



PointCheck

Responsive UI Implementation

By: Bradon Ladd

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Client: HTS Ontario

A Brief Recap

- ◆ PointCheck is an internal logging tool used by HTS, a Canadian company, who installs and services enterprise level HVAC systems
- ◆ Application allows engineers to routinely enter and sync information in 'checks' about each piece of equipment like status, voltage, safety notes, and more
- ◆ Built using Flutter and Dart
- ◆ Data is stored in a Microsoft Azure database in JSON format
- ◆ Extra tools were needed, such as Google Chrome for debugging and VS Code for editing



Original Proposal

- ◇ Designing a responsive layout objectives:
 - ◇ Drawing and designing a desired UX
 - ◇ Implementing said UX in Flutter/Dart
 - ◇ Touching up any other elements that did not work well in a mobile layout
 - ◇ A stretch goal was defined in case time was available, but the project ended up taking the allotted time.

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The screenshot displays the KORE POINTCHECK web application interface. The top header includes the application logo and name, along with utility icons for refresh, settings, download, and share. The left sidebar features a hierarchical navigation menu with categories like HVAC, Mech Rm, AHU units, Hydronic, and Rooms. The main content area shows a locked document with a size of 187.328 KB. It contains project information for '158 Sterling Rd I' and 'Bluebeam', a reminder for 'Bradon Ladd - Heating Valve: A reminder', and a group summary for 'HVAC' with a completion status of 16/17. The bottom status bar shows the user 'Bradon Ladd', 'Locked: None', the version 'v1.10.1', and a Wi-Fi signal icon.

KORE POINTCHECK

Size: 187.328 KB

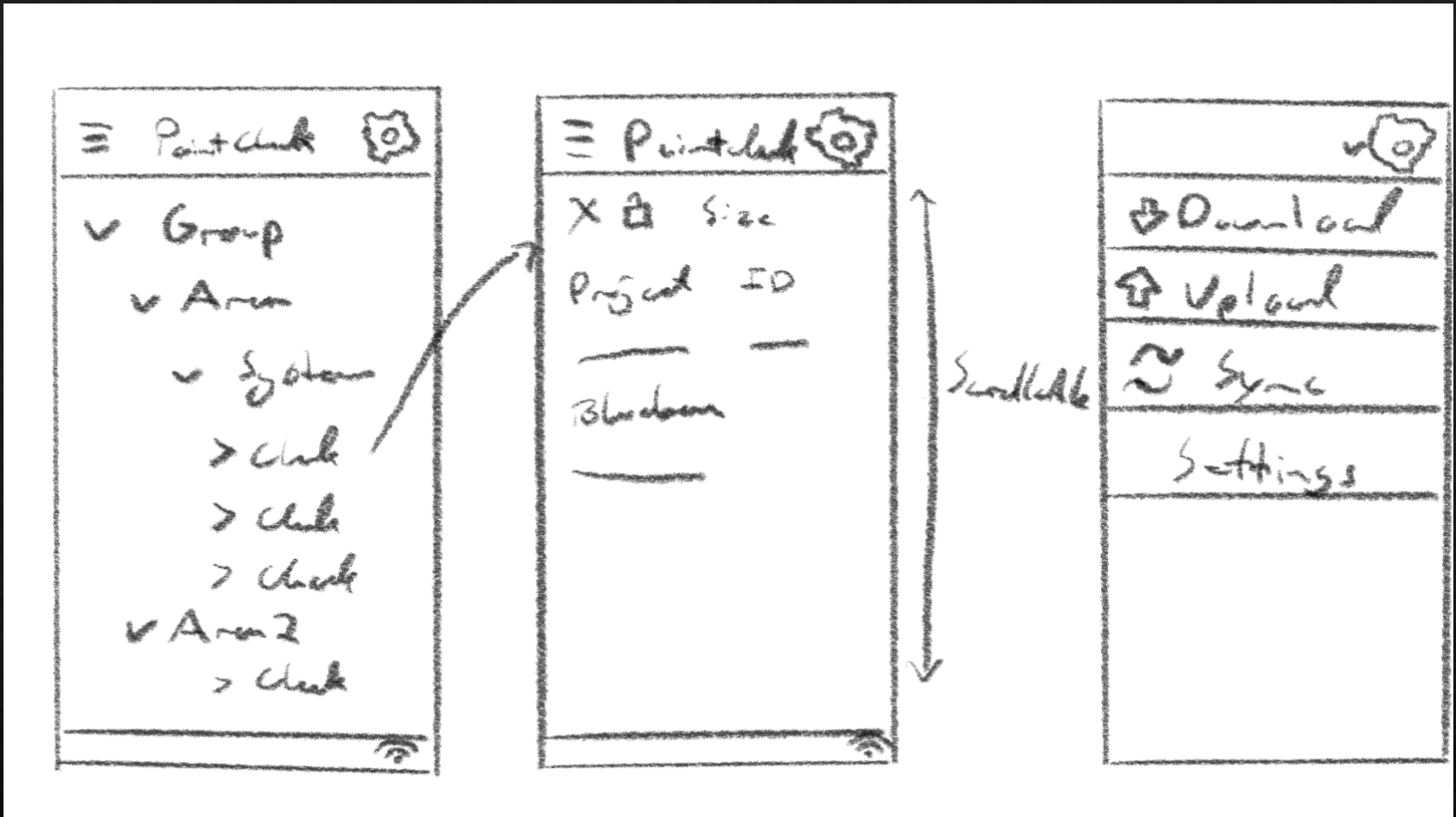
Project 158 Sterling Rd I Project ID Bluebeam Completed: 188/206

