

Zoe Gershuny  
CS 340 – Intro to Databases  
Portfolio Assignment

## EXECUTIVE SUMMARY

There were many feedback and changes made to this project since the beginning of the term in March. The first major change was switching the project when I decided to work alone, which was changing the topic from Pokemon to Baseball cards. Due to the time left to work on the project from scratch, the project is scaled down to make it easier for a team of one to accomplish most if not all minimum requirements.

The Project Overview, Outline, diagrams, Data Manipulation, data dump, and Search and Display View pages were completed for Step 5 Draft submission on Piazza. Based on the feedback, I incorporated strategies to debug. Strategies are:

- Conditional display to confirm that the action was completed
- Conditional coding outputted in the console to pinpoint me where in the code was the error
- Chrome Developer Tools display error status so I have an idea what to look for: 404 vs 500.

For the Step 6 Draft submission, everything was completed except for INSERT to add the corresponding FK attributes. The feedback suggested areas for UI improvements, such as moving all INSERTS to single page and redirecting instead of going to the confirmation page. The changes made were making a single page for each table that will populate a list utilizing all CRUD functionalities. If not found, the user will be asked to add. The Full View under Display View has been modified so that the user can change associations. For example, the user can change the card's information to a different player or team. In addition, a form has been implemented so that the user can add all information at once for a new card.

## OVERVIEW

The database is for the user's collection of baseball cards. The user will be able to see what they currently have in their collection from one to over thousands of cards.

It is possible to keep track of the collection on an Excel spreadsheet but as the collection grows it becomes difficult to manage over 4,000 rows. There are many collectors out there who have over 40,000 cards. The database will help to manage the size and speed and in addition to better search for exactly what you have in your collection. The database should be easily expanded to include a wide range of options, such as the oldest known baseball card is from 1860, multiple brands and series (similar to there are car companies who makes different model and series), and teams and players from all over the world at various organizations from college to international.

Each card is unique in that it has its own grade, type, condition, and other features. It is possible that two cards can be the identical in player, team, and grade, but the cards are rarely identical because of the condition. There are different factors that could determine a grade. For example, one card could have a soft corner, but another card has a scratched surface and be graded the same.

Not only the user will be able to see their collection, but also the list of teams and players in their collection. In addition, the user will be able to see the list of teams that the player played for and the list of players played for that team. This is important for collectors because there are many types of

collectors. Some collect certain players regardless of their team affiliations and others collect any players on one team. There are also other collectors that build sets. They will collect all cards from a certain brand's series. This information will help to facilitate the conversation so that the person would not have to physically look through their cards.

### DATABASE OUTLINE

(I am responsible for the entire project)

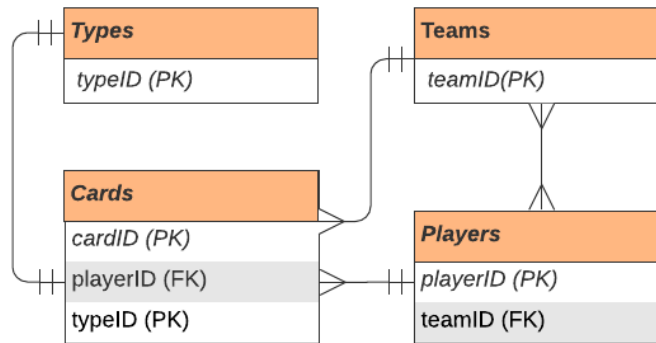
- **Players:** contains the list of all baseball players' first and last name that are on baseball card(s)
  - Attributes
    - *playerID*: int(11), auto\_increment, not NULL, PK
    - *p\_fName*: varchar(255), not null
    - *p\_lName*: varchar(255), not null
  - Relationships
    - 1:M relationship between Players and Cards implemented with a playerID as a FK inside Cards
    - M:M relationship between Players and Teams implemented with a playerID and Teams' teamID as FKs inside Cards
- **Teams:** contains the list of all baseball teams' location and name that the players play for
  - Attributes
    - *teamID*: int(11), auto\_increment, not NULL, PK
    - *location*: varchar(255), not null
    - *teamName*: varchar(255), not null
  - Relationships
    - 1:M relationship between Teams and Cards implemented with a teamID as a FK inside Cards
    - M:M relationship between Teams and Players implemented with a teamID and Players' playerID as FKs inside Cards
- **Cards:** contains the information about to the cards – year produced, brand that made the card, grade rating, description, and player and team on the card. Also serves as an associate table to make Players and Teams M:M
  - Attributes
    - *cardID*: int(11), auto\_increment, not null, PK
    - *playerID*: int(11), nullable, FK
    - *teamID*: int(11), nullable, FK
    - *typeID*: int(11), nullable, FK
    - *cardYear*: int(11), not null
    - *cardBrand*: varchar(255), not null
  - Relationships
    - M:1 between Cards and Players is implemented with a playerID as a FK inside Cards
    - M:1 between Cards and Teams is implemented with a teamID as a FK inside Cards
    - 1:1 between Cards and Types is implemented with a typeID as a FK inside Cards
      - NOTE: This can be a M:M relationship as there are many types of cards. Various types include Rookie Card, Prospect Card, refractor, parallel, numbered, autographed, insert. It is also possible that one card can have multiple of these features. However, due to the project specifications, one M:M is required to be implemented, which will be Players and Teams with Cards as the Associate Table. Types will be designed so that it is 1:1 with Cards and meets the specifications.

