Programmer Documentation
Group 6 -

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6/1/2020

Files that contain source code may be found at the following locations:

1. Android App Code:

    Main logic:

    - duck_tracker_2_final/ANDROID_APP_HERE/duck_tracker_2/app/src/main/java/com/group6/duck_tracker_2/MainActivity.java

    Aesthetics found here(strings, layout, images, etc):

    - duck_tracker_2_final/ANDROID_APP_HERE/duck_tracker_2/app/src/main/res

2. PHP Code:
    - duck_tracker_2_final/duck_tracker_server/duck_tracker_gate.php

3. BASH Script
    - duck_tracker_2_final/duck_tracker_server/server_setup.sh

4. INI configuration file (ALTHOUGH NOT TECHNICALLY SOURCE CODE)
    - duck_tracker_2_final/duck_tracker_server/duck_tracker.ini

//

(d) how source code files relate to each other,
(e) the purpose and inner workings of each source code file, function,
(f) each line of source code, and
(g) the purpose, scope, and lifetime of a major variable.

Android App (MainActivity.java**)**
** line numbers are approximate due to differences in formatting that may occur **
** To see debug print statements on phone change debug = false to debug = true (line 47)**
Functions:

1. Get UUID -> this function allows for the generation of a unique anonymous ID for each user to be identified by
2. onCreate -> begins the main logic of the app once the app is opened

3. onLocationChanged -> changes the text boxes to the latitude and longitude. This function leverages the call to get updates of phone location found on lines 175

```
locationManager.requestLocationUpdates(LocationManager.NETWORK_PROVIDER, MIN_TIME, MIN_DIST, locationLister);

locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, MIN_TIME, MIN_DIST, locationLister);
```

4. handler.postDelayed -> line 185 begins logic to continually repeat sending a http post request every ‘delay’ amount of milliseconds. ‘delay’ can be found on line 49.
5. onResponse -> line 244 begins logic of how to respond to a successful http connection. If debugging this is one are where a print statement would happen.
6. onErrorResponse-> how the app responds to a not successful http connection.
7. getParams -> line 271 this sets up the post request with its parameters
8. Get_location -> line 294 this gets time information and wraps

Significant Variables:

1. Boolean DEBUG = false; **this allows for debugging**

2. Integer delay = 300000; **this is the delay of post request timing**

3. EditText latitude_text; **variables that display the 3 texts that may change**
   EditText longitude_text; **during operation**
   EditText connection_text;

4. String last_latitutde; **for time at location logic**
   String last_longitude; **for time at location logic**

5. String connection_off = "NOT CONNECTED"; **for new messages these may be**
   String connection_on = "CONNECTED OK"; **changed**

6. String url =
   "https://ix.cs.uoregon.edu/~<YOURUSERNAMEHERE>/duck_tracker_server/duck_track_gate.p
   <YOURUSERNAMEHERE> must be changed to successfully install the system.
   See installation instructions.
   A live server string is commented out and is provided for debugging purposes.

PHP Code (‘duck_tracker_gate.php’)

Functions:

1. foreach($_REQUEST as $key => $value) **-> this separates a post request into variables**
2. $my_array = parse_ini_file("duck_tracker.ini"); **-> pulls variables from ‘duck_tracker.ini’**
3. $con=mysqli_connect($the_port, $the_username, $the_password ,$the_database);
   -> this connects to the database, uses the ‘duck_tracker.ini’ file
4. $sql = "INSERT INTO duck_table (ID, time, latitude, longitude, tal, date)
   VALUES ('$id', '$time', '$latitude', '$longitude', '$tal', '$date')";
   Insert post variables into database
5. $result = mysqli_query($con,"SELECT * FROM duck_table");
   fwrite($handle, "ID" ."\t". "date" ."\t". "time" ."\t". "latitude"."\t". "longitude" ."\t". "tal" ."\n");
   Writes to a file for downloading data

BASH Script (‘server_setup.sh’)

1. . duck_tracker.ini **-> pulls variables from ‘duck_tracker.ini’**
2. mysql -p -e "grant all privileges on *.* to '$dbuser'@'%' identified by '$password' ;"
   Creates a new user for accessing mysql database
3. CREATE DATABASE $database; **-> creates new database**
4. CREATE TABLE $table **-> creates new table with the appropriate columns**

INI configuration file (‘duck_tracker.ini’)

Contains credential fields to be used by the BASH script. In the installation script, the user is instructed to change the “dbuser”, “password”, and “port” fields to match their configuration. The database and table fields should not be changed, and if a change is made the values in the PHP script must also be updated.