

Quarantine Overseen Programmer Documentation

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1. INTRODUCTION

The following document covers the important aspects of the Quarantine Overseen web application in respect to its code, files and functions. Hopefully this info can help one to learn how to modify modules as needed to add functionality to the system.

The code for Quarantine Overseen is written in PHP, HTML, JavaScript and MySQL version 5.7. This documentation was written for the v1.0 release of Quarantine Overseen on May 31st, 2020.

This documentation assumes basic knowledge of PHP, HTML, JavaScript and MySQL programming in a linux environment.

2. QUARANTINE OVERSEEN SOURCE FILES

2.1. assets/

2.1.1. config.php

This contains basic configuration parameters such as the database host, database name, character type (for HTML), database user, database password, tracker update time interval, incubation period (to reset *high risk* users) and the radius to define “contact” for marking someone as *high risk*.

Used by tracer.php [2.1.3.], ajaxify.php [2.5.], contact_dbview.php [2.7.], dbview.php [2.8.], index.php [2.9.], inf_dbview.php [2.10.], infected.php [2.11.] and risk_dbview.php [2.12.]

2.1.2. database.php

2.1.2(a) connectToDb()

Connects to database.

Used by tracer.php [2.1.3.], ajaxify.php [2.5.], contact_dbview.php [2.7.], dbview.php [2.8.], index.php [2.9.], inf_dbview.php [2.10.], infected.php [2.11.] and risk_dbview.php [2.12.]

2.1.3. tracer.php

Contains functions to trace location and check for users in close proximity.

2.1.3(a) __construct()

Creates a database item and connects to it.

Uses connectToDb [2.1.2(a)].

2.1.3(b) checkTimeOverlap(startTime1, startTime2, endTime1, endTime2)

Returns true if overlap is found between two objects start and end times

2.1.3(c) distanceCalculator(latitudeFrom, longitudeFrom, latitudeTo, longitudeTo)

Calculates and returns distance, in meters, between two locations based on latitude and longitude

2.1.3(d) vicinityUsers(riderId)

Finds users in vicinity of the given *riderId*, from the *rider_track* database, and adds them to the *contact* database.

Uses connectToDb [2.1.2(a)], distanceCalculator [2.1.3(c)] and checkTimeOverlap [2.1.3(b)].

2.1.3(e) tracePotentialInfection(infectedRiderId)

Uses the *contact* database to check if a user has come into contact with the infected user (*infectedRiderId*) and adds them to the *risk* database to mark them as at high risk for infection.

2.1.3(f) checkRisk(riderid)

Checks if a *riderId* is part of the *risk* database.

Uses connectToDb [2.1.2(a)]

2.1.3(g) logInfection(riderId)

Adds *riderId* to the *infected* database.

Uses tracePotentialInfection [2.1.3(e)], connectToDb [2.1.2(a)]

2.1.3(h) quarpnts(riderId)

Creates a score system to promote social distancing. This is currently unused, but can be implemented in an adaptation of the system

Uses connectToDb [2.1.2(a)]

2.1.3(i) unreport(riderId)

removes *riderId* from *infected* database

Uses connectToDb [2.1.2(a)]

2.1.4. track.php

2.1.4(a) logRider(riderId, trackLongitude, trackLat)

Inserts riderId into *rider_track* database

Uses connectToDb [2.1.2(a)]

2.1.4(b) updateLog(riderId, trackLongitude, trackLat)

Updates information in *rider_track* database on location change or page refresh.

Uses connectToDb [2.1.2(a)]

2.2. sql/

2.2.1. my.cnf

Port, path, server and password configurations. Can be changed manually if error in script setup

2.2.2. rider_track.sql

Creates the databases *rider_track*, *infected*, *contact* and *risk*

2.3. static/

2.3.1. db_nav.php

Creates the taskbar used at the top of contact_dbview.php [2.7.], dbview.php [2.8.], inf_dbview.php [2.10.] and risk_dbview.php [2.12.] to navigate between aforementioned pages.