- **Types:** contains the grade and description for each card
  - Attributes
    - *typeID*: int(11), auto\_increment, not null, PK
    - *grade*: float, not null
    - *description*: varchar(255), nullable
  - Relationships
    - 1:1 between Cards and Types is implemented with a typeID as a FK inside Cards
      - NOTE: This can be a M:M relationship as there are many types of cards. Various types include Rookie Card, Prospect Card, refractor, parallel, numbered, autographed, insert. It is also possible that one card can have multiple of these features. However, due to the project specifications, one M:M is required to be implemented, which will be Players and Teams with Cards as the Associate Table. Types will be designed so that it is 1:1 with Cards and meets the specifications.

## DIAGRAMS

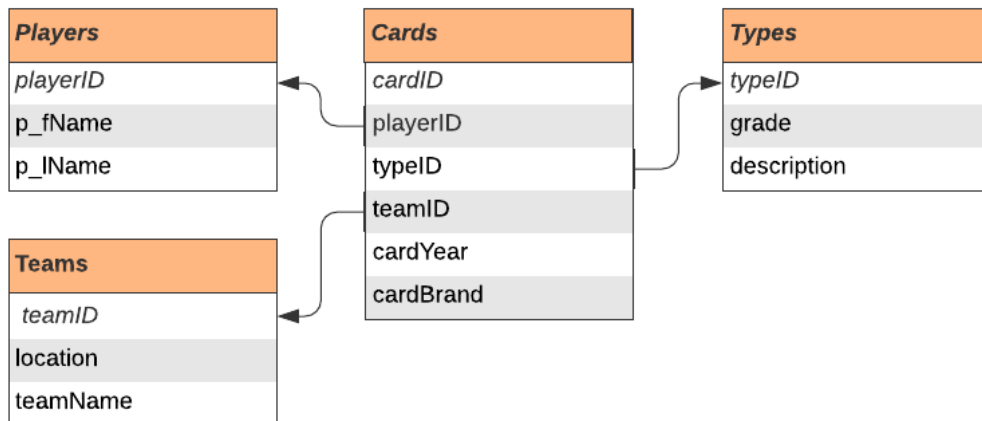
### ERD

Zoe Gershuny | May 25, 2020



### Schema

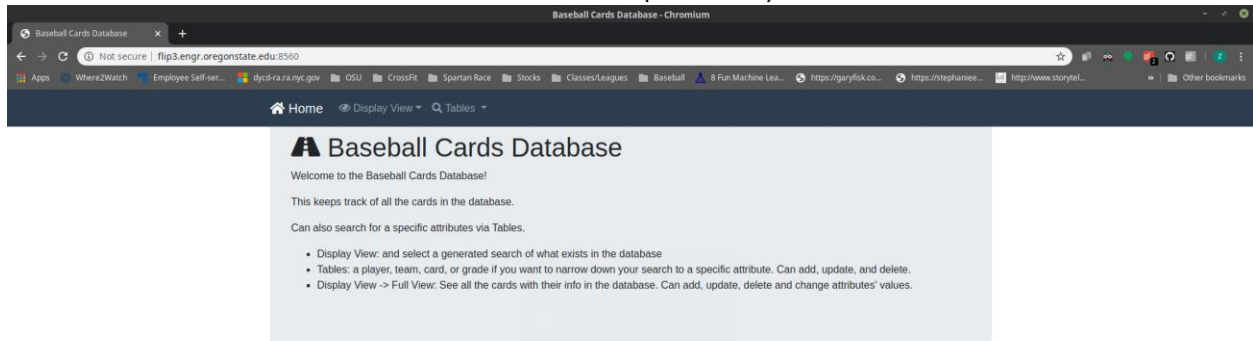
Zoe Gershuny | May 25, 2020



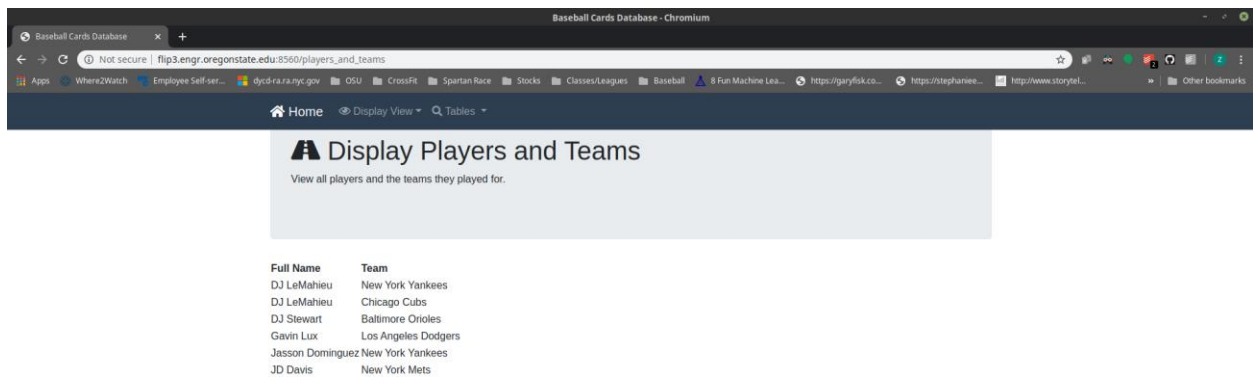
URL: <http://flip3.engr.oregonstate.edu:8560/>

## UI SCREENSHOTS WITH INFORMATIVE TITLES

### HOME PAGE (NO CRUD)



### READ PLAYERS AND TEAMS



URL: <http://flip3.engr.oregonstate.edu:8560/>

## READ CARDS AND PLAYERS

The screenshot shows a web browser window with the address bar displaying "http://flip3.engr.oregonstate.edu:8560/cards\_and\_players". The page title is "Baseball Cards Database - Chromium". The