**Birdon theBrain:**Booty for Birders

Core Functionality

* **Signup**
* **Signin**
* **Signout**
* **Data Sourced from Users**
  + Sighting Lists:
    - Backyard
    - Individual Outing
    - Annual
    - Lifetime
  + List Functions:
    - Create
    - Read
    - Update
    - Delete
  + List Content for Each Bird Sighting:
    - common name of bird
    - county
    - state
    - date
    - comments (optional)
    - image (maybe)
  + Searches: Users can search other users' data, using filters like the following:
    - Name of user
    - County of user
    - State of user
    - Name of bird
    - Dates of sightings
* **Data Sourced from eBird API: Cornell's database can allow users to search for info like the following**
  + Most recent sighting of specific bird in given geographical region (city, county, state, country)
  + Locations of birding sites most visited by area birders
  + List of "interesting" birds sighted in given geographical area
  + List of sighting "hotspots" nearby
  + Bird Behaviors
  + Average Weight
  + Conservation Status (e.g., endangered)
* **Links to Major Birding Websites**
  + Merlin
  + eBird

Technologies:

* Flask
* Python
* Jinja
* SQL Database
* API Calls To: Internal and External Databases
* HTML
* CSS

Additional Functionality as Time Permits:

* Tokenization: Day 6
* Blog
* Connect to free image hosting site to allow users to upload profile pics and pics of birds they've sighted
* Bird Fact of the Day
* Bird Pic of the day
* Bird Game (maybe hangman with only bird names
* Users can click on bird name as they add to their list to get more info on that bird (still looking for API)

Still To Do: Prioritized:

1. HomePage:
   1. Cat fact
   2. Cat image
2. start here postSightings Route:
   1. Test sightingpost route to see how lifetime/annual checks work if no prior entry of a bird to see how empty query works.
3. Enter dummy data for presentation\_\_make sure all years are set to 2022 (due to weakness in annual list fetch)
4. Ebird: Expand search from Indiana only to all states.
5. Error handling.
6. Prepare presentation
7. Investigate Token Required function/wrapper; pretty sure token is being automatically generated
8. Delete bird sighting function
9. Alter/Edit row in bird sighting list (shouldn’t be too hard once figure out altering due to lifetime and annual list check)

Execution Plan: Do main functions once, then go back and add iterations.

Keep it simple!

Test often!

Git Push Often!

1. Signin: (should be functional, but needs testing)
2. Register: ditto
3. Signout: ditto
4. User/Registration/Model/Form:
   1. Add fields to Class Registration From in authorms.py
   2. Update Registration form adding in new fields
5. Bird Model:
   1. ~~figure out how to add User id to bird model~~
   2. **Add columns:**
      1. Backyard [make this a checkbox]
      2. Annual (can tie to date column to keep annual lists separate)
      3. Lifetime
      4. Outing Label
6. Bird Form: see authforms for model
7. List Entry - CREATE BIRD SIGHTING:
   1. Create Database Model: (which should be bird model already created)
   2. Create Get route to render list entry page.
   3. Create Form Template:
      1. Should be able to have one simple page for all bird entries
      2. (Perhaps include checkbox now/later for backyard list)
      3. Would you like to associate these with a specific outing/trip? If so enter name here.
   4. Create post route:
      1. Get data from form template
      2. Input data into database
      3. Return success message to user.
      4. **User\_id is not yet being added to database**
      5. Check if in annual and lifetime lists and add if not.
         1. Error handling if bird not already in database and query returns empty list (add/commit immediately)?
      6. Redirect to list create page.
8. SEARCH INTERNAL / Read: (Start with only one type of search; get it working; get rest of basic functionality working, like by common name.)
   1. Create search by state. Need to search functions for all of the following still:
      1. user,
      2. common bird name,
      3. date,
      4. state,
      5. county
      6. backyard
      7. **:annual: right now no way to distinguish between years when pulling annual list, so for test, just put in all 2022, unles/until I can fix this.**
      8. lifetime
   2. Create a Get Request Route to find data in database.
   3. Return data to Template. Have done for single object in a list (i.e. row), need to create loop in list\_search\_results.html to handle populating table with multiple rows.
9. **DELETE BIRD FROM SIGHTING LIST:**
10. **UPDATE/ALTER ROW IN BIRD LIST:**
11. SEARCH/READ – Ebird:
    1. API Key: bdhdkslf0ktt
    2. PyPi API Documentation: <https://pypi.org/project/ebird-api/>
    3. So far:
       1. **Returned single row (results from single dictionary in a list of dictionaries**
       2. **Input = numerical county code.**
    4. Still Need to:
       1. Create for loop to loop through all dictionaries in the returned list
       2. Create dictionary of Indiana county codes so that user can input a county name, function will locate correct 3 digit code for that count, and input it in the dynamic url
       3. Right now, only works for Indiana, create version that works for any state
12. **HomePage:** 
    1. Cat fact
    2. Cat image

