**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. Search lists by: (have only done by state)
   1. Annual
   2. Lifetime
   3. (Later as time permits, search by (in priority order):
      1. Bird name
      2. County
      3. Date)
2. Add bird sightings to annual and lifetime list (only—for now; don’t worry about outing or backyard)
3. Create loop in list\_search\_results.html to handle populating table with multiple rows, using Jinja
4. Ebird:
   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. Add labels at top to indicate:
      1. Location parameters for search (Indiana, <county variable>
      2. Day paramaters (like last 7 days)
5. Delete bird sighting
6. Link pages to nav bar
7. HomePage:
   1. Cat fact
   2. Cat image
8. Alter row in bird sighting list

**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.
      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
      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
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 Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'sonspa', 'comName': 'Song Sparrow', 'sciName': 'Melospiza melodia', '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': 'chispa', 'comName': 'Chipping Sparrow', 'sciName': 'Spizella passerina', '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': 'robgro', 'comName': 'Rose-breasted Grosbeak', 'sciName': 'Pheucticus ludovicianus', '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': 'comyel', 'comName': 'Common Yellowthroat', 'sciName': 'Geothlypis trichas', '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': 'amerob', 'comName': 'American Robin', 'sciName': 'Turdus migratorius', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-17 09:23', 'howMany': 2, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113114297'}, {'speciesCode': 'grcfly', 'comName': 'Great Crested Flycatcher', 'sciName': 'Myiarchus crinitus', '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': 'grnher', 'comName': 'Green Heron', 'sciName': 'Butorides virescens', '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': 'grycat', 'comName': 'Gray Catbird', 'sciName': 'Dumetella carolinensis', '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': 'fiespa', 'comName': 'Field Sparrow', 'sciName': 'Spizella pusilla', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'rebwoo', 'comName': 'Red-bellied Woodpecker', 'sciName': 'Melanerpes carolinus', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'rewbla', 'comName': 'Red-winged Blackbird', 'sciName': 'Agelaius phoeniceus', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 6, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'moudov', 'comName': 'Mourning Dove', 'sciName': 'Zenaida macroura', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'dickci', 'comName': 'Dickcissel', 'sciName': 'Spiza americana', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'savspa', 'comName': 'Savannah Sparrow', 'sciName': 'Passerculus sandwichensis', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'houspa', 'comName': 'House Sparrow', 'sciName': 'Passer domesticus', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 2, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'boboli', 'comName': 'Bobolink', 'sciName': 'Dolichonyx oryzivorus', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'easmea', 'comName': 'Eastern Meadowlark', 'sciName': 'Sturnella magna', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 3, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'turvul', 'comName': 'Turkey Vulture', 'sciName': 'Cathartes aura', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 4, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'horlar', 'comName': 'Horned Lark', 'sciName': 'Eremophila alpestris', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 1, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'eursta', 'comName': 'European Starling', 'sciName': 'Sturnus vulgaris', 'locId': 'L15294121', 'locName': '4098–4498 N 100 E, Marion US-IN 40.61403, -85.65658', 'obsDt': '2022-06-16 07:44', 'howMany': 16, 'lat': 40.614028, 'lng': -85.656585, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S113044689'}, {'speciesCode': 'rehwoo', 'comName': 'Red-headed Woodpecker', 'sciName': 'Melanerpes erythrocephalus', 'locId': 'L19628991', 'locName': '4942 S Western Ave, Marion US-IN 40.48057, -85.67293', 'obsDt': '2022-06-13 18:16', 'howMany': 1, 'lat': 40.480568, 'lng': -85.672933, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112885998'}, {'speciesCode': 'comgra', 'comName': 'Common Grackle', 'sciName': 'Quiscalus quiscula', 'locId': 'L19621059', 'locName': 'Grant County', 'obsDt': '2022-06-13 09:23', 'howMany': 1, 'lat': 40.389717, 'lng': -85.548328, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112852168'}, {'speciesCode': 'yelwar', 'comName': 'Yellow Warbler', 'sciName': 'Setophaga petechia', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-10 