navigation bar includes "Home", "Display View", and "Tables". The main content area is titled "Display Cards and Players" with the subtitle "View all cards associated to all the players." Below this, a table lists the following data:

Full Name	Card
DJ LeMahieu	2011 Topps Series 1
DJ LeMahieu	2020 Topps Series 1
DJ Stewart	2020 Topps Series 1
Gavin Lux	2020 BOWMAN Chrome
Jasson Dominguez	2020 BOWMAN Chrome
JD Davis	2017 LEAF Flash

## READ CARDS AND TEAMS

The screenshot shows a web browser window with the address bar displaying "http://flip3.engr.oregonstate.edu:8560/cards\_and\_teams". The page title is "Baseball Cards Database - Chromium". The navigation bar includes "Home", "Display View", and "Tables". The main content area is titled "Display Cards and Teams" with the subtitle "View all the cards associated to all the teams." Below this, a table lists the following data:

Team Name	Card
Baltimore Orioles	2020 Topps Series 1
Chicago Cubs	2011 Topps Series 1
Los Angeles Dodgers	2020 BOWMAN Chrome
New York Mets	2017 LEAF Flash
New York Yankees	2020 BOWMAN Chrome
New York Yankees	2020 Topps Series 1

URL: <http://flip3.engr.oregonstate.edu:8560/>

## READ CARDS, PLAYERS, AND TEAMS

Baseball Cards Database - Chromium

Not secure | flip3.engr.oregonstate.edu:8560/cardsPlayersTeams

Home Display View Tables

### Display Cards, Players, and Teams

View all the cards associated to all the teams.

