MIGRATE

THE ULTIMATE ANIMAL TRACKING APP

NMIX 4510: CAPSTONE

SYSTEM SPECIFICATIONS HANDOFF DOCUMENT

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SYSTEM SPECIFICATIONS
HANDOFF DOCUMENT

The purpose of this document is to explain the technical aspects and structure of the Migrate App in detail along with explaining how it will be used by the users. The system is implemented in swift 5 and uses php to connect to sql databases that are hosted on our migrate.mynmi.net web server.

ONCE APP IS DOWNLOADED

Upon opening the application, users will have the option to login or sign up. Users must have an account and be logged in to record their findings

BEGINNING PROCESS

Current User: Users will enter their email and password in order to access their account. Once the given fields are complete, click "Log in"New User: Start by clicking the sign up button located at the bottom of the screen. Fill out the given fields and you are set.

HOW IT WORKS

The Migrate app has two main features: concentration targets and confidence rating. On the homepage users will be given three concentration targets by having three bird species appear on their landing screen.

These selected targets provide them with a direction on their next bird finding. Upon completion, the given bird will be marked as captured from their weekly list.

Until completed, there will be a countdown displaying the duration left to finding the given birds of the week. Once the user has found a given species they will be able to submit the accuracy of their bird finding using numerals 1-10 with the confidence rating.

In addition to these features, Migrate will provide an explainer on the featured birds and will be linked to a database providing users with more information with their potential next find. Implementing an incentive and a fun way to find birds, this app is intended to serve all birders. While contributing vital data, these collections are helping researchers discover the southernmost species within regions to help track shifting migration ranges.

THE MAIN 3 DATA OBJECTS AND THEIR ATTRIBUTES:

1) TARGETS

The targets are the birds selected for the bird of the week selection. There are three each week, and they rotate based on their start day and region. The mySql database: **migrate_targets** contains the table: **ofTheWeek** where the data is stored on our migrate.mynmi server. When the swift system wants to search the Target database it makes a call to migrate.mynmi.net/forTargets.php which is a php file that queries the database and turns the results into a Json file. From there the swift system can parse the JSON data and assign the values to the correct variables. When a user selects a target from the homepage that data carries over into the entry they are working on submitting.

Variable	In Target Class in Swift	In Database
Name of bird	birdnom: String	name: varchar(50)
Description	birdDescrip: String	description: text
Type of species	typeOf: String	type: varchar(25)
Region	region: String	region: varchar(25)
All about bird URL	url: String	url: varchar(100)
Name of Image file	picture: String	picture: varchar(25)
Start Date	startDate: Date	startDate: date
uniqueID	n/a	uniqueID: int(11)

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2) ENTRIES

The entry objects are what the users' submit to Migrate. Some of the data is retrieved from which target the user had selected such as: type and name. Once the user presses the capture button they can add the picture. Then once they are on the submission page they add their confidence rating and how many animals they saw. The system retrieves their location after asking permission and it is recorded to latitude and longitude. The date is also generated by the system. When a user submits an entry it is inserted into the **allAnimals** table within the **migrate_entry** database over a php connection.

Variable	In Entry class in swift	In Database
Type (bird, mammal, reptile)	typeOfAnimal: String	type: varchar(25)
Species Name	animalName: String	name: varchar(25)
Number found	animalNumber: int	numberOf: int(11)
Confidence Rating	rateConfidence: int	confidence: int(11)
Entry Status (approved or pending)	status: String	status: varchar(25)
Date	theEntryDate: String	entryDate: datetime
Latitude	latitude: Double	lat: double
Longitude	longitude: Double	longitude: Double
Photo address	picture: String	picture: varchar(40)
UserID	userID: int(11)	userID: varchar(25)
UniqueID	n/a	uniqueID: int(11)

3) USER

The user objects are individual user accounts. The users must provide all these variables when they sign up (except UserId which is randomly generated). This information is inserted into the **migrate_users** database in the **birders** table. Whenever a user creates an account or logs in the sql database is called by php so it can be authenticated. The information stays on the app until they log out which means we can associate each entry with a userID.

Variable	In Entry class in swift	In Database
Email	emailAddl: String	email: varchar(50)
Full name	name: String	name: varchar(25)
Unique user ID	uniqueID: UUID()	userID: int(11)
State	state: String	state: varchar(25)
Region	region: String	region: varchar(25)
password	password: String	password: varchar(25)

WHAT EACH VIEW (OR SCREEN) DOES:

HOMEPAGE

(Nest.swift) The homepage is the landing page when a user opens the app. There are three images for the three Birds of the Week that have clickable buttons with their names. These button will take the user to capture page for that specific bird. There are also two buttons on the top. On the left there is a hamburger menu button that triggers a drop down menu where you can navigate to My Findings, My Map, or What is Migrate? One the left there is a profile button leading user to their profile or login page.

BIRD OF THE WEEK

(BirdOTD.swift) This is the page user will go to after choosing a bird to find from the home page. It contains the species name and a brief description. There is also a "more info" button that links to another view that shows the All About Bird page for that bird. The capture button takes the user to the next view: camera.

CAMERA

(camera.swift) this view lets users take a picture and save it to their entry. The user clicks "Take photo" and the camera pops up. Then once they have a photo they like they can click "Use this photo" for the next step.

SUBMISSION PAGE

(captureViewController.swift) This is the page where users submit their confidence rating and number of animals seen. This is the final step in the submission process. Once a user click "submit: they will be taken to the Findings table view.

MY FINDINGS PAGE

(findingsViewController.swift) This page is accessible after submitting an entry or from the "My Findings" button in the hamburger menu. It shows all the users findings (pic, name, number, and date) and can be separated by type of animal. There is a segment control bar with: All, Birds, Mammals, and Reptiles. This view is a table view meaning any cell can be selected and the user can see more details about that entry on the details page.

ENTRY DETAILS PAGE

(findingDetailsViewController.swift) This page shows more details for that entry: picture, name, number, date, entry status, and confidence rating. Also there is a button that takes the user to a map with a pin where they made that finding. On the species map page (speciesMap.swift) there is also a segmented view that lets you view all findings of that species!

PROFILE PAGE

(myProfile.swift) This page looks completely different depending on if you are logged in or not. If not logged in the user will enter their email and password here. They can also go to Sign Up Page (signUpViewController.swift) or select that they have forgotten their password form here. If they are logged in, they will see their account details and can change their password.

MY MAP PAGE

(map.swift) This page is a map but is different from the species map page because the pins are of all the user's findings for all species they have found not just one.

WHAT IS MIGRATE? PAGE

(helpViewController.swift) This page explains the purpose of the app and links to another page that explains how the app works.