09:30', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112587671'}, {'speciesCode': 'blujay', 'comName': 'Blue Jay', 'sciName': 'Cyanocitta cristata', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-10 09:30', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112587671'}, {'speciesCode': 'carwre', 'comName': 'Carolina Wren', 'sciName': 'Thryothorus ludovicianus', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-10 09:30', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112587671'}, {'speciesCode': 'eastow', 'comName': 'Eastern Towhee', 'sciName': 'Pipilo erythrophthalmus', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-10 09:30', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112587671'}, {'speciesCode': 'eawpew', 'comName': 'Eastern Wood-Pewee', 'sciName': 'Contopus virens', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-10 09:30', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112587671'}, {'speciesCode': 'acafly', 'comName': 'Acadian Flycatcher', 'sciName': 'Empidonax virescens', 'locId': 'L5101201', 'locName': 'Metocinah Creek', 'obsDt': '2022-06-10 09:30', 'howMany': 1, 'lat': 40.6426349, 'lng': -85.6851679, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112587671'}, {'speciesCode': 'mallar3', 'comName': 'Mallard', 'sciName': 'Anas platyrhynchos', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 18, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'houfin', 'comName': 'House Finch', 'sciName': 'Haemorhous mexicanus', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 2, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'cedwax', 'comName': 'Cedar Waxwing', 'sciName': 'Bombycilla cedrorum', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 2, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'brnthr', 'comName': 'Brown Thrasher', 'sciName': 'Toxostoma rufum', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 2, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'warvir', 'comName': 'Warbling Vireo', 'sciName': 'Vireo gilvus', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 1, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'wilfly', 'comName': 'Willow Flycatcher', 'sciName': 'Empidonax traillii', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 1, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'amecro', 'comName': 'American Crow', 'sciName': 'Corvus brachyrhynchos', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 4, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'grbher3', 'comName': 'Great Blue Heron', 'sciName': 'Ardea herodias', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 1, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'dowwoo', 'comName': 'Downy Woodpecker', 'sciName': 'Dryobates pubescens', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 1, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'chiswi', 'comName': 'Chimney Swift', 'sciName': 'Chaetura pelagica', 'locId': 'L19558837', 'locName': 'IWU, Marion, Indiana, US (40.514, -85.665)', 'obsDt': '2022-06-10 06:09', 'howMany': 4, 'lat': 40.5144713, 'lng': -85.6645286, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112581117'}, {'speciesCode': 'comnig', 'comName': 'Common Nighthawk', 'sciName': 'Chordeiles minor', 'locId': 'L19555095', 'locName': '2820 S 600 E, Marion US-IN 40.51201, -85.55940', 'obsDt': '2022-06-09 21:49', 'howMany': 1, 'lat': 40.512013, 'lng': -85.559399, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112562046'}, {'speciesCode': 'amered', 'comName': 'American Redstart', 'sciName': 'Setophaga ruticilla', 'locId': 'L19544307', 'locName': '4936 N Kaybee Dr, Gas City US-IN 40.48186, -85.54693', 'obsDt': '2022-06-09 09:26', 'howMany': 1, 'lat': 40.481859, 'lng': -85.546932, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112514426'}, {'speciesCode': 'coohaw', 'comName': "Cooper's Hawk", 'sciName': 'Accipiter cooperii', 'locId': 'L19538346', 'locName': '826 N Baldwin Ave, Marion US-IN 40.56763, -85.67590', 'obsDt': '2022-06-08 20:18', 'howMany': 1, 'lat': 40.567631, 'lng': -85.675895, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112486852'}, {'speciesCode': 'normoc', 'comName': 'Northern Mockingbird', 'sciName': 'Mimus polyglottos', 'locId': 'L19409087', 'locName': '901–903 E 38th St, Marion US-IN 40.52302, -85.65258', 'obsDt': '2022-06-06 20:30', 'howMany': 1, 'lat': 40.523022, 'lng': -85.652576, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112343688'}, {'speciesCode': 'killde', 'comName': 'Killdeer', 'sciName': 'Charadrius vociferus', 'locId': 'L19507296', 'locName': '8720 S 300 W, Fairmount US-IN 40.42605, -85.73134', 'obsDt': '2022-06-06 20:11', 'howMany': 1, 'lat': 40.426048, 'lng': -85.731339, 'obsValid': True, 'obsReviewed': False, 'locationPrivate': True, 'subId': 'S112343237'}]**

**Sighting/postSighting value “sighting” at line 22 in routes:**

****

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