Card	Full Name	Team Name
2011 Topps Series 1	DJ LeMahieu	Chicago Cubs
2017 LEAF Flash	JD Davis	New York Mets
2020 BOWMAN Chrome Gavin Lux		Los Angeles Dodgers
2020 BOWMAN Chrome Jasson Dominguez		New York Yankees
2020 Topps Series 1	DJ LeMahieu	New York Yankees
2020 Topps Series 1	DJ Stewart	Baltimore Orioles

CREATE, READ, UPDATE, DELETE CARDS  
READ, SELECT (AND CHANGE ATTRIBUTE VALUES) PLAYERS  
READ, SELECT (AND CHANGE ATTRIBUTE VALUES) TEAMS  
CREATE, READ, UPDATE, DELETE (IF ASSOCIATED WITH CARDS) TYPES  
CREATE CARDS AND ADD THE CORRESPONDING FK ATTRIBUTES  
PREPOPULATED DROPDOWN FOR PLAYERS AND TEAMS

Baseball Cards Database - Chromium

Not secure | flip3.engr.oregonstate.edu:8560/fullView

Home Display View Tables

### Full View

View all the cards with their complete information (Cards, Players, Teams, and Types).

Change Attributes' values for Player, Type, and Team (ie different player). Delete a Card and its type if associated.

Add a new card (catalogue) by entering the year and brand, selecting existing player and team, and determining the grade and noting description. Year, Brand, and Grade are required fields. If you want to add a player or team at a later time, please do not change the values and leave it as "Player" or "Team".

Can also update Card and Type.

#### Catalogue a New Card

Year: 2020 Brand: Bowman Select: Player Select: Team Grade: 9.5 Description: gem mint!

Submit

Year	Brand	First Name	Last Name	Location	Team Name	Grade	Description	Update	Change
2011	Topps Series 1	DJ	LeMahieu	Chicago	Cubs	9.5	gold parallel rookie card in near perfect condition!	Card	Team
2017	LEAF Flash	JD	Davis	New York	Mets	8.5	draft card auto, slightly off-centered and soft bottom right corner	Type	Player
2020	Topps Series 1	DJ	LeMahieu	New York	Yankees	9.5	Non auto base Rookie Card, surface/edge clean, soft top left corner	Card	Team
2020	BOWMAN Chrome	Gavin	Lux	Los Angeles	Dodgers	7	Chrome orange parallel 24/50 auto, surface scratched and not centered	Type	Player

Update Change

Card Type Player Delete

Card Type Player Delete

Card Type Player Delete

Card Type Player Delete

URL: <http://flip3.engr.oregonstate.edu:8560/>

### UPDATE CARD (VIA FULL VIEW)

The screenshot shows a web browser window titled 'Baseball Cards Database - Chromium'. The address bar shows the URL 'http://flip3.engr.oregonstate.edu:8560/changeCard'. The page has a dark blue header with 'Home', 'Display View', and 'Tables' links. The main content area is titled 'Update Card' with the subtitle 'Update Card's Info - Year and Brand.' Below this, there are two input fields: 'Year' with the value '2020' and 'Brand' with the value 'Topps Series 1'. A blue 'Update' button is located below the 'Brand' field.

Year  
2020

Brand  
Topps Series 1

Update

### UPDATE TYPE (VIA FULL VIEW) DESCRIPTION IS NULLABLE (leave the box blank)

The screenshot shows a web browser window titled 'Baseball Cards Database - Chromium'. The address bar shows the URL 'http://flip3.engr.oregonstate.edu:8560/changeType'. The page has a dark blue header with 'Home', 'Display View', and 'Tables' links. The main content area is titled 'Update Type' with the subtitle 'Update Type's Info'. Below this, there are two input fields: 'Grade' with the value '9.5' and 'Description' with the value 'Non auto base Rookie Card, surface/edge clean, soft top left corner'. A blue 'Update' button is located below the 'Description' field.

Grade  
9.5

Description  
Non auto base Rookie Card, surface/edge clean, soft top left corner

Update

URL: <http://flip3.engr.oregonstate.edu:8560/>

### *UPDATE TEAMS (VIA FULL VIEW)*

*UPDATE IS NULLABLE (don't click on the drop-down, only click "Change")*

The screenshot shows a web browser window titled "Baseball Cards Database - Chromium". The address bar shows the URL "http://flip3.engr.oregonstate.edu:8560/changeTeam". The browser's tab bar shows "Baseball Cards Database" and a plus sign for additional tabs. The browser's bookmark bar shows several bookmarks including "Apps", "Where2Watch", "Employee Self-ser...", "dycd-ra.nyc.gov", "OSU", "CrossFit", "Spartan Race", "Stocks", "Classes/Leagues", "Baseball", "8 Fun Machine Lea...", "https://garyfok.co...", "https://stephamee...", and "http://www.storytel...". The browser's address bar shows "Not secure | flip3.engr.oregonstate.edu:8560/changeTeam". The browser's toolbar shows "Home", "Display View", and "Tables". The main content area of the browser shows a form titled "Associate Team" with the instruction "Select the Team for the Card". Below the instruction is a dropdown menu labeled "Designate 2017 LEAF Flash to this Team" with a downward arrow. Below the dropdown menu is a blue button labeled "Change".

