Bird Spotter Report

Team Newton

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1. INTRODUCTION

1.1 PURPOSE

Bird Spotter simplifies the task of locating a bird or finding a birding hotspot for the modern day bird watcher. In addition, the app provides detailed information about the bird, thereby assisting an enthusiast not only for locating a bird, but also with its identification.

2. OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

Bird Spotter a new stand-alone app for iPhone and can be extended for iPad as well. The application communicates via Internet with a remote database to store and retrieve relevant data. The major product features include but are not limited to location based information dissemination, bird book which is education tool, photo gallery to view different images of the birds and also allow the user to share the images in the social network. Bird Spotter is a mobile app; the app is to be used mostly when the user is out in the nature. The target OS platform for the app is iOS 4.

3. MOTIVATION

3.1 MOTIVATION TO CREATE THE BIRD SPOTTER

There are several Birds app available for iPhone in the market with different functionalities like Bird profile, find the nearest hot spots based on user geo location and photo gallery of birds with an ability to share the images taken by the user in the social network. However, the iPhone app's which are available in the market does not have all these main functionalities integrated together as a single iPhone app. The bird watcher community has to buy an iPhone app where the app would display the hot spots location based in the user geo location. Also, if the users need to know more information about a particular bird then user has to buy another iPhone app separately.

This lack of integration lead the Newton team to design an iPhone app with all the above main functionalities integrated as a single app called the "Bird Spotter". This Bird Spotter app has these main functionalities integrated together and serves the bird watcher community as a great tool. Also, the Bird book functionality serves as an educational tool to anyone who is interested to learn more about the birds and also can listen to the audio of the bird. By integrating all the main functionalities as a single app, the Newton team has a great marketing scope. Also, the user has to buy this single app "Bird Spotter" which serves as a one stop shop for the bird watching community or any user who wants to know more about birds.

4. SOFTWARE DESIGN

In the software design process the Newton team established these activities and steps. The activities and steps are Software requirement specification (SRS), implementation, testing and deployment. In the SRS process, the team identified the core requirements of the Bird Spotter app and ways to implement them in the implementation process. By doing this way, the

team was able to fine tune the Bird Spotter app based on SRS document. However, the Newton team followed the Agile Methodology to design the Bird Spotter application

4.1 APPLICATION DESIGN

The Newton team followed the agile software development. In this process, the design and development team had a close collaboration of face-to-face communication on a weekly basis. During this process, the design and development team had old ideas, new ideas, organizing the team, ways to draft code, design layout, core value of the Bird Spotter app, database design and class design.

4.2 DATABASE DESIGN

The Newton team decided to use the SQLite Manager for the database design. The main reason for using the SQLite is that the SQLite supports cross platform (MAC or PC) where as the Core Data supports only the MAC OS. Even though, this app is mainly designed for iPhone, but the Newton team does not want to close the opportunity on the Windows phones either. Hence, the team decided to use the SQLite manager as their Database Management System (DBMS). The Bird Spotter has 6 main tables and they are linked via the primary and foreign key relationship. The below figure 1.0 display the Bird Spotter database design layout.

