Design Explanation:

The Heart Rate Variability(HRV) device is composed of three main objects: MainWindow, HRVtable, and Menu.

The MainWindow object is responsible for displaying the user interface. The UI includes two panels, a Device panel, and a Control panel. The Device panel contains buttons for specific functionalities, RGB led indicating coherence level, a screen to visualize the functionalities, and the status of the battery. The user can use direction buttons to traverse the options in the menu and use the "Select" button to select the function. The screen displays the menu, the real-time HRV graph while the session is running, and the summary after a session is done. The Control panel contains a display of the remaining battery life, a decision button for whether charge the device, and radio buttons for whether the session is about coherent or incoherent heart rate.

The HRVtable object provides the user's coherence/incoherence value and corresponding score in real-time. A new value is acquired per second, and a new score calculated from the latest 5 coherence/incoherence value is acquired per 5 seconds.

The Menu object represents the main menu and sub-menus. Below is the Menu architecture:

- Main Menu
    - Start New Session
    - Settings
        - Breath Pacer Setting
            - 1… 30
        - Challenge Level Setting
            - 1… 4
    - Log/History

Note that we don't have a sensor in our HRV device, hence there is no interruption due to the sensor being off. Also, we have our own design toward the battery, that each session consumes 10% of the battery life, and the device shuts down when the battery life reaches zero.