

Wildlife Marker: Mapping out Flora and Fauna using Flutter- Based Application and Image Crowdsourcing

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CONCEPCION KHAN

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With the advancement of mobile technology, more and more problems become easier to accomplish due to the diverse operations it can execute, with the help of mobile applications. Nowadays, every mobile device has a built-in GPS modules that helps users navigate their surroundings.

In the field of wildlife study, knowing what kind of habitat a subject thrives in, as well as its home range is vital in formulating conservation actions. Collecting geolocation information of a subject species is vital in estimating its home range and classifying its habitat, and researchers generally use VHF or GPS trackers for this kind of data to be obtained.

STATEMENT OF THE PROBLEM

Commercially available wildlife locating services and systems are invasive, sophisticated, and costly to use and maintain. Therefore, a cheap and easy to utilize wildlife mapping app that can record locations of various kinds of species is needed to provide vital geolocation data that researchers could use for home ranging and habitat identification.

OBJECTIVE

To create an android application with a supplemental web app that will be able to map out various types of wildlife using mobile device captured images and the location-based data embedded to it

OBJECTIVES

1. To create an easy to use mobile application
2. To develop and utilize features that can retrieve and process a user's upload image
3. To develop and utilize features that can save upload data to a cloud database
4. To develop features that can display user specific upload data on the mobile application
5. To develop features that can retrieve the database data and present it on a web page

LIMITATIONS

The Wildlife Marker is a project designed for devices with GPS service and images with geolocation tags, and can be dependent on internet connection. All of the data that will be used are collected from the internet due to current lockdown restrictions. The project will focus on developing functionalities that will help in obtaining wildlife locations by managing database access and exif image extraction.

MATERIALS AND METHODS

HARDWARE TOOLS

1. 64-bit laptop with 8GB RAM and AMD A12 9720P processor
2. Huawei P9 mobile phone
3. USB to type-C data cord

SOFTWARE TOOLS

1. Ubuntu 18.04 OS
2. Android Studio version 3.6
3. Flutter Plugin for Android Studio, release 1.20
4. Android 7.1 (Nougat)
5. HTML
6. CSS
7. Bootstrap 4.1.3
8. Sublime 3

MODULES

1. Authentication module

- handles user login and register activities

2. Homepage module

- displays uploaded data of the logged in user

3. Upload module

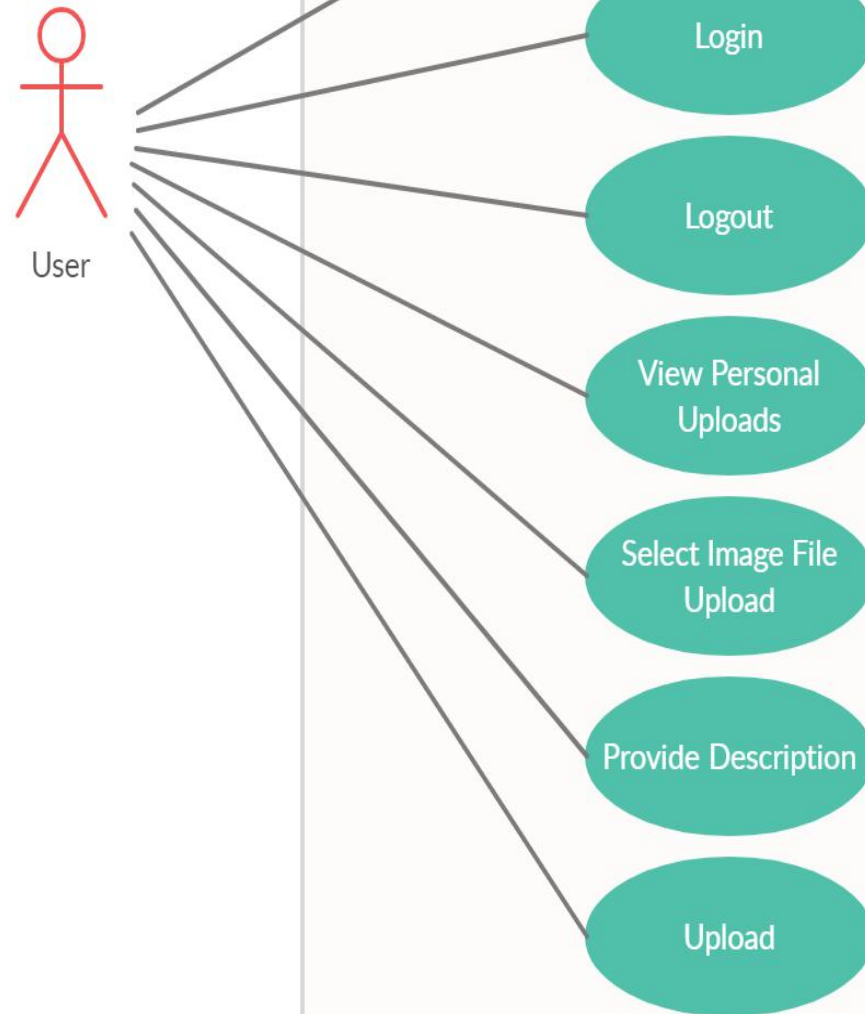
- has the functionalities of image selection, description input, metadata reading, database upload