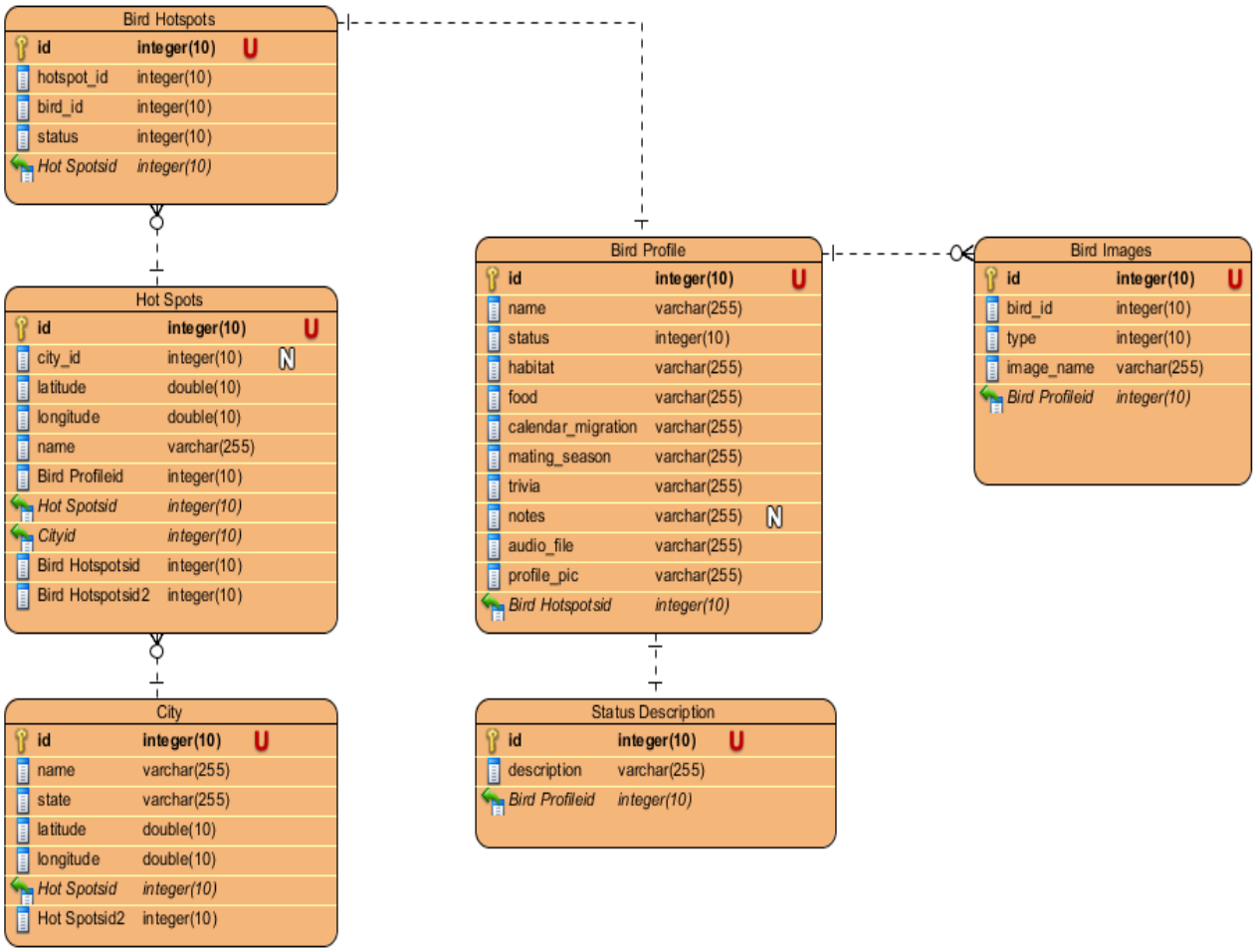


Figure 1.0 – Database Design layout

4.3 CLASS DESIGN

During the implementation process, the Newton team indentified the main classes which are required for the Bird Spotter app. Each class has its own attributes, operations and chain of responsibilities. The Newton team designed their class to be an inter-class relationship which has the capabilities of compositional and hierarchical. Compositional relationship between classes also known as 'has-a' relationship and the hierarchical classed can derived from one or more existing classes. These main classes can be viewed in the below diagram Figure 2.0.

