, I would suggest you put the navigation links on the top so you don't have to scroll all the way down to navigate.

I'm not sure if your website should have client side SQL functionality, though, since only Nintendo can add pokemon/regions/types, so I would suggest creating an admin page for your use to fill out the tables." – Le-Chuan Chang

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"Hey Ryan,

This looks great and I love the overall concept. I also agree with the above statement that the add/update/delete functionality needs to be added. Other than that, your SQL queries look awesome and everything is on the right track." – Forrest Hellard

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"Hey Ryan,

I like your website, but as others have mentioned I think it could use a bit on the editing/deleting side. I wasn't able to find a way to edit/delete any entries. Nice queries as well, thanks for commenting on each of them." – Patrick Kim

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"Hi Ryan,

This was a nice "universe" to pick, it's fun and has a lot of data to demonstrate relationships. Most functionalities seem to be present, except the one mentioned in the other reviews. The DDQ and DMQ seem to be technically correct as well, but it might be good to avoid spaces in the aliases unless you explicitly need them. I like your view, it's very intuitive. I can see this turning into a beautiful website if you add some nice styling and images (just an opinion). Keep up the good work!" – Joseph Shin

## Step 2:

ERD: 1. The outline and ERD agree with one another. 2. I don't believe the pokemon HAS region participation is correct. (I could be wrong) but shouldn't a pokemon have at least one region, and a region have at least one pokemon? I think both should be total participation, not partial. Also review Types HAS A pokemon. Can a type exist without a matching pokemon? As drawn, it can. 3. Cardinality agrees with outline 4. I think the ER and outline are adequate SCHEMA: 1. Tables are defined and are present correctly. 2. Foreign keys are defined and put in place correctly. 3. Yes, attributes match 4. I think the database design is adequate and any improvements that I can think of don't add anything to the projects requirements. DDQ: The data types, tables, and keys all make sense and follow the outline as given. The SQL syntax also appears correct. Great work!

I don't see locations in the ERD, how is it related to the other entities. Since Pokemon and type have a many to many relationship in the schema create a table for this relationship. Same goes for the Pokemon and region relationship. Create those additional tables in SQL.

## Step 1:

I think you did a really good job of describing what the reason and use of this database is, but it might be helpful to add a brief description of what pokemon are, so people can kind of get a sense of the world. You were very thorough with the Tables that you chose, and it looks like you've covered everything. One of the tables, the Categories Table, might be better if it was just absorbed into the

category attribute of the Moves table -- You probably don't need a Table for Categories because there will only be the three options. Also, your Location table might need a location name attribute. You could also add in the relationship that says that locations are in regions? There's a lot of good stuff here, though! Hope my comments help!

## **Actions based on the feedback:**

### **Step 6:**

1. I finished the UPDATE pages for the types and moves.
2. I introduced limits on the stat inputs (HP, ATK, etc.), and added in prompts to inform users about the range.
3. I think I finally fixed the issue with adding a new move.
4. I played around with the search function, but that has remained the same while I think about an alternative.
5. I am going to be adding some formatting for the final product.

### **Step 5:**

1. I fixed the issue with inserting a move into the moves list, it should now be working correctly.
2. I added error checking for adding a Pokémon, it should now no longer allow adding a pokemon with stats above 255 or below 1.
3. I fixed the link on the moves page to link back to the Pokémon page.
4. I am going to be working on adding some formatting to the page over the course of the next couple weeks.

### **Step 4:**

1. I added all of the missing pages (except regions), and gave them full insert, delete, and search functionality.
2. I added a null box for Secondary Type that submits null to the database.

### **Step 3:**

First, I corrected my statement that one has to be on the OSU network to access my website, as that is false. Second, I have now taken a look at draw.io as per Ben's suggestion. Third, I went into all of my current html files and added sections to add Pokémon, moves, and types. Finally, I added two queries to the queries file to let users add types and moves.

### **Step 2:**

I changed the participation between Pokémon and regions to be total in both directions as suggested by the first review. I also changed the relationship between Pokémon and types to be one-to-many/many-to-one as suggested by the second review.

I did not change the Pokémon:type relationship, as types can exist without Pokémon (moves can have types) but Pokémon cannot exist without types. I also did not create an extra table for locations, because it already exists in the “are found in” relationship. I could change one name or the other, but the table does exist.

### **Step 1:**

I didn't follow the advice of absorbing the categories into the moves table, because I want to ensure that the moves can only be one of 3 categories. I did not add the location name to the location table, as the name is the region's name as specified by the region ID, which will be appearing multiple times for each appearance for every Pokémon. I did however add more detail to the “Pokémon are from regions” category to make that clearer. Finally, I added a more detailed description of what the Pokémon games are, not in-depth what Pokémon creatures are, as the database is supposed to be a helper of sorts for the games.