Upgrades, if time:

1. Create Sighting Form:
   1. Use calendar popup to standardize date and input properly (‘YEARMODY’) string
   2. Checkbox for Backyard list
   3. Dropdown county list.
2. Other?

Documentation: Python version of access to Ebird API

1. US code = US
2. State codes: looks like they use postal address codes, like NY for new york?

**Region Codes:**

**Graphical user interface, text, application, email

Description automatically generated**

**State codes:**

**[{'code': 'US-AL', 'name': 'Alabama'}, {'code': 'US-AK', 'name': 'Alaska'}, {'code': 'US-AZ', 'name': 'Arizona'}, {'code': 'US-AR', 'name': 'Arkansas'}, {'code': 'US-CA', 'name': 'California'}, {'code': 'US-CO', 'name': 'Colorado'}, {'code': 'US-CT', 'name': 'Connecticut'}, {'code': 'US-DE', 'name': 'Delaware'}, {'code': 'US-DC', 'name': 'District of Columbia'}, {'code': 'US-FL', 'name': 'Florida'}, {'code': 'US-GA', 'name': 'Georgia'}, {'code': 'US-HI', 'name': 'Hawaii'}, {'code': 'US-ID', 'name': 'Idaho'}, {'code': 'US-IL', 'name': 'Illinois'}, {'code': 'US-IN', 'name': 'Indiana'}, {'code': 'US-IA', 'name': 'Iowa'}, {'code': 'US-KS', 'name': 'Kansas'}, {'code': 'US-KY', 'name': 'Kentucky'}, {'code': 'US-LA', 'name': 'Louisiana'}, {'code': 'US-ME', 'name': 'Maine'}, {'code': 'US-MD', 'name': 'Maryland'}, {'code': 'US-MA', 'name': 'Massachusetts'}, {'code': 'US-MI', 'name': 'Michigan'}, {'code': 'US-MN', 'name': 'Minnesota'}, {'code': 'US-MS', 'name': 'Mississippi'}, {'code': 'US-MO', 'name': 'Missouri'}, {'code': 'US-MT', 'name': 'Montana'}, {'code': 'US-NE', 'name': 'Nebraska'}, {'code': 'US-NV', 'name': 'Nevada'}, {'code': 'US-NH', 'name': 'New Hampshire'}, {'code': 'US-NJ', 'name': 'New Jersey'}, {'code': 'US-NM', 'name': 'New Mexico'}, {'code': 'US-NY', 'name': 'New York'}, {'code': 'US-NC', 'name': 'North Carolina'}, {'code': 'US-ND', 'name': 'North Dakota'}, {'code': 'US-OH', 'name': 'Ohio'}, {'code': 'US-OK', 'name': 'Oklahoma'}, {'code': 'US-OR', 'name': 'Oregon'}, {'code': 'US-PA', 'name': 'Pennsylvania'}, {'code': 'US-RI', 'name': 'Rhode Island'}, {'code': 'US-SC', 'name': 'South Carolina'}, {'code': 'US-SD', 'name': 'South Dakota'}, {'code': 'US-TN', 'name': 'Tennessee'}, {'code': 'US-TX', 'name': 'Texas'}, {'code': 'US-UT', 'name': 'Utah'}, {'code': 'US-VT', 'name': 'Vermont'}, {'code': 'US-VA', 'name': 'Virginia'}, {'code': 'US-WA', 'name': 'Washington'}, {'code': 'US-WV', 'name': 'West Virginia'}, {'code': 'US-WI', 'name': 'Wisconsin'}, {'code': 'US-WY', 'name': 'Wyoming'}]**

