CLASSES

BaselineCalculator.h

The `BaselineCalculator` class provides functionality for generating baseline EEG frequencies and applying treatments to multiple electrode sites. It manages the calculation of baseline frequencies for each site, which are then emitted through signals. Additionally, it handles the application of treatments by incrementing the baseline frequency and updating treatment progress accordingly. The class utilizes timers to control treatment duration and ensures responsiveness by processing events to prevent UI blocking during treatment application. Overall, `BaselineCalculator` facilitates the initialization and execution of EEG sessions, enabling the application to interact with EEG devices effectively.

HandleSessions.h

The `HandleSessions` class is responsible for managing session timing and progression. It utilizes a QTimer to track session duration, emitting signals to notify the application of session updates, pauses, resumptions, completions, and quits. The class offers methods to start, pause, resume, and stop sessions, as well as a signal to indicate when the session is finished. Additionally, it provides a boolean function to check if the session is paused. The session timer increments until it reaches a predefined duration, at which point it emits the 'finished' signal and stops. Overall, `HandleSessions` facilitates the control and monitoring of session lifecycles within the application.

MainWindow.h

The `MainWindow` class serves as the primary interface for the application, managing user interactions, session controls, and UI updates. It inherits from `QMainWindow` and contains various member variables, including pointers to timers, instances of other classes like `HandleSessions` and `BaselineCalculator`, and flags to track system states and user interactions.

The class provides slots for handling button clicks, such as starting, pausing, resuming, and stopping sessions. It also manages battery level updates and contact status monitoring. Signals and slots are utilized to communicate between the UI elements and the backend logic.

The `MainWindow` class coordinates with instances of `HandleSessions` and `BaselineCalculator` to manage session timing, baseline calculations, and treatment application. It updates the UI elements based on session progress and user interactions, such as button clicks and contact status changes.

Overall, the `MainWindow` class acts as the central hub for the application, orchestrating the flow of information and interactions between the user interface and the underlying functionality provided by other classes.

QCustomPlot:

We utilize `QCustomPlot` as our external graphing library, harnessing its robust capabilities to integrate dynamic and visually appealing graphs and charts seamlessly into our applications. With `QCustomPlot`, we benefit from a versatile toolkit that enables us to create an array of customizable data visualizations, including line plots, scatter plots, histograms, and more. Leveraging this library, we have the flexibility to tailor the appearance and behavior of our graphs to meet the specific requirements and aesthetic preferences of our applications and users. Additionally, `QCustomPlot` offers interactive features such as zooming, panning, and data point selection, enhancing user engagement and facilitating in-depth data exploration and analysis. As a cornerstone of our graphing functionality, `QCustomPlot` empowers us to deliver intuitive and informative data visualization experiences to our users.