

# Day 11: Design 4

Monday, July 31, 2023 6:24 PM

## Goals:

- Consolidate all pseudocode into the Design Doc
  - Separate out function headers and variables
- Make software flowcharts
  - Between the devices
  - Between each section of the app code
  - Arduino software priming directions
  - app routing
- Time permitting, help with other sections
- Begin writing code for app, rtc init, finish DAQ code.

## Accomplishments:

- Finished Design Document Draft
- Started implementing BLE Characteristic extraction and packing:

## JS Request Packing:

```
// Create an ArrayBuffer
const buffer = new ArrayBuffer(8);

// Create a view
const view = new DataView(buffer);

// Write Request
view.setUint16(0, 2023, true);
view.setUint8(2, 8, true);
view.setUint8(3, 3, true);

// Read Request
console.log(view.getUint16(0, true));
console.log(view.getUint8(2, true));
console.log(view.getUint8(3, true));
```

## DAQ Record Packing:

```
// Pack record into HRV format and write to hrvChar
char hrvValue[8];
*((uint32_t*) hrvValue) = unix;
*((float*) (hrvValue+4)) = rmssd;
```

## DAQ Request Parsing:

```
// Read the request characteristic
const uint8_t* rawRequest = requestChar.value();

// Variables to extract from the characteristic
uint16_t year = *(uint16_t *) rawRequest;
uint8_t month = *(uint8_t *) (rawRequest+2);
uint8_t day = *(uint8_t *) (rawRequest+3);
```

# Day 12: Meeting Minutes for Design Review

Thursday, August 03, 2023 4:04 AM

- Create app icon
- Rewrite 2.2 “ device must have a portable power source” or something
- Insert page breaks where needed (at the bottom of the page where titles are)
- Include sizing chart for glove rather than explicitly stating in risks
- 3.1.1.1 increase size
- Add abbreviation of RTC (real time clock) to acronyms
- Only include one graphical representation in user interface
- 3.1.2 needs dimensions, little bit, length of wire
- Match font colors (some are the blue some are black), keep it consistent
- Make sure font is properly contrasted against background in app
- 3.3.1.1 and 3.3.1.2 include where we will be placing logos (i.e on packaging, app...)
- Warning labels and flow chart is super nice, easy to follow
- Flyers look great :)
- They love the logos
- 4.1.1 suggested to make less like a drawing, more like a rendered image
- Alternatively, keep the drawing and change the dimensions and lettering as font rather than handwriting, delete the full box sketch
- 4.2 keep the overall schematic suggested to get rid of the actual microcontroller one
- Keep 4.2.6 and 4.2.7 only
- Make 4.2.7 an entire page
- Suggested to color code wires
- Suggested the graph is too confusing, titled as “stress levels” but its HRV
- Suggested to replace the title with a legend/key as stress levels and color code
- BLE Indicate for BLE HRV metric. (Blocking???)
- CAD looks very professional and super nice, appreciated the LED and glove :3
- 4.2.1 suggested to be illegible
- Possible only do the pin outs in this diagram
- Suggested that the libraries used may not be necessary but good to have; final decision that they should be included
- Double check charts are clear and not blurry
- 4.3.1.2.2 typo after “a 5 heartbeats”
- Fix outdated data format for userState.

## Action Items

Action Item	People	Assigned	Due	Completed
Mark things to edit	all	Aug 2	Aug 3	
Create app icon/fix formatting in canva	Ariana	Aug 3	Aug 4	
Fix formatting (font color) /implement suggestions	all	Aug 3	Aug 4	

Fix circuitry section	Eunice	Aug 3	Aug 4	
Image clear flow charts	Siem	Aug 3	Aug 4	

# Day 13: Finalize Device

Thursday, August 03, 2023 4:05 AM

## Goals:

- Before lab, finish most of the initial software writing
  - W: Finish DAQ (Done!)
  - F: Finish App Backend (Mostly Done, still need to do local notifis)
  - Sun: Finish App Front End and integration testing w/ Eunice (Mostly done, still working on fixing SD card).
- Perform code review in/after lab with Group 4