2.3.2. nav.php

Creates the taskbar used at the top of index.php [2.9.] and infected.php [2.11.] to navigate between aforementioned pages.

2.4. style/

2.4.1. bootstrap.css

Style file in css from github.com/necolas/normalize.css v3.0.3.

Bootstrap v3.3.7 from <https://getbootstrap.com/>

All info on methods and functionality can be found at provided links.

Used in contact_dbview.php [2.7.], dbview.php [2.8.], index.php [2.9.], inf_dbview.php [2.10.], infected.php [2.11.] and risk_dbview.php [2.12.]

2.5. ajaxify.php

Used for ajax commands in web application pages. Catches actions and gives the appropriate signal as a response.

Utilizes config.php [2.1.1.], track.php [2.1.4.], tracer.php [2.1.3.] and database.php [2.1.2.]

2.6. backup.sh

Automated script for backing up system on 6 hour interval

2.7. contact_dbview.php

Used to view *contact* database

Utilizes config.php [2.1.1.], database.php [2.1.2.], db_nav.php [2.3.1.] and bootstrap.css [2.4.1.]

2.8. dbview.php

Used to view *rider_track* database

Utilizes config.php [2.1.1.], database.php [2.1.2.], db_nav.php [2.3.1.] and bootstrap.css [2.4.1.]

2.9. index.php

Creates the main page for Quarantine Overseen. Allows users to view current location, view infection risk status, view their user id and disable screen sleep function.

2.9(a) quarpnts()

Unused in current version. Implements a point based system to incentivise social distancing.

2.9(b) <object>.update()

Updates current location information displayed on update of *rider_track* database.

2.9(c) runAll()

runs functions track.update() [2.1.4. ; 2.9.] and checkRisk() [2.1.3(f)]. Would run quarpnts() [2.9(a)] if included in this version.

Entire file utilizes ajaxify.php [2.5.], config.php [2.1.1.], database.php [2.1.2.], nav.php [2.3.2.] and bootstrap.css [2.4.1.]

2.10. inf_dbview.php

Used to view *infected* database

Utilizes config.php [2.1.1.], database.php [2.1.2.], db_nav.php [2.3.1.] and bootstrap.css [2.4.1.]

2.11. infected.php

Creates the infected page for Quarantine Overseen. Allows users to report themselves as infected/not infected as well as view list of infected users' ids.

2.11(a) setCookie(cookieName, cookieData, daysUntilExpiration)

Establishes cookies on the user's device.

2.11(b) getCookie(cookieName)

Retrieves cookies information from the user's device.

2.11(c) report()

Uses ajaxify.php [2.5.] to interpret, send and receive signals. Gets and updates cookie information of user using getCookie() [2.11(b)] and setCookie() [2.11(a)]

2.11(d) unreport()

Uses ajaxify.php [2.5.] to interpret, send and receive signals. Gets cookie information of user using getCookie() [2.11(b)]

Entire file utilizes ajaxify.php [2.5.], config.php [2.1.1.], database.php [2.1.2.], nav.php [2.3.2.] and bootstrap.css [2.4.1.]

2.12. risk_dbview.php

Used to view *risk* database

Utilizes config.php [2.1.1.], database.php [2.1.2.], db_nav.php [2.3.1.] and bootstrap.css [2.4.1.]

2.13. setup.sh

Sets up SQL server automatically, port/password can be manually changed at top if needed.

3. OUTSTANDING ISSUES AND KNOWN BUGS

- Contact time (*r_time*) for the *risk* database doesn't display in date/time format. This doesn't affect functionality, but makes the database less easy to interpret.
- Scalability is an issue server side with this project, changes to distance calculation formulas could solve this issue.
- Compatibility issues when not using Google Chrome, often doesn't work. We recommend Google Chrome in User's Documentation because of this.
- Current build has database info viewable by anyone with url to access dbview.php files. Might want to add a password to sites.