RJT Fitness

In this project, your task is to build a fitness app of the likes of Fitbit and Jawbone which connects your iOS apps to a Bluetooth Low Energy(BLE) device. To be able to achieve this, a custom BLE peripheral(sensor) has been built for you which emulates a real world sensor and will provide data to your app.

The data that will be provided to your app are:

- Heart beat: this data is provided continuously to your app. Your app should continuously listen for updates from the sensor
- Steps Count: This data is provided on demand by sending a read request to the sensor
- Body Temperature: This data is provided on demand by sending a read request to the sensor

Features of the app:

- Users should create an account using Firebase with options for standard email/password login, Facebook login and Gmail login. All combinations of validations should be performed.
- The app will have a screen that will display the heart rate of the user that refreshes every one minute.
- The app will have a screen that will display the user's step count. To get this value, the app must explicitly send out a read request to the peripheral. An entry with a timestamp should be saved in Core Data and on Firebase and should be encrypted. The user should also have the option to see his step count sorted by days and months in a graph. To display information by the days, the user should be able to see the total step count for Monday through Sunday of that week. To display information by the month, the user should be able to see the step count for the year for each month from January through December of that year. In addition to this, you also have to report the number of calories burned for the number of steps taken. There will be a mathematical formula available online that will give you the correlation between the steps walked and calories burned and steps walked and distance covered. This information should also be encrypted and stored in the database and should also be shown in graphs.
- The app will have a screen that will display the user's body temperature. To get this value, the app must explicitly send out a read request to the peripheral. This data should be visually displayed the same way as steps count will be displayed.
- The user can set a daily goal for steps count like most fitness apps do which is generally 10,000 steps a day but you have to give the user an option to customize this value. If the user has achieved this goal on any particular day, you should display a screen that informs the user and should allow the user to share that post to Facebook and maintain

this information in Core Data and Firebase. The user should also be able to see a graph of how many times he has achieved this goal sorted by days and months as above.

- The app also has a social aspect to it. User's can add each other as friends and see how many steps their friends have done on that particular day. If a user wants, he can motivate a friend to achieve his goal or demotivate a friend. If a user clicks on a "thumbs up" or "thumbs down" button for a friend, a push notification is sent out to the friend with an appropriate message.

Things to remember:
Health and fitness information is sensitive data and security of this data should be of prime importance. While Firebase is secure enough, Core Data database is not. Whenever you are storing anything in a Core Data database, make sure information is encrypted before it is stored.

Sample apps:

- Fitbit
  https://www.fitbit.com/app
  https://itunes.apple.com/us/app/fitbit/id462638897?mt=8
- Jawbone
  https://itunes.apple.com/us/app/up-by-jawbone-free-fitness/id916240764?mt=8
- Garmin
  https://itunes.apple.com/us/app/garmin-connect-mobile/id583446403?mt=8