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### *UPDATE PLAYERS (VIA FULL VIEW)*

*UPDATE IS NULLABLE (don't click on the drop-down, only click "Change")*

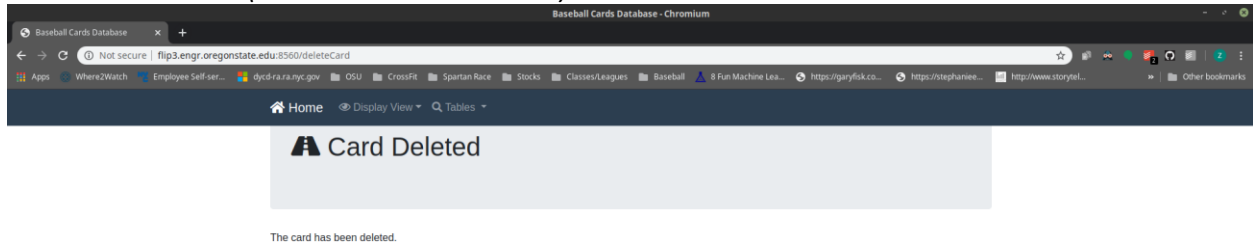
The screenshot shows a web browser window titled "Baseball Cards Database - Chromium". The address bar shows the URL "http://flip3.engr.oregonstate.edu:8560/changePlayer". The browser's tab bar shows "Baseball Cards Database" and a plus sign for additional tabs. The browser's bookmark bar shows several bookmarks including "Apps", "Where2Watch", "Employee Self-ser...", "dycd-ra.nyc.gov", "OSU", "CrossFit", "Spartan Race", "Stocks", "Classes/Leagues", "Baseball", "8 Fun Machine Lea...", "https://garyfok.co...", "https://stephamee...", and "http://www.storytel...". The browser's address bar shows "Not secure | flip3.engr.oregonstate.edu:8560/changePlayer". The browser's toolbar shows "Home", "Display View", and "Tables". The main content area of the browser shows a form titled "Associate Player" with the instruction "Select the Player on the Card". Below the instruction is a dropdown menu labeled "Designate 2011 Topps Series 1 to this Player" with a downward arrow. Below the dropdown menu is a blue button labeled "Change".

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URL: <http://flip3.engr.oregonstate.edu:8560/>

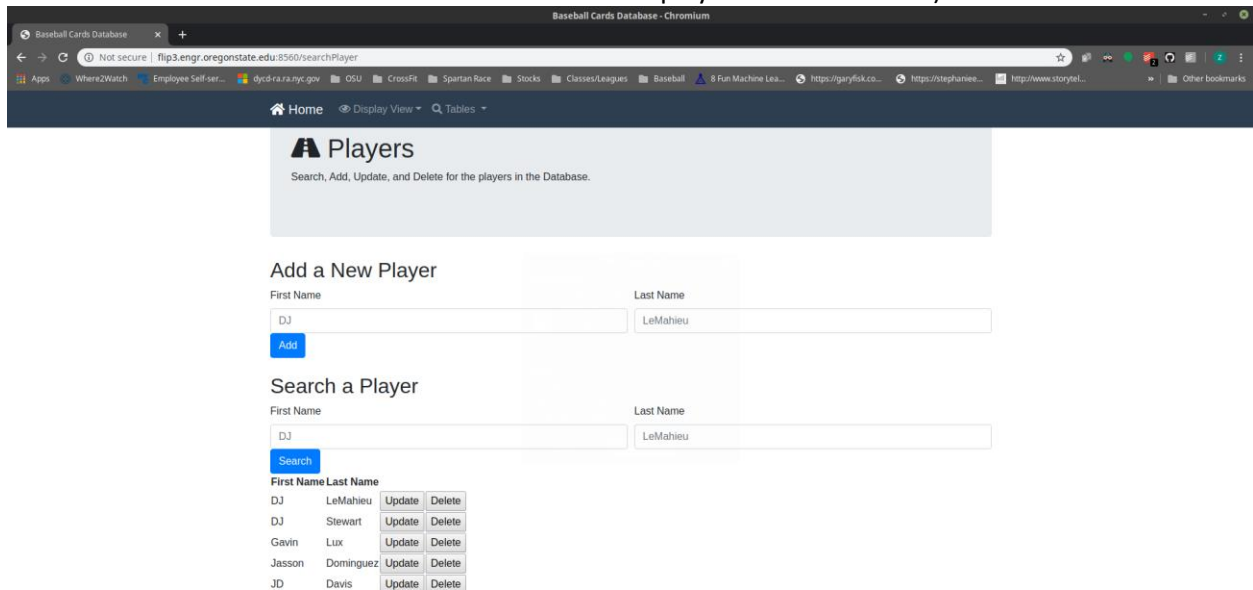
### DELETE CARD (AND TYPE IF ASSOCIATED) FROM THE FULL VIEW PAGE CONFIRMATION PAGE