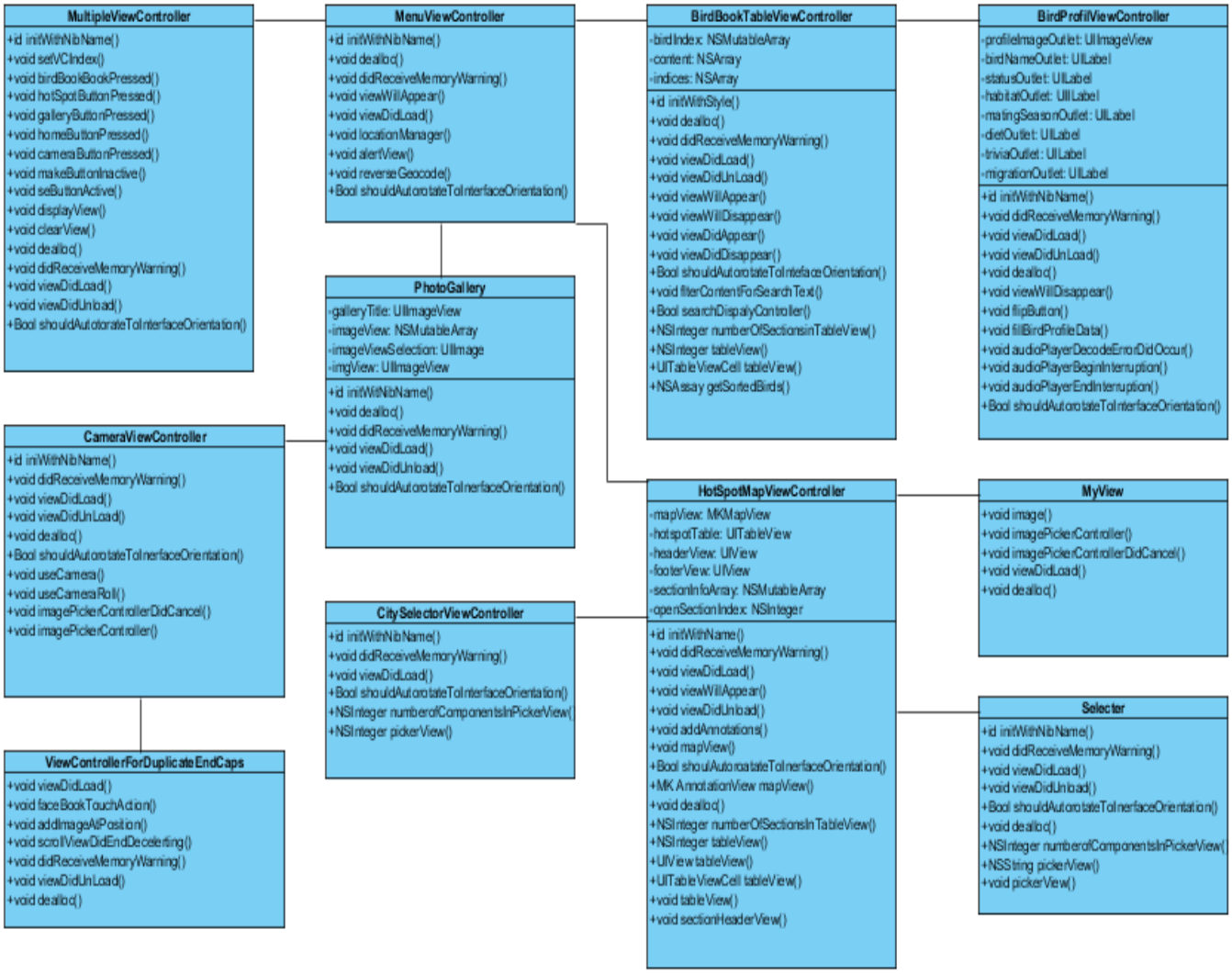


Figure 2.0 – UML Class Diagram

5. USER INTERFACE DESIGN

5.1 USER INTERFACES

User interface should be uncluttered and provide ease of access to features for the user. Moreover the interface should be designed taking into consideration of the small screen area of the iPhone. It should enable the use of touch as well as multi touch feature to reduce typing and button clicks.

