Unimate Codebase

- Following technologies are used in the Unimate project.

- Frontend is developed using React Native. The following tutorial guides, how to set up the environment for React Native development.
  https://reactnative.dev/docs/environment-setup (React Native CLI Quickstart)

- Please note that the current Unimate codebase is working for Android development only.

- Following video is guiding you on how to set up the Unimate project.
  https://youtu.be/uY9ar6G9oTo

- Backend is supported by Firebase. Firebase Authentication is used for user authentication of the app. Firestore Database is used for storing data.

- Google Fit is used to collect data related to Traxivity (steps count, calories, etc.)

- Data related to Emotivity and action cards are stored in Firebase. All the data related to To-Do List and SayThanx are stored locally.

- All the code related to the Unimate application is maintained on GitHub.

https://github.com/RGU-Computing/unimate

Common issues found so far and how to fix them

> Before you start working with the Unimate project, it is recommended to create a new React Native project and try to run the project initially. If the project successfully runs, there might be no development environment related issues on your local machine.

If your new project doesn't work as expected, go through the following link (https://reactnative.dev/docs/environment-setup) and make sure all the steps are followed.

Following are some issues found and how to fix them.

Issue 01

TypeError: Cannot read properties of undefined (reading 'transformFile') at Bundler.transformFile

Solution: Most probably, this happens due to a version issue in Node. Downgrade the Node to version 14.18.1, delete `node_modules` folder and reinstall again might solve this issue.

Reference: https://stackoverflow.com/questions/69647332/cannot-read-properties-of-undefined-reading-transformfile-at-bundler-transfo

Issue 02

Android app crashes when the app is launching without errors.

If you encounter your application is crashing when the application is launched, it may be due to the following reasons.
- Issues with Firebase project setup
- An issue in SoLoader

Solution:
01) Get the error log by using Logcat. Logcat is a command-line tool that dumps a log of system messages, including stack traces when the device throws an error and messages that you have written from your app.
    a. First, start Metro by executing `npx react-native start` inside your React Native project folder.
    b. Open another terminal and execute `adb logcat`
    c. Open a new terminal inside your React Native project folder and execute `npx react-native run-android`
    Once the application crashes, copy the logcat log text into a notepad and search the error. You might get the error by searching "`System.err`" in the log text.
02) If the error is related to Firebase, go through the tutorial video again and check whether all instructions are followed.

03) You might get an error like the following,

System.err: java.lang.UnsatisfiedLinkError: couldn't find DSO to load: libfb.so caused by: couldn't find DSO to load: libc++_shared.so caused by: dlopen failed: "/data/user/0/com.unimate/lib-main/libc++_shared.so" is for EM_ARM (40) instead of EM_386 (3)

This is due to an issue in SoLoader. This error has occurred in some Linux and Windows environments, but so far this error has not yet appeared in macOS (M1).

To fix this issue,

01) Open `android/app/build.gradle` file.
02) Add the following code under dependencies.
   `implementation'com.facebook.soloader:soloader:0.9.0+'`
   After adding that code, dependencies section should be look like this.

```
dependencies {
    implementation fileTree(dir: "libs", include: ["*.jar"])
    implementation "com.facebook.react:react-native:+"  // From node_modules
    implementation 'androidx.appcompat:appcompat:1.1.0-rc01'
    implementation 'androidx.swiperefreshlayout:swiperefreshlayout:1.1.0-alpha02'
    implementation 'com.android.support:multidex:1.0.3'
    implementation 'com.google.firebase:firebase-analytics:17.2.2'
    implementation'com.facebook.soloader:soloader:0.9.0+'
    if (enableHermes) {
        def hermesPath = "../../node_modules/hermes-engine/android/";
        debugImplementation files(hermesPath + "hermes-debug.aar")
        releaseImplementation files(hermesPath + "hermes-release.aar")
    } else {
        implementation jscFlavor
    }
}
```

03) clean your build by `cd android` and `./gradlew clean`
04) Start Metro by executing `npx react-native start` inside your React Native project folder, open another terminal inside your React Native project folder and execute `npx react-native run-android`

Now the error should be resolved.

Reference: https://stackoverflow.com/questions/49352114/react-native-app-crashes-without-any-error-log