> Bradon Ladd - Heating Valve: A reminder

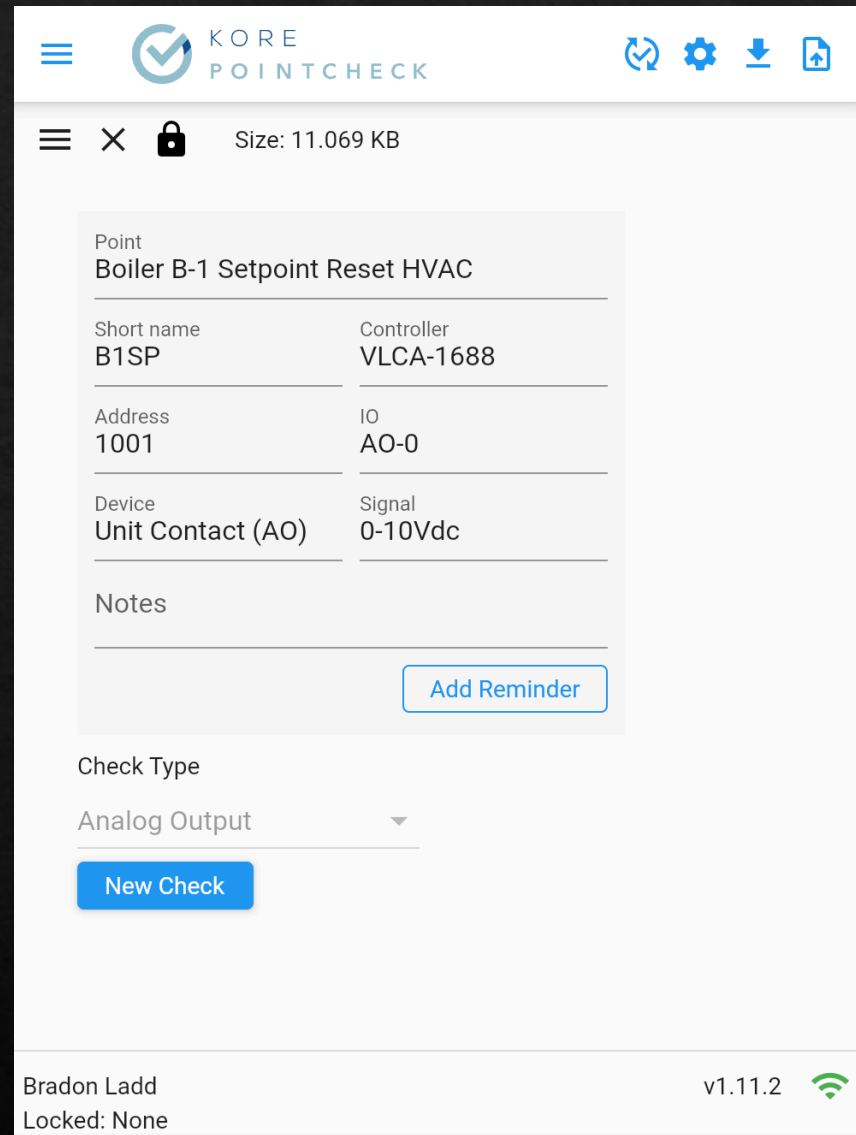
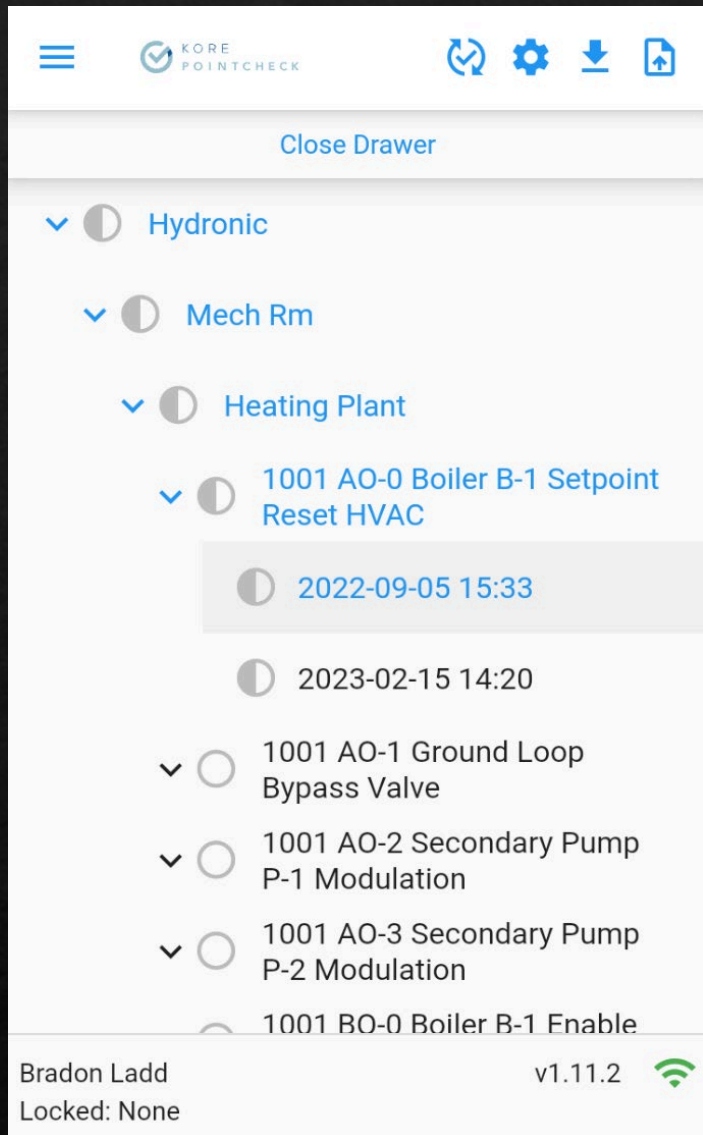
Group HVAC Completed: 16/17

