##### The following document details software and bug reports about the CoTwins app and servers over the duration of the study. All of these reports have since been resolved.

##### **Token Error**

Inconsistency between LimeSurvey and CoTwins Server. Situation appears to occur when either (1) a survey is completed in the CoTwins application, but is not marked as finished in LimeSurvey, OR (2) the survey is active in the CoTwins application, but for an unknown reason cannot be recognized by LimeSurvey. When encountering this error, participants receive a message saying "The token you have provided is either not valid, or has already been used."

To fix this error, a team member should select "Repair uncompleted survey entries" on the given account. Another solution to fix these errors is to use the Vitaliy. Also recommended to monitor an account whose error has been resolved to if the original error reoccurs or if there are any other similar problems. To monitor these errors, one can visit the following URL: <https://co-twins.appspot.com/admin/broken-survey-tokens?limit=10000&start=20000>.

Several of these errors occurred in February 2018 and were resolved within 2-3 weeks. Subsequent errors seemed to occur as one-off issues that were typically resolved within 24 hours.

#### **Social Media Survey Error**

Linking error between the social media survey and user registration. The error creates a feedback loop that does not allow participants to move past the Social Media survey. When encountering this error, participants will finish the Social Media survey and then register their account. After registering, they will click a link that asks them to take the Social Media survey again. This problem happened to over 20 participants over a two-year period of enrollment. This error was fixed in January of 2020 when all future Social Media surveys were removed entirely from the new UserStatus database.

#### **SSL error**

#### Participant receives an error that says, "An SSL error has occurred and a secure connection to the server cannot be made." Participant had a secure connection and had tried (1) restarting app, (2) deleting and re-downloading, and re-logging into app, and (3) restarting phone. Account did not appear to have any errors on our end. Error was not intentionally resolved, but participant was able to complete surveys X days later, signifying that the error had been resolved.

#### **UserStatus slow processing**

The user-status admin page had become too slow because of the query to find the last web page visited for every user. The software team resolved this issue by moving the query information from the interface in order to restore the typical processing speed of the page.

#### **"Unfortunately Cotwins has stopped"**

#### Error appears as a notification to participant through their CoTwins app that says "Unfortunately CoTwins has stopped". This error is likely caused by either (1) the app exits abruptly, e.g., unstable internet connection (both cellular and WiFi); OR (2) cache files of CoTwins are corrupted because they have not been cleared in a long time.

To fix this error, the team first recommends that the participant closes the app and attempts to reopen the app once they have confirmed stable internet connection. If this does not resolve the issue, then we recommend that the participant attempt to clear their cache data. To clear the cache data, a participant should do the following:

* 1) click "App" button in "Settings" menu,
* 2) click CoTwins app and it will go to App info of CoTwins,
* 3) click "CLEAR DATA" button and "CLEAR CACHE" button,
* 4) re-login CoTwins.

These steps will reset the data in the CoTwins app on their Android phones.

#### **Notifications**

#### Two errors reported: (1) Notifications were not received by participants, and (2) Notification was received by participant, but there were no outstanding surveys for said participant to take.

Error (1) is believed to have occurred because either participants did not allow notifications from the app to be delivered in their personal phone settings, or because XXXX. This error was resolved with UserStatus update.

Error (2) occurred while the production server was cloned and connected to the development server during a test of migrating the development database to the production database. It was inferred that the development database had a pending survey for the participant that the production site did not yet have. This error was resolved once the upgrade was completed and the cloned sites were removed from the databases.

#### **Email Login Errors**

The two errors regarding participant email log-ins are: (1) a "Wrong email format" error, and (2) Password reset problem.

Error (1) occurs when a participant attempts to login with the correct email and password, but receives an error message that says, "Wrong Email Format, please input email in correct format". The reason for this error is unknown, but it was bypassed by having these participants provide a second email that was then updated as their primary CoTwins email account in UserStatus.

Error (2) occurs when a participant is trying to log back into their account and cannot remember their password. Even though they are entering in the correct email, they do not receive a password reset link when they click "Forgot Password". The reason for this is unknown; however, these errors were bypassed by having the CoTwins team reset the password to a generic entry for participants for whom this applied to.