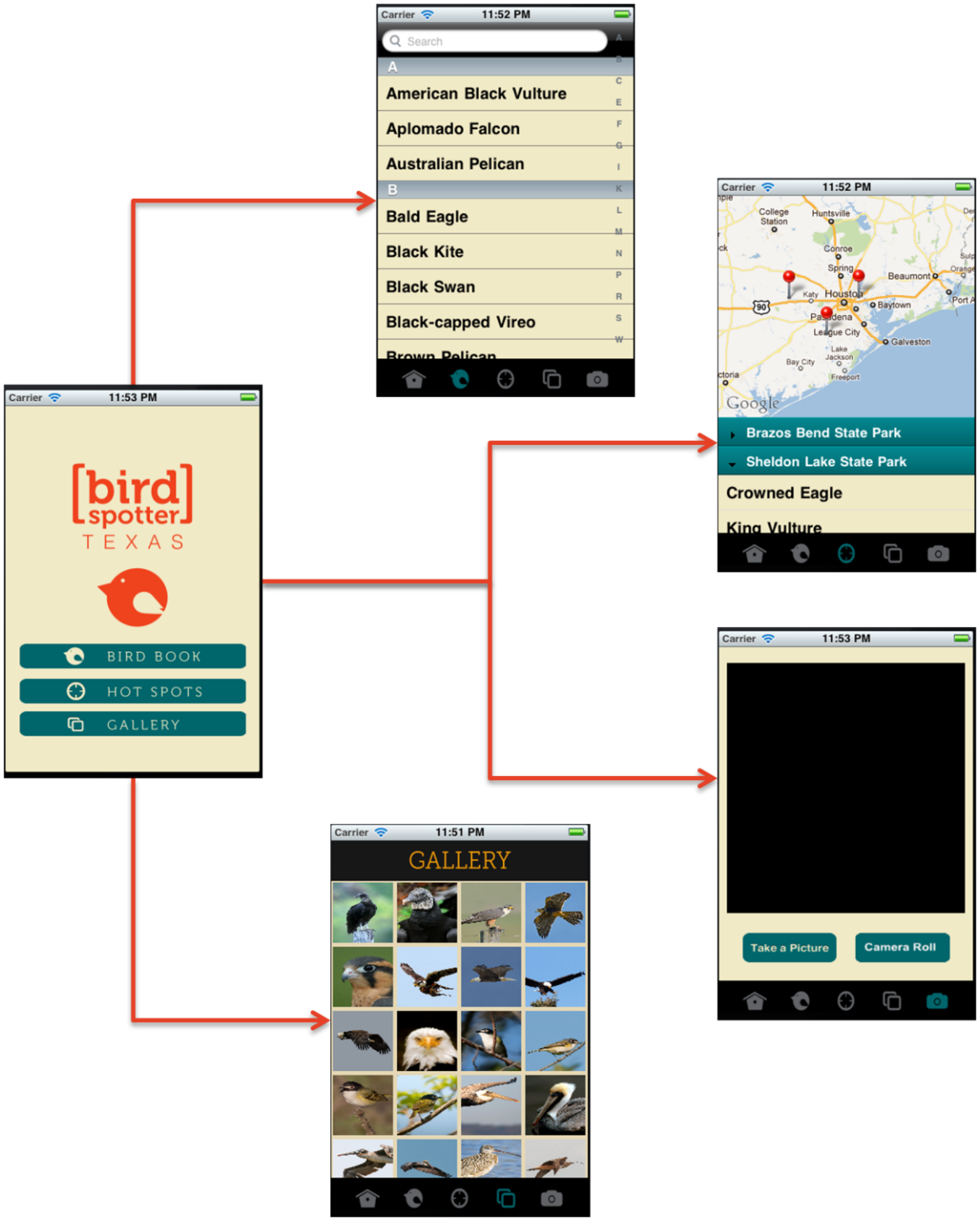
5.2 HARDWARE INTERFACES

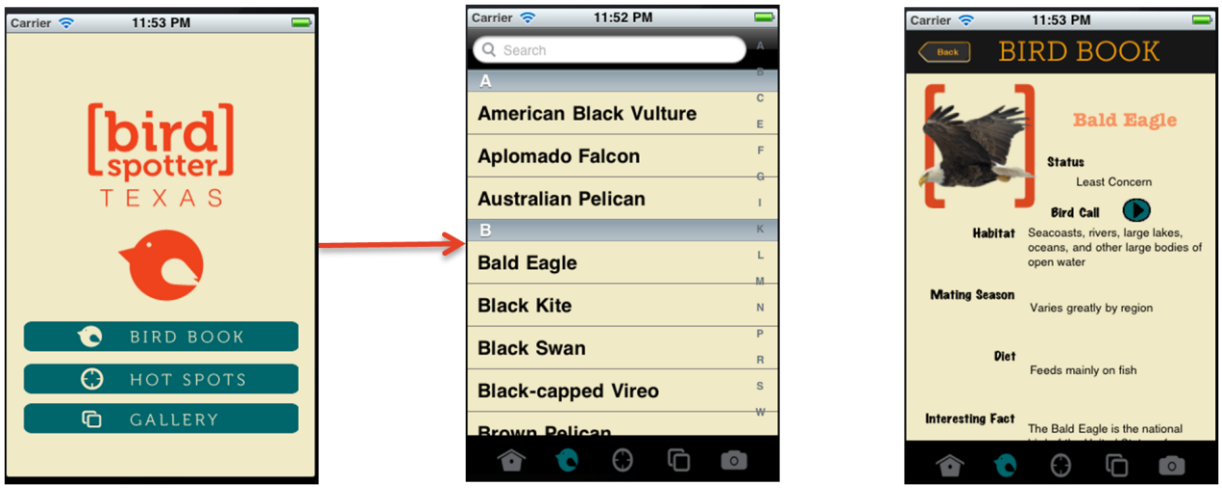
Hardware interface is done via the native APIs. Geo location from GPS, camera, sound, graphics and touch screen are to be utilized in this app.