### CREATE, READ, UPDATE, DELETE A PLAYER FOR THE PLAYERS' TABLE

#### SEARCH FOR A PLAYER BY FIRST, LAST, OR FULL NAMES

If PLAYER deleted, will not affect cards or teams (the player will not show up on Players and Teams unless if the team has other players associated to it)



URL: <http://flip3.engr.oregonstate.edu:8560/>

### CREATE A NEW PLAYER (IF PLAYER SEARCH DID NOT FIND ANY)

The screenshot shows a web browser window titled 'Baseball Cards Database - Chromium'. The address bar shows the URL 'http://flip3.engr.oregonstate.edu:8560/searchPlayer\_search'. The page has a dark blue header with 'Home', 'Display View', and 'Tables' links. Below the header is a light blue box with the title 'Search Cards by Player' and a baseball icon. The main content area is white and contains the text 'No records for Mickey.' followed by the heading 'Add a New Player'. Below this heading are two text input fields: 'First Name' with the value 'DJ' and 'Last Name' with the value 'LeMahieu'. At the bottom of the form is a blue 'Submit' button.

### UPDATE AND DELETE PLAYER AFTER SUCCESSFULLY SEARCHING A PLAYER

If PLAYER deleted, will not affect cards or teams (the player will not show up on Players and Teams unless if the team has other players associated to it)

The screenshot shows the same web browser window, but the page title is 'Baseball Cards Database - Chromium' and the address bar shows 'http://tools.engr.oregonstate.edu:8560/searchPlayer\_search'. The page has a dark blue header with 'Home', 'Display View', and 'Tables' links. Below the header is a light blue box with the title 'Display Cards by Player' and a baseball icon. The main content area is white and contains the text 'Found player(s) based on your entry.' followed by a table. The table has two columns: 'First Name' and 'Last Name'. There are two rows of data. The first row shows 'DJ' and 'LeMahieu' with 'Update' and 'Delete' buttons. The second row shows 'DJ' and 'Stewart' with 'Update' and 'Delete' buttons.

First Name	Last Name		
DJ	LeMahieu	Update	Delete
DJ	Stewart	Update	Delete

URL: <http://flip3.engr.oregonstate.edu:8560/>

*CREATE, READ, UPDATE, DELETE A TEAM FOR THE TEAMS' TABLE*  
*SEARCH FOR A TEAM BY LOCATION, NAME, OR FULL TEAM NAME*

If team deleted, will not affect cards or players (the team will not show up on Players and Teams unless if the player is also associated to another team)

The screenshot shows the 'Baseball Cards Database' web application. The main heading is 'Search Cards by Team' with a subtitle 'Search, Add, Update, and Delete for all the teams in the Database.' Below this, there are two forms: 'Add a New Team' and 'Search a Team'. The 'Search a Team' form has 'Location' set to 'Trenton' and 'Name' set to 'Thunders'. A 'Search' button is visible. Below the search form, a table displays the search results for 'Trenton'.