**Indiana County Codes:**

**[{'code': 'US-IN-001', 'name': 'Adams'}, {'code': 'US-IN-003', 'name': 'Allen'}, {'code': 'US-IN-005', 'name': 'Bartholomew'}, {'code': 'US-IN-007', 'name': 'Benton'}, {'code': 'US-IN-009', 'name': 'Blackford'}, {'code': 'US-IN-011', 'name': 'Boone'}, {'code': 'US-IN-013', 'name': 'Brown'}, {'code': 'US-IN-015', 'name': 'Carroll'}, {'code': 'US-IN-017', 'name': 'Cass'}, {'code': 'US-IN-019', 'name': 'Clark'}, {'code': 'US-IN-021', 'name': 'Clay'}, {'code': 'US-IN-023', 'name': 'Clinton'}, {'code': 'US-IN-025', 'name': 'Crawford'}, {'code': 'US-IN-027', 'name': 'Daviess'}, {'code': 'US-IN-033', 'name': 'DeKalb'}, {'code': 'US-IN-029', 'name': 'Dearborn'}, {'code': 'US-IN-031', 'name': 'Decatur'}, {'code': 'US-IN-035', 'name': 'Delaware'}, {'code': 'US-IN-037', 'name': 'Dubois'}, {'code': 'US-IN-039', 'name': 'Elkhart'}, {'code': 'US-IN-041', 'name': 'Fayette'}, {'code': 'US-IN-043', 'name': 'Floyd'}, {'code': 'US-IN-045', 'name': 'Fountain'}, {'code': 'US-IN-047', 'name': 'Franklin'}, {'code': 'US-IN-049', 'name': 'Fulton'}, {'code': 'US-IN-051', 'name': 'Gibson'}, {'code': 'US-IN-053', 'name': 'Grant'}, {'code': 'US-IN-055', 'name': 'Greene'}, {'code': 'US-IN-057', 'name': 'Hamilton'}, {'code': 'US-IN-059', 'name': 'Hancock'}, {'code': 'US-IN-061', 'name': 'Harrison'}, {'code': 'US-IN-063', 'name': 'Hendricks'}, {'code': 'US-IN-065', 'name': 'Henry'}, {'code': 'US-IN-067', 'name': 'Howard'}, {'code': 'US-IN-069', 'name': 'Huntington'}, {'code': 'US-IN-071', 'name': 'Jackson'}, {'code': 'US-IN-073', 'name': 'Jasper'}, {'code': 'US-IN-075', 'name': 'Jay'}, {'code': 'US-IN-077', 'name': 'Jefferson'}, {'code': 'US-IN-079', 'name': 'Jennings'}, {'code': 'US-IN-081', 'name': 'Johnson'}, {'code': 'US-IN-083', 'name': 'Knox'}, {'code': 'US-IN-085', 'name': 'Kosciusko'}, {'code': 'US-IN-087', 'name': 'LaGrange'}, {'code': 'US-IN-091', 'name': 'LaPorte'}, {'code': 'US-IN-089', 'name': 'Lake'}, {'code': 'US-IN-093', 'name': 'Lawrence'}, {'code': 'US-IN-095', 'name': 'Madison'}, {'code': 'US-IN-097', 'name': 'Marion'}, {'code': 'US-IN-099', 'name': 'Marshall'}, {'code': 'US-IN-101', 'name': 'Martin'}, {'code': 'US-IN-103', 'name': 'Miami'}, {'code': 'US-IN-105', 'name': 'Monroe'}, {'code': 'US-IN-107', 'name': 'Montgomery'}, {'code': 'US-IN-109', 'name': 'Morgan'}, {'code': 'US-IN-111', 'name': 'Newton'}, {'code': 'US-IN-113', 'name': 'Noble'}, {'code': 'US-IN-115', 'name': 'Ohio'}, {'code': 'US-IN-117', 'name': 'Orange'}, {'code': 'US-IN-119', 'name': 'Owen'}, {'code': 'US-IN-121', 'name': 'Parke'}, {'code': 'US-IN-123', 'name': 'Perry'}, {'code': 'US-IN-125', 'name': 'Pike'}, {'code': 'US-IN-127', 'name': 'Porter'}, {'code': 'US-IN-129', 'name': 'Posey'}, {'code': 'US-IN-131', 'name': 'Pulaski'}, {'code': 'US-IN-133', 'name': 'Putnam'}, {'code': 'US-IN-135', 'name': 'Randolph'}, {'code': 'US-IN-137', 'name': 'Ripley'}, {'code': 'US-IN-139', 'name': 'Rush'}, {'code': 'US-IN-143', 'name': 'Scott'}, {'code': 'US-IN-145', 'name': 'Shelby'}, {'code': 'US-IN-147', 'name': 'Spencer'}, {'code': 'US-IN-141', 'name': 'St. Joseph'}, {'code': 'US-IN-149', 'name': 'Starke'}, {'code': 'US-IN-151', 'name': 'Steuben'}, {'code': 'US-IN-153', 'name': 'Sullivan'}, {'code': 'US-IN-155', 'name': 'Switzerland'}, {'code': 'US-IN-157', 'name': 'Tippecanoe'}, {'code': 'US-IN-159', 'name': 'Tipton'}, {'code': 'US-IN-161', 'name': 'Union'}, {'code': 'US-IN-163', 'name': 'Vanderburgh'}, {'code': 'US-IN-165', 'name': 'Vermillion'}, {'code': 'US-IN-167', 'name': 'Vigo'}, {'code': 'US-IN-169', 'name': 'Wabash'}, {'code': 'US-IN-171', 'name': 'Warren'}, {'code': 'US-IN-173', 'name': 'Warrick'}, {'code': 'US-IN-175', 'name': 'Washington'}, {'code': 'US-IN-177', 'name': 'Wayne'}, {'code': 'US-IN-179', 'name': 'Wells'}, {'code': 'US-IN-181', 'name': 'White'}, {'code': 'US-IN-183', 'name': 'Whitley'}]**