Bradon Ladd Locked: None v1.10.1

Web layout prior to the re-design. Elements were static and would not comfortably resize with screen size changes.



Initial sketches detailing the drawer system and vertical information layout



Mobile Size

Major Revisions

- ◇ Rather than the UI respond to every available width, we instead opted to have the window resize to specific ranges of screen widths (in pixels)
 - ◇ 0-800 (mobile): Information is split between two screens, accessible by a drawer toggle. Only one pane shows at a time. Information pane is laid out vertically.
 - ◇ 800-1200 (tablet): The panes are shown side by side, but the information pane is laid out vertically.
 - ◇ 1200+ (web): The standard web layout is used. Information pane is laid out horizontally to fill the width of the screen.

- v d Hydronic
- v d Mech Rm
- v d Heating Plant
- v d 1001 AO-0 Boiler B-1 Setpoint Reset HVAC
 - d 2022-09-05 15:33
 - d 2023-02-15 14:20
- v o 1001 AO-1 Ground Loop Bypass Valve
- v o 1001 AO-2 Secondary Pump P-1 Modulation
- v o 1001 AO-3 Secondary Pump P-2 Modulation
- v o 1001 BO-0 Boiler B-1 Enable Disable
- v o 1001 BO-1 Alarm Horn
- v o 1001 BO-2 Error Light

x l Size: 11.069 KB

Point
Boiler B-1 Setpoint Reset HVAC

Short name B1SP	Controller VLCA-1688
Address 1001	IO AO-0
Device Unit Contact (AO)	Signal 0-10Vdc

Notes

Add Reminder

Check Type

Analog Output v

New Check

Bradon Ladd Locked: None

v1.11.2

Tablet Size

Challenges



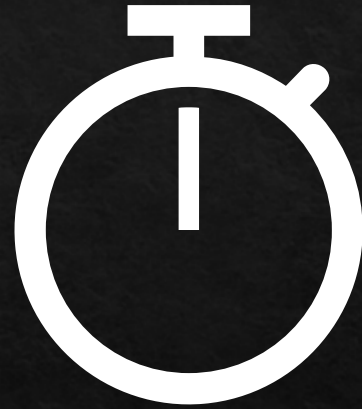
Flutter/Dart Hurdles

State Management issues

Layout rendering bugs

Testing solutions

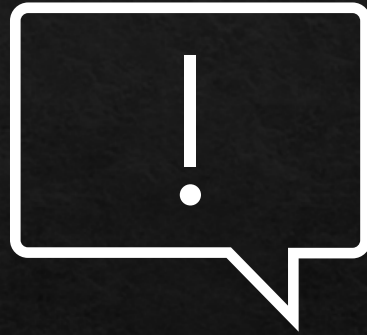
Challenges



Burnout/Time Management

Managing the project on top of a busy school schedule proved to be the biggest hurdle

Challenges



Communication

Understanding feedback on the PR

Learning how to communicate with customer

Thanks!