Location	Name	Update	Delete
Arizona	Diamondbacks	Update	Delete
Atlanta	Braves	Update	Delete
Baltimore	Orioles	Update	Delete
Boston	Red Sox	Update	Delete
Chicago	Cubs	Update	Delete
Chicago	White Sox	Update	Delete
Cincinnati	Reds	Update	Delete
Cleveland	Indians	Update	Delete
Colorado	Rockies	Update	Delete
Detroit	Tigers	Update	Delete

*CREATE A NEW TEAM (IF TEAM SEARCH DID NOT FIND ANY)*

The screenshot shows the 'Baseball Cards Database' web application. The main heading is 'Search Cards by Team' with a subtitle 'Search, Add, Update, and Delete for all the teams in the Database.' Below this, there are two forms: 'Add a New Team' and 'Search a Team'. The 'Add a New Team' form has 'Location' set to 'Trenton' and 'Name' set to 'Thunders'. A 'Submit' button is visible. Below the form, a message states 'No records for Trenton.'

No records for Trenton .

URL: <http://flip3.engr.oregonstate.edu:8560/>

### UPDATE AND DELETE TEAM AFTER SUCCESSFULLY SEARCHING A TEAM

If team deleted, will not affect cards or players (the team will not show up on Players and Teams unless if the player is also associated to another team)

The screenshot shows a web browser window titled 'Baseball Cards Database - Chromium'. The address bar shows the URL 'http://flip3.engr.oregonstate.edu:8560/searchTeam\_search'. The page has a dark blue header with 'Home', 'Display View', and 'Tables' links. Below the header is a light blue box with the title 'Display Cards by Teams' and the subtitle 'Found teams(s) based on your entry.' Below this box is a table with two columns: 'Location' and 'Team Name'. The table contains two rows: 'Los Angeles Angels' and 'Los Angeles Dodgers'. To the right of each row are two buttons: 'Update' and 'Delete'.

Location	Team Name	Update	Delete
Los Angeles	Angels	Update	Delete
Los Angeles	Dodgers	Update	Delete

### CREATE, READ, UPDATE, DELETE A PLAYER FOR THE CARDS' TABLE

SEARCH FOR A CARD BY YEAR, BRAND, OR BOTH

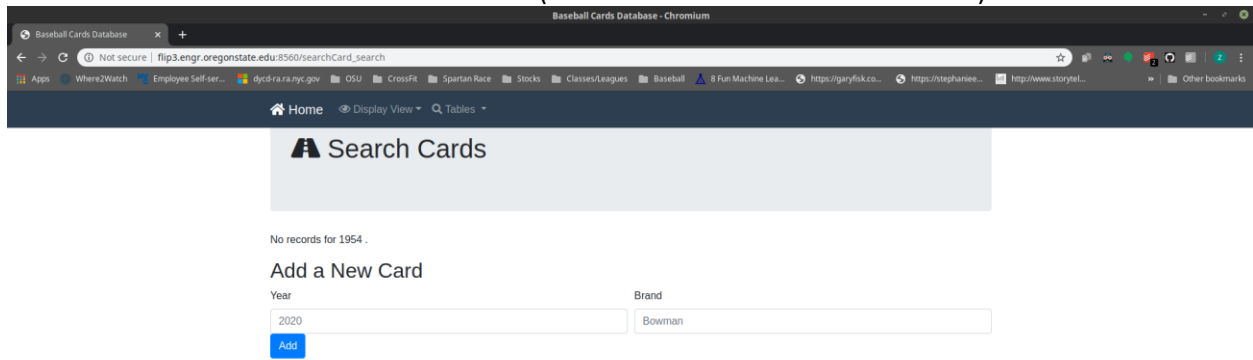
If deleted, will not delete Players, Teams, and Types

The screenshot shows a web browser window titled 'Baseball Cards Database - Chromium'. The address bar shows the URL 'http://flip3.engr.oregonstate.edu:8560/searchCard'. The page has a dark blue header with 'Home', 'Display View', and 'Tables' links. Below the header is a light blue box with the title 'Search Cards' and the subtitle 'Search, Add, Update, and Delete for all the cards in the Database.' Below this box is a form titled 'Add a New Card' with two input fields: 'Year' (containing '2020') and 'Brand' (containing 'Bowman'). Below these fields is a blue 'Add' button. Below the 'Add a New Card' form is a 'Search' section with two input fields: 'Year' (containing '2020') and 'Brand' (containing 'Bowman'). Below these fields is a blue 'Search' button. Below the 'Search' section is a table with two columns: 'Year Brand' and 'Update Delete'. The table contains five rows: '2011 Topps Series 1', '2017 LEAF Flash', '2020 Topps Series 1', '2020 BOWMAN Chrome', and '2020 BOWMAN Chrome'. Each row has 'Update' and 'Delete' buttons.