USERS

1. User

- has complete access to every functionality of the mobile app
- can perform data uploading, viewing of personal uploads, editing before upload, sign in and sign out

USE CASE DIAGRAM



USE CASE DIAGRAM



User

Web Application

View General
Map

Browse Images

Click Image

View Image
Description

See Image
Source Radius

Mobile Application

Wildlife Marker

DEBUG



Email

Password

Login

[Not have an Account? Create here](#)

Wildlife Marker

DEBUG



Email

Password

Register

[Already have an account? Login here](#)



Jul 31, 2020

Friday, 02:50 AM



palawan pheasant

Jun 25, 2020

Thursday, 07:40 PM





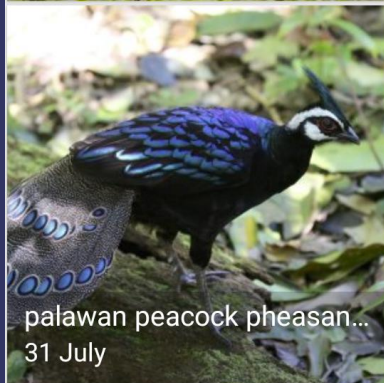
DCIM



Tamaraw(1).jpg
31 July



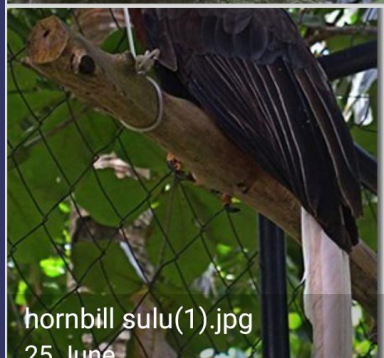
whale shark donzol luzon(...
31 July



palawan peacock pheasan...
31 July



tarsier bohol(1).jpg
25 June



hornbill sulu(1).jpg
25 June



philippine eagle davao(1).j...
25 June





Upload Image

DEBUG

Give a brief description about your upload

Description required



Add a new post



Aug 15, 2020

Saturday, 12:28 AM



Whale shark

Jun 25, 2020

Thursday, 07:39 PM



Web Application



Welcome, Guest



Dashboard

View Photos

Back to Map

Photo Information

Wildlife Marker



Description:

select a photo



Upload date:

select a photo



Upload Time:

select a photo

Plotted Areas



Images uploaded:





Welcome, Guest



Dashboard

View Photos

Back to Map

Photo Information



Images uploaded:



Description of Upload



Date of Upload



Time of Upload



Welcome, Guest



Dashboard

- View Photos
- Back to Map
- Photo Information

Wildlife Marker



Description:

Tarsier



Upload date:

Jun 25, 2020



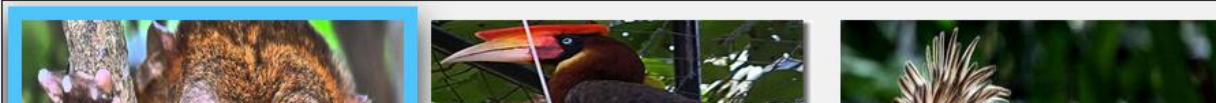
Upload Time:

Thursday, 07:39 PM

Plotted Areas



Images uploaded:





Welcome, Guest



Dashboard

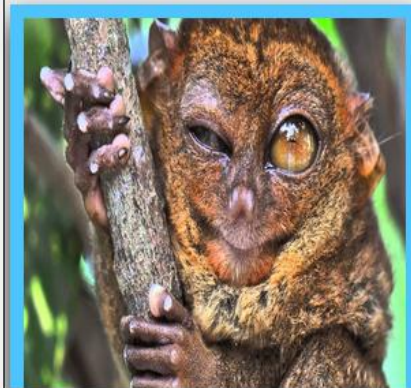
View Photos

Back to Map

Photo Information



Images uploaded:



Rufous Hornbill (*Buceros hydrocorax*), also known as Philippine Hornbill or Kalaw
Licensed under Creative Commons Attribution 2.0 or later version
© 2010 Photo by Richard Parker



description of Upload

Tarsier



date of Upload

Jun 25, 2020



time of Upload

Thursday, 07:39 PM

Wildlife Marker:
Mapping out
Flora an Fauna
using Flutter
Based Mobile
Application and
Image
Crowdsourcing

THANK
YOU!