**Example Search for Grant County Indiana – Observations for past 14 days: Note that returns as LIST of dictionaries**

**[{'speciesCode': 'norcar', 'comName': 'Northern Cardinal', 'sciName': 'Cardinalis cardinalis', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'houwre', 'comName': 'House Wren', 'sciName': 'Troglodytes aedon', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'indbun', 'comName': 'Indigo Bunting', 'sciName': 'Passerina cyanea', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'woothr', 'comName': 'Wood Thrush', 'sciName': 'Hylocichla mustelina', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'bnhcow', 'comName': 'Brown-headed Cowbird', 'sciName': 'Molothrus ater', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'tuftit', 'comName': 'Tufted Titmouse', 'sciName': 'Baeolophus bicolor', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'amegfi', 'comName': 'American Goldfinch', 'sciName': 'Spinus tristis', 'locId': 'L5101201', 'locName': 'Metocinah 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**Sighting/postSighting value “sighting” at line 22 in routes:**

****

**InternalSearch/ list\_search\_results “ls\_search” value at line 48 in routes**

I want to see if you wanted to offer any tips on altering an existing value in a Postgress table hosted on Elephant.

Immediately after I have created a row in the database, I am trying to alter the value at the “annual” key of a row with the same common\_name as the row I just added, but only if there are no other rows having the same common\_name of that bird already in the table. Here is my code. I’ve included the terminal print results for lines 22 (yellow arrow) and 32 (red arrow). The printout of line 32 is what I want to end up with in my database when I am done, but without that being the second row added with this code.

Text

Description automatically generated

After watching the lecture video and studying the code in the next screenshot, I’ve struggled to adapt it to my own situation without success so far. I know the reason I am getting two rows is that I’m doing db.session.add() twice (in screenshot above), but I cannot figure out how to actually update the table without that add. When I just use commit(), leaving out the .add(annual\_bird) on line 34, that makes no change to the database. So, one key for me is I can’t understand how the db.session.commit() in the next screenshot actually changes anything in the database.

Text

Description automatically generated

All of the research I did on using python to alter existing data in postgress, led me to something like the page below. I thought about trying it out , but (among other things) I couldn’t get past the circled part which looks to me like the instructions are using a locally hosted database, and couldn’t figure out how to use that code to connect to Elephant hosted database:

**Text

Description automatically generated**