### **Upgrades to the Draft version:**

N/A

**a. Fixes based on Feedback from Step 5:**

- I fixed the issue with inserting a move into the moves list, it should now be working correctly.
- I added error checking for adding a Pokémon, it should now no longer allow adding a pokemon with stats above 255 or below 1.
- I fixed the link on the moves page to link back to the Pokémon page.
- I am going to be working on adding some formatting to the pages over the course of the next couple weeks.

**b. Project Outline and Database Outline, ERD, and Schema:**

## Pokémon Database

### Project Outline:

I will be making a database based the Pokémon games (property of The Pokémon Company, which is co-owned by Nintendo, Game Freak, and Creatures, Inc.). In the main Pokémon video games, the player character is a child travelling the world (split into regions), completing some sort of challenge to become the best Pokémon trainer of the land. Pokémon are creatures with essentially what equate to superpowers that the player uses to battle other trainers to advance. There are now hundreds of Pokémon, each with their own abilities that players can find and add to a team, so this website is an attempt to organize them into a quick reference.

The website will allow a user to search up any Pokémon, and see information such as their type(s), stats, possible moves, and what regions the Pokémon can be found in. Every Pokémon has one or two types, a set of 6 numbers that define their stats in-game. Pokémon game focuses on a particular region, which is essentially just a different map for the player to explore, but many Pokémon can be found in different regions. Lastly, a user can search up a move to find its type, its power, and its category (described below).

### Database Outline:

**Pokémon:** this will contain a list of every Pokémon currently available and is the core of the database. This list will have a relation with all other lists in the database. It has the following attributes:

- id: a unique number assigned to the Pokémon as it is added to the database. This will be the primary key.
- name: the name of the Pokémon in English. The name cannot be null, cannot be longer than 15 characters, and has no default.
- type1: the primary type of the Pokémon. This cannot be null but does not have a default. The value will be the id of the type as found in the Types table.
- type2: the secondary type of the Pokémon. This can be null and does not have a default. The value will be the id of the type as found in the Types table.
- hp: the first stat number, showing how many health points a Pokémon will have relative to others. This is an integer value that cannot be null.



- **atk:** the second stat number, showing how much physical attack power a Pokémon will have relative to others. This is an integer value that cannot be null.
- **def:** the third stat number, showing how much physical defense a Pokémon will have relative to others. This is an integer value that cannot be null.
- **sp\_atk:** the fourth stat number, showing how much special attack power a Pokémon will have relative to others. This is an integer value that cannot be null.
- **sp\_def:** the fifth stat number, showing how much special defense a Pokémon will have relative to others. This is an integer value that cannot be null.
- **spe:** the sixth stat number showing how fast a Pokémon is relative others. This is an integer value that cannot be null.

**Types:** this will contain a list of every type that can currently be found in the Pokémon games. It has the following attributes:

- **id:** a unique number automatically assigned to the type. This cannot be null, and auto-increments. This is the primary key.
- **name:** the name of the type in English. This is a string value that cannot be null and can be a maximum of 8 characters but does not have a default value.

**Regions:** the list of regions from every main Pokémon game.

- **id:** an automatically incrementing number assigned to each region. This number cannot be null and is the primary key.
- **name:** the name of the region in English. This is a string value that cannot be more than 6 characters.

**Locations:** Pokemon can be found in many different regions, and this lists what regions each Pokémon can be found in.

- **rid:** the id number of the region. This is an integer corresponding to the intended region. This cannot be null.
- **pid:** the id number of the Pokémon. This is an integer corresponding to the intended Pokémon. This cannot be null.

**Moves:** the list of all moves found across all Pokémon games.

- **id:** this is a unique number corresponding to each move. This number cannot be null and is automatically incrementing. This is the primary key.
- **name:** the name of the move in English. This is a character string that cannot be null.
- **type1:** the type of the move. This is an integer that corresponds to the id of the type of the move. Cannot be null.
- **power:** the power of the move. This is an integer number, which can be null.
- **accuracy:** the accuracy of the move. This is an integer number that can be null.
- **category:** the category of the move. This is an integer value that corresponds to the categories table, and cannot be null.

**Categories:** the possible categories of Pokémon moves.

- **id:** this is a unique auto-incrementing number to define the move. It cannot be null, and is the primary key.

- **name:** the actual name of the category. This is a string that should only be “Physical”, “Special”, or “Status”. Cannot be null.