Year Brand	Update	Delete
2011 Topps Series 1	Update	Delete
2017 LEAF Flash	Update	Delete
2020 Topps Series 1	Update	Delete
2020 BOWMAN Chrome	Update	Delete
2020 BOWMAN Chrome	Update	Delete

URL: <http://flip3.engr.oregonstate.edu:8560/>

## CREATE A NEW CARD (IF TEAM SEARCH DID NOT FIND ANY)



Baseball Cards Database - Chromium

Not secure | flip3.engr.oregonstate.edu:8560/searchCard\_search

Home Display View Tables

### Search Cards

No records for 1954 .

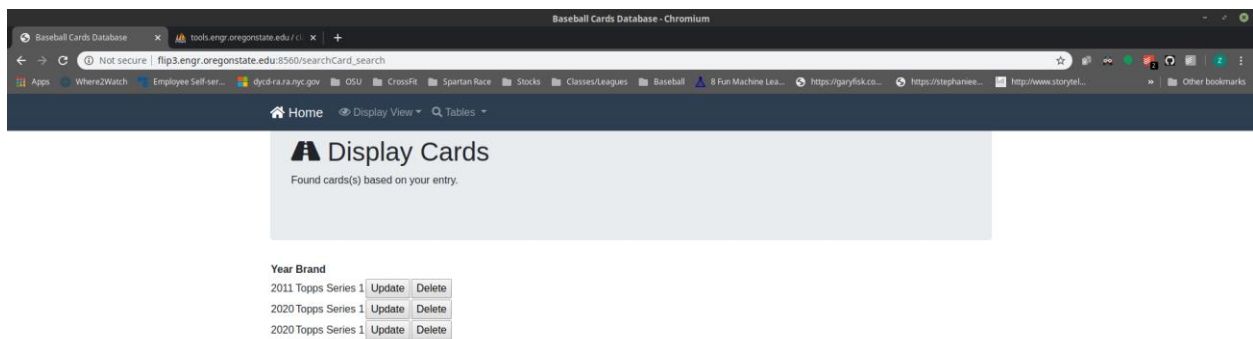
#### Add a New Card

Year Brand

2020 Bowman

Add

## UPDATE AND DELETE CARD AFTER SEARCHING A CARD



Baseball Cards Database - Chromium

Not secure | flip3.engr.oregonstate.edu:8560/searchCard\_search

Home Display View Tables

### Display Cards

Found cards(s) based on your entry.

Year	Brand		
2011	Topps Series 1	Update	Delete
2020	Topps Series 1	Update	Delete
2020	Topps Series 1	Update	Delete

URL: <http://flip3.engr.oregonstate.edu:8560/>

*CREATE, READ, UPDATE, DELETE A TYPE FOR THE TYPES' TABLE*  
SEARCH FOR A TYPE BY GRADE VIA THE PREPOPULATED DROPDOWN LIST  
Delete will not affect one on one relationship with Cards

The screenshot shows a web browser window titled "Baseball Cards Database - Chromium". The address bar shows the URL "http://flip3.engr.oregonstate.edu:8560/searchType". The page has a dark blue header with "Home", "Display View", and "Tables" links. The main content area is titled "Types" and includes instructions: "Add a new Grade and Description." and "Search, Add, Update, and Delete for all Types in the Database." Below this is a section "Add a New Description" with a "Grade" dropdown set to "9.5" and a "Description" text box containing "gem mint!". An "Add" button is below the form. A "Search" section features a "Select Grade" dropdown and a "Search" button. Below the search is a table of results:

Grade	Description	Update	Delete
0			
7	Chrome orange parallel 24/50 auto, surface scratched and not centered	Update	Delete
8.5	draft card auto, slightly off-centered and soft bottom right corner	Update	Delete
9.5	gold parallel rookie card in near perfect condition!	Update	Delete
10	GEM MINT BOWMAN Chrome AUTO!	Update	Delete

### UPDATE AND DELETE TYPE AFTER SEARCHING A TYPE

The screenshot shows the same web browser window, but the page title is "Baseball Cards Database - Chromium" and the address bar shows "http://flip3.engr.oregonstate.edu:8560/searchType\_search". The page header is the same. The main content area is titled "Display Cards by Grade" and includes the text "Found grade(s) based on your entry." Below this is a table of results:

Grade	Description	Update	Delete
8.5	draft card auto, slightly off-centered and soft bottom right corner	Update	Delete