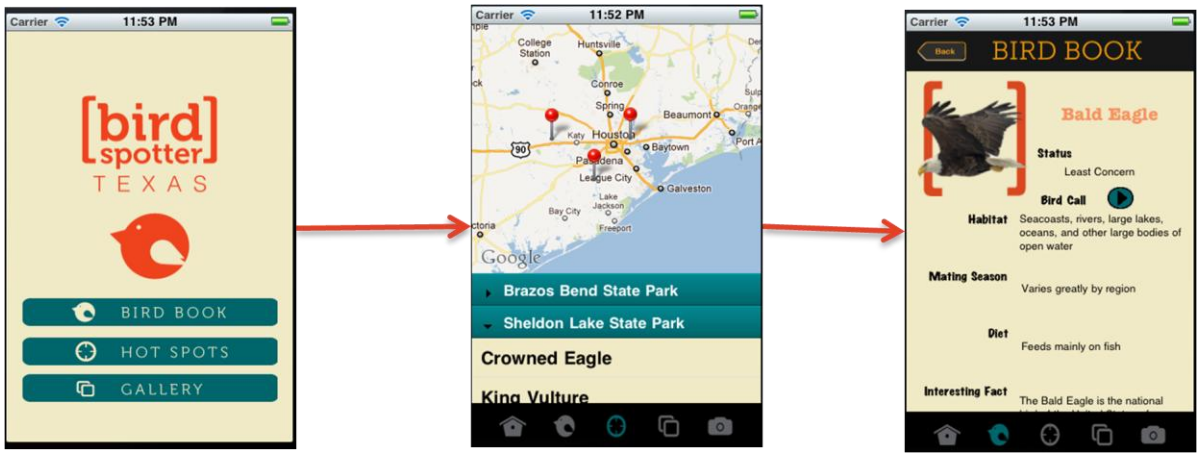
5.3 SOFTWARE INTERFACES

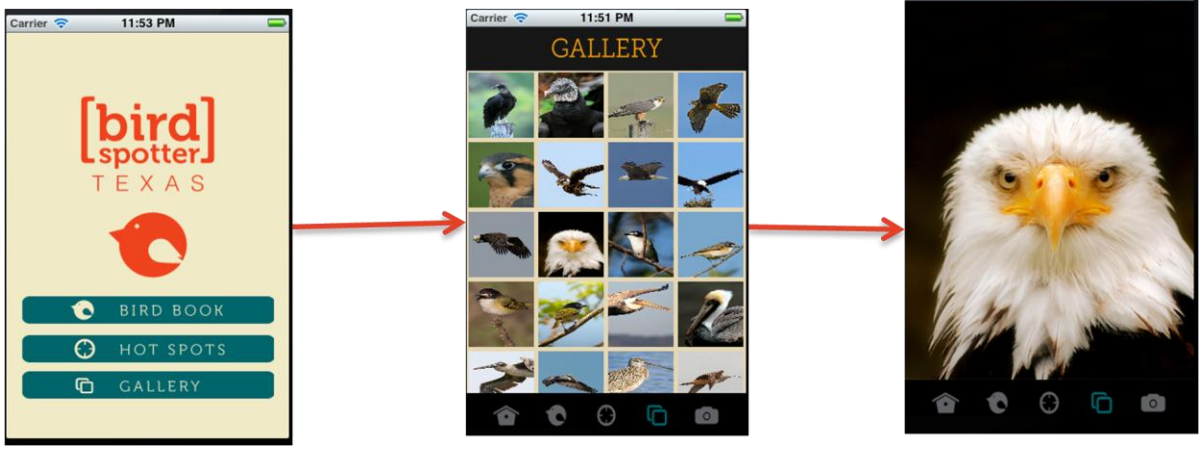
The app involves the interface with SQL database and communicates via http. The development IDE is Xcode and the target OSs is iOS 4. The detailed specifications on data that will be shared across the components, data sharing mechanisms, detailed list of APIs etc. will be added later.

5.4 USER INTERFACE




Carrier 11:53 PM
[bird spotter]
TEXAS
BIRD BOOK
HOT SPOTS
GALLERY
Carrier 11:52 PM
Search
A
American Black Vulture
Aplomado Falcon
Australian Pelican
B
Bald Eagle
Black Kite
Black Swan
Black-capped Vireo
Brown Pelican
Carrier 11:53 PM
Back
BIRD BOOK
Bald Eagle
Status
Least Concern
Bird Call
Habitat
Seacoasts, rivers, large lakes, oceans, and other large bodies of open water
Mating Season
Varies greatly by region
Diet
Feeds mainly on fish
Interesting Fact
The Bald Eagle is the national


Carrier 11:53 PM
[bird spotter]
TEXAS
BIRD BOOK
HOT SPOTS
GALLERY
Carrier 11:52 PM
College Station
Huntsville
Conroe
Spring
Beaumont
Katy
Houston
Baytown
Pasadena
League City
Galveston
Lake Jackson
Bay City
Freeport
Google
Brazos Bend State Park
Sheldon Lake State Park
Crowned Eagle
King Vulture
Carrier 11:53 PM
Back
BIRD BOOK
Bald Eagle
Status
Least Concern
Bird Call
Habitat
Seacoasts, rivers, large lakes, oceans, and other large bodies of open water
Mating Season
Varies greatly by region
Diet
Feeds mainly on fish
Interesting Fact
The Bald Eagle is the national


Carrier 11:53 PM
[bird spotter]
TEXAS
BIRD BOOK
HOT SPOTS
GALLERY
Carrier 11:51 PM
GALLERY
Carrier 11:52 PM

6. SOFTWARE QUALITY TESTING

6.1 UNIT TESTING – PHASE I

Unit tests are the basis of test-driven development, which is a style of writing code in which the test cases are written before writing the code. Xcode unit-testing environment is based on the open-source SenTestingKit framework. This framework provides a set of classes and command-line tools that let you design test suites and run them on your code. This approach helped the Newton team to identify the core requirements and edge the cases for our code before we get down to writing it. Unit testing the app helped us to develop our algorithms and fine tune the code. After your code passes the test cases, you have a foundation upon which you can make improvements to your code, with confidence that any changes to the expected behavior (which would result in bugs in your product) are identified the next time you run the tests.