The relationships in the database are:

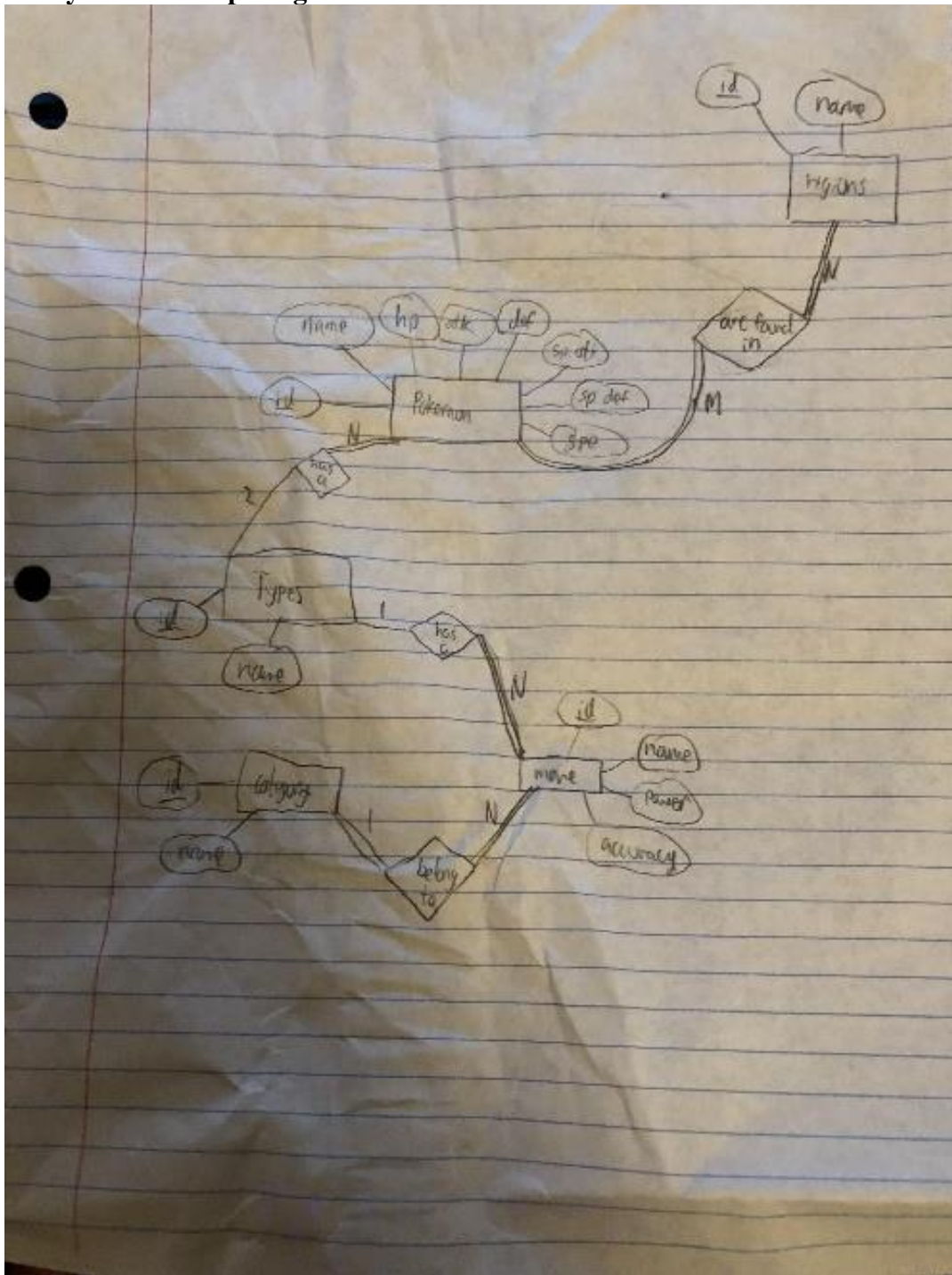
**Pokemon have types:** a Pokémon can be one or two types, but many Pokémon are the same type (if not the same combination). This is a one-to-many relationship, as a Pokémon can be one or two different types, but many Pokémon can be many different combinations of types.

**Pokemon are from regions:** a Pokémon are found in regions, but a region has many Pokémon. Sometimes regions have Pokémon that were previously found elsewhere, so this is a many-to-many relationship, as defined by the Locations table.

**Moves have types:** a move can have one, and only one, type. This is a one-to-many relationship as many moves can be the same type.

**Moves have categories:** a move can be one of three categories. This is a one-to-many relationship as all moves have to share the same categories.

c. Entity-Relationship Diagram:



d. Schema:

*Pokemon*(  
id,  
 name,  
 type1,  
 type2,

hp,  
atk,  
def,  
sp\_atk,  
sp\_def,  
spe);

*Types*(  
id,  
name);

*Moves*(  
id,  
name,  
type1,  
power,  
accuracy,  
category);

*Categories*(  
id,  
name);

*Regions*(  
id,  
name);

*Locations*(  
rid,  
pid);