## Design Decisions

**MainWindow**

- MainWindow would have a HandHeldDevice object, and a PCWindow menu
- Can do all the updates to the UI from the HandHeldDevice's functions

**Storing Sessions**

- Session class has startDateTime, storing the session's initial start date/time (since each session should take around the same time, there is no need to store the after date/time)
- Frequency class
    - This class represents the 21 baseline before and after frequencies for the PC to view
    - This class is updated through HandHeldDevice (HandHeldDevice->session->addFrequency(float, float)) - always add 21 frequencies

**Testing**

- Each stage of the baseline takes a total of 6 seconds - 5 seconds to calculate the baseline frequency, then 1 second to perform the treatment
- There are four stages, and then afterwards the final frequencies are calculated

**Individual EEGSites**

- For the 21 EEGSites, there is a separate object (stored as an array inside Headset), which stores the initial baseline frequency, along with its current baseline frequency, which gets updated based off the offset
- Stores the before, and this before attribute is NOT updated, as we need it for the session log upload to the PC

**Device Timers**

- HandHelpDevice class has two QTimer attributes:
    - runTimer - the timer for the one minute baseline average frequency calculation
    - stopTimer - on interruptions, (pause, disconnect), start the five minute timer before shutting down / terminating session
- MainWindow has access to the device timers, to update their respective timers

**Menu Selection**

- selectionList
    - Used QListWidget to keep active track of current user selection
    - QListWidget stores:
        - A list of QStrings: "NEW SESSION", "SESSION LOG" "SET DATE AND TIME"
        - A currentIndex (current selected index - current row that is highlighted on the ui)

**PCWindow**

- PCWindow is called from MainWindow, we can pass the sessions (from HandHeldDevice) directly into PCWindow
- Iterate through the sessions, and display the date, before frequency and after frequency
    - Already stored in each session in the Frequency class
- Everytime a session is selected in the log, it will upload to the PC and display it

**UpdateMenu Function**

- Updates the progress bar, based on the number of electrodes complete (Based off of the total time it will take)

**Enumerated RunStatus**

- Keeps track of the states of the HandHeldDevice operations
    - ACTIVE - current session is active, and it is running through the EEG and treatment process
    - INACTIVE - session hasn't started yet (default state)
    - PAUSED - session has been paused, initiate timer for 5 minutes
    - DISCONNECTED - session has been disconnected (contact has been lost), initiate timer for 5 minutes

**Enumerated CurrentMenu**

- The CurrentMenu enumeration determines which window of the menu is currently being shown. That way, the tab widget is able to display the correct menu depending on the buttons being pressed.

**Session Time**

- If a user doesn't set date and time, it auto sets it to the current date and time
- Session end time is includes time within pauses / disconnects

**Waveform Generation**

- Waveform is generated randomly from alpha, beta, delta, theta waves
- Random noise is generated for the waveform