CASE STUDY: NITELOG

Technical Specifications
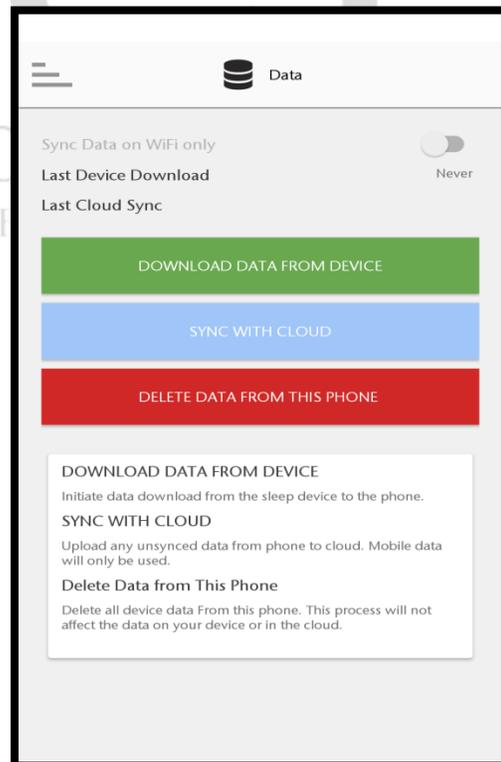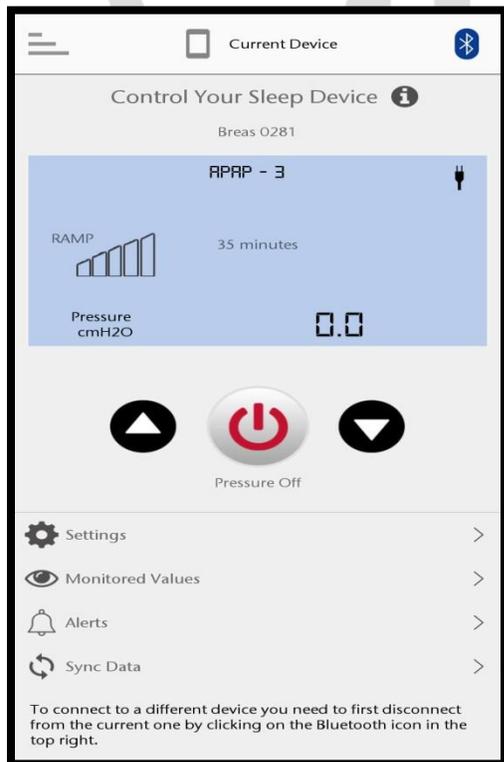
**Technology:** Android

Language: Java

Design: XML

Database: SQLite/AWS Amplify

Background:

Nitelog is a mobile application for the Z1 Auto™, the lightest CPAP machine. It is useful for controlling the Z1 Auto™, monitoring the sleep quality, generating compliance reports and sharing data.

This Android application is compatible with Z1 machines which are ideal for travelling and has an optional integrated battery system that is known as PowerShell. It is capable of delivering a full night of cord-free power on a fully charged battery.
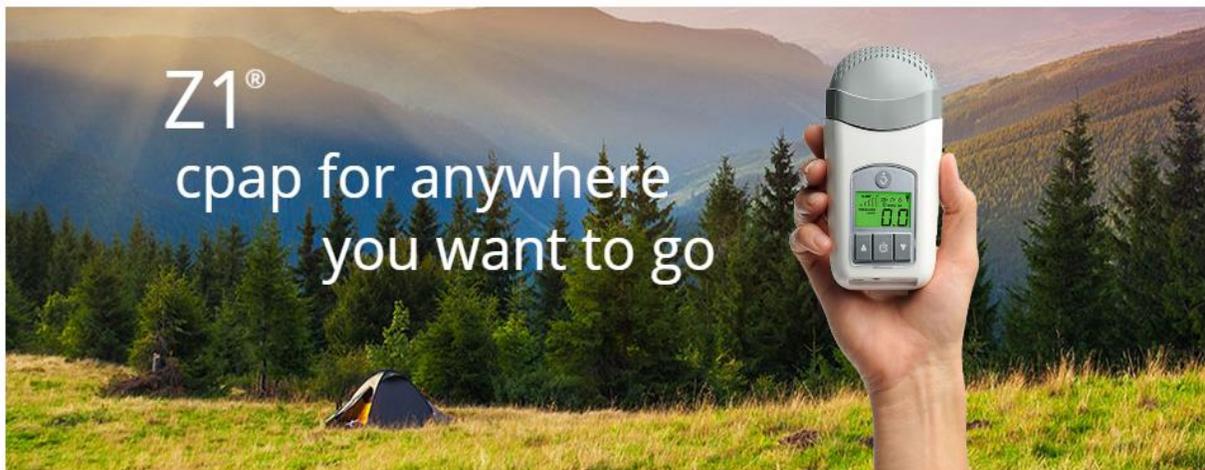
The Problems and Challenges:

The client approached Ariel Software Solutions Pvt. Ltd. with an idea of developing an Android Mobile application for their Z1 CPAP machine which helps in monitoring the sleep quality, generating compliance reports and sharing data.

The problems and challenges we faced while developing mobile application were:

1. Bluetooth connectivity issue while switching on the Z1 device through app.

2. Managing logged in sessions or staying connected for a longer period.

3. Getting data synced from Z1 device as the app used to get crashed while fetching data from device due to large number of records.

4. Controlling the Z1 device from app and updating the view on app.

The Solution:

For an efficient delivery, we had a detailed conversation with client about their Z1 machine to understand how this device actually works. This helped us in developing an application as per client's expectations.

To resolve the connectivity issue we used a method called "notification", which works with Bluetooth Low Energy devices like Z1. We turned this method "ON" to overcome the 1st time connectivity as well as login issue.

For managing sessions, we basically ran the services in background and kept on hitting the login commands which helped in resolving this issue completely.

For Syncing issue, we showed large amount of data in the form of lists and then received the same list into the Database. This actually helped in resolving the issue by managing the large and heavy code that BLE device had.

For controlling the device from app, we delayed the background running services for 4-5sec whenever a key was pressed from mobile app in order to run that particular command appropriately on Z1 device.

Results:

Upon completion, the final deliverable was a fully functional Android application having utmost compatibility with the Z1 machine. This includes the following features:
- Used to switch on and off the Z1 device through Bluetooth connectivity.
- Monitor sleep quality on beautiful charts.
- Generate compliance reports.
- Share machine data.