6.2 FUNCTIONALITY TESTING – PHASE II

In this phase of testing, the developers are responsible for testing the functionality that they are creating or editing in the Bird Spotter app. We pretty much tested the app as a manual tester where we run the code via the IPhone OS simulator.

6.3 INTEGRATION TESTING – PHASE III

In this phase of testing, all the main functionalities of the Bird Spotter app should be integrated and tested. The main functionalities are Hot spots, camera, audio, bird book and search. During this phase of testing; especially when the functionalities are integrated and tested the app should not crash or freeze on the user. This test is mainly to see if there are any discrepancies between the functionalities when they are integrated together.

6.4 UAT TESTING – FINAL PHASE TESTING

In the User Acceptance Testing (UAT) the Bird Spotter app was provided to all the teams in the class. The users provided some minor and major feedbacks. Majority of the feedbacks where bugs and some where functional changes. All the bugs were fixed and advised the UA team that the functional changes cannot be made due to the design of the app. Another version of the Bird Spotter was provided to the UA team and came up with pretty positive feedbacks. The UA Testing helped our team to improve the functionality and also view the app from the user perspective.

7. INDIVIDUAL CREDIT

7.1 DEVELOPMENT TEAM

Raghu Reddy (Team Lead)

This person was mainly responsible for leading the Newton team and design team members. The following are the responsibilities and they are as follows;

- Coordinate with team members for design layouts, presentation, analysis and other documentations.

- Coordinate meetings with the design and development team and discuss project impediments, issues/delays in completing the task.
- Managing the Bird Spotter DB with all the data, audio files and other schema changes.
- Provide reporting of team activities against the weekly meeting which was held on weekly basis.
- Present PowerPoint presentation to the Professor and TA's via the SRS, Implementation and Madness Session presentations.

Charu Hans (Developer)

The following are the responsibilities:

- Attended weekly meetings
- Provided suggestions for the Bird Spotter app and also involved in the app design layout, functional requirements and testing.
- Made power point presentation for madness session, implementation, SRS and final.
- Provided development support for the following items
    - Bird Book
    - Photo Gallery
    - Toolbars
    - Audio Integration
    - Camera integration

Varun Varghese (Developer)

The following are the responsibilities:

- Attended weekly meetings
- Provided suggestions for the Bird Spotter app and also involved in the app design layout, functional requirements and testing.
- Made power point presentation for madness session, implementation, SRS and final.

- Provided development support for the following items
    - Home page
    - Hot Spots(Map Integration)
    - Bird Book
    - Database Integration

Joseph Mathew (Developer)

The following are the responsibilities :

- Attended weekly meetings
- Provided suggestions for the Bird Spotter app and also involved in the app design layout, functional requirements and testing.
- Made power point presentation for madness session, implementation, SRS and final.
- Provided development support for the following items
    - Bird Profile
    - Photo Gallery
    - Slide Show
    - Toolbars
    - Audio Integration
    - Camera integration

7.2 DESIGN TEAM

Annette Elizalde (Designer)

Responsible for iPhone design layout. The following are the responsibilities:

- Attended weekly meetings
- Provided suggestions for the Bird Spotter app and also involved in the app design layout, functional requirement.

- Provided design support for the following items
    - Design layout color and background
    - Home page
    - Bird Book
    - Bird Profile
    - Toolbars and buttons
    - Bird images with different sizes

Rachel Flores (Designer)

Responsible for iPhone design layout. The following are the responsibilities:

- Attended weekly meetings
- Provided suggestions for the Bird Spotter app and also involved in the app design layout, functional requirement.
- Provided design support for the following items
    - Design layout color and background
    - Hot Spots
    - Photo Gallery
    - Toolbars and buttons
    - Bird images with different sizes

8. REFERENCES

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