Project Plan Presentation
DRIVEN-4 Connect Update and Upgrade

The Capstone Experience
Team DRIVEN-4
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Project Sponsor Overview

• Operational support, technology implementation, process development, and strategic insight and direction
• Areas of expertise include PLM, IoT, and cybersecurity.
• Headquarters in Saint Joseph, Michigan
Project Functional Specifications

• Customizing their data sent in and transmitted from the boards
• Better user interface on the home page of the web application for easier navigation
• Easier navigation to their firmware versions of the device, under device information
• Easier Data analysis interface
• One Super user admin account for whole application
• DRIVEN-4 Employee Account portal for the whole application
• Company Account admins/users for the whole application
• Easier billing information insights per device
Project Design Specifications

• Easy online application to manage PLM and IoT solutions
• Ability to access billing information, install firmware for various modules, and perform data analysis on logs sent back from the modules
• Four different user levels, two for DRIVEN-4 and two for outside companies
Screen Mockup: Home-Device Info

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<th>Serial No.</th>
<th>IMEI</th>
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Screen Mockup: Subscription Info

- Modules Deployed: 10
- Additional subscription details here?
- Data Usage: 6.7 MB
- Amount Owed:
  - Billables:
    - Monthly Deployment: $30.00
    - Price per MB: $0.50
  - Total:
    - Deployment Fee: $30.00
    - Data Usage: $3.35
    - Sales Tax (6%) : $2.00
Screen Mockup: Query and Analysis
Screen Mockup: Billing Information
Project Technical Specifications

- HTML, CSS, and JS to improve upon user interface
- Flask and SQLAlchemy to update schema and SQL interface
- Customizable graphs of module data using Pandas
- FastAPI will update database and configuration of module boards
Project System Architecture
Project System Components

• Hardware Platforms
  ▪ DRIVEN-4 Connect Module – Custom built board to transmit different readings and logs back to webapp

• Software Platforms / Technologies
  ▪ HTML/JavaScript/CSS – Industry standard for designing websites
  ▪ Flask – Framework used to route between web pages and provide connection to databases
  ▪ MySQL/SQLAlchemy – Database and ORM engine
  ▪ AWS – Cloud Computing service that hosts the webapp
  ▪ Pandas – Frontend service to do analysis
Project Risks

• Update database schema and integrating ORM
  ▪ Make database efficient to ensure speed and stability
  ▪ Research SQLAlchemy for creating advanced queries

• Protecting sensitive customer information
  ▪ Billing information and logins will be in a database
  ▪ Research industry standards for how to securely store data

• Building new code on top of previous semester project
  ▪ Base project was made by spring 2023 capstone members
  ▪ Maintain constant contact with sponsor for project scope

• Creating responsive application
  ▪ Need to make experience consistent across aspect ratios
  ▪ Conscious testing using many variable display sizes
Questions?