

MICHIGAN STATE

UNIVERSITY

Project Plan Presentation

Dealer Experience Dashboard

The Capstone Experience

Team Ford

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*From Students...
...to Professionals*

Project Sponsor Overview

- Headquartered in Dearborn, MI
- Automotive Industry Leader
- Spans the Globe
- Family Ideals and Innovative Tech.



Project Functional Specifications

- Ford dealerships are moving towards utilizing cloud-based data management system in attempt to modernize current systems which are having issues visualizing and administering large amounts of data.
- Provides a secure react web application for Ford dealerships to monitor quantitative performance data that is powered by Ford's Data warehouse.
- Our software provides a seamless React UI that will integrate the data pulled from google Big Query into a table format that meets Ford's standards or better.

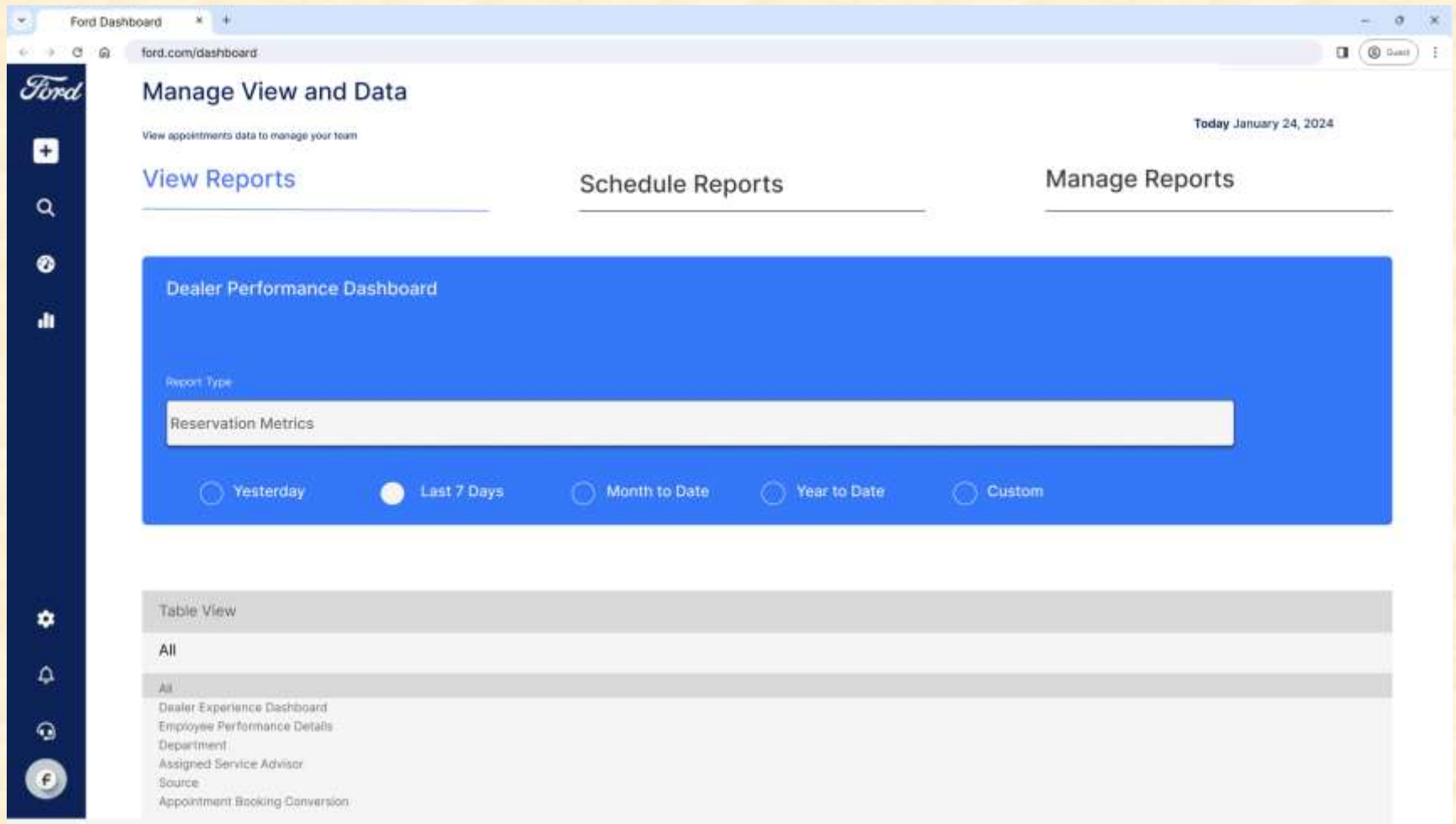


Project Design Specifications

- Consists of 3 pages – View Reports, Schedule Reports, Manage Reports
- Displays Vehicle Servicing Data in Multiple Views
- Customizable Interface



Screen Mockup: View Reports



Screen Mockup: Dealer Performance Overview

Table View

Dealer Performance Overview

Dealer Performance Overview ⓘ

	Totals
Show	22(4%)
No Show	366(74%)
Canceled	107(22%)
Total Set	495(100%)



Screen Mockup: Schedule Reports

The screenshot shows a web browser window titled "Ford Dashboard" with the URL "ford.com/dashboard". The page header includes the Ford logo, the title "Manage View and Data", the subtitle "View appointments data to manage your team", and the date "Today January 24, 2024". The main content area is divided into three tabs: "View Reports", "Schedule Reports" (which is active), and "Manage Reports". A blue highlighted box contains the following elements:

- A text prompt: "Stay up to date with the metrics you want delivered to your inbox."
- A section titled "Add/Remove Recipient(s)" with a dropdown menu currently showing "Add Recipient".
- A section titled "Frequency" with a dropdown menu currently showing "Weekly".

Below the highlighted box, there is a section for "Report type (Select all that apply)" with three options, each with an unchecked checkbox:

- Reservation Metrics**
 - Dealer Performance Overview
 - Employee Performance Details
 - Department
 - Assigned Service Advisor
 - Source
 - Appointment Booking Conversion
- Repair Order Metrics**
- Pickup and Delivery Metrics**



Screen Mockup: Manage Reports

Ford Dashboard

ford.com/dashboard

Today January 24, 2024

Manage and View Data

View appointments data to manage your team

View Reports Schedule Reports **Manage Reports**

Your Scheduled Reports

Overview

Schedule New Report

Recipients	Frequency	Report Type	Last Saved		
+ 1	Weekly	Reservation Metrics	1/27/24 @ 4:04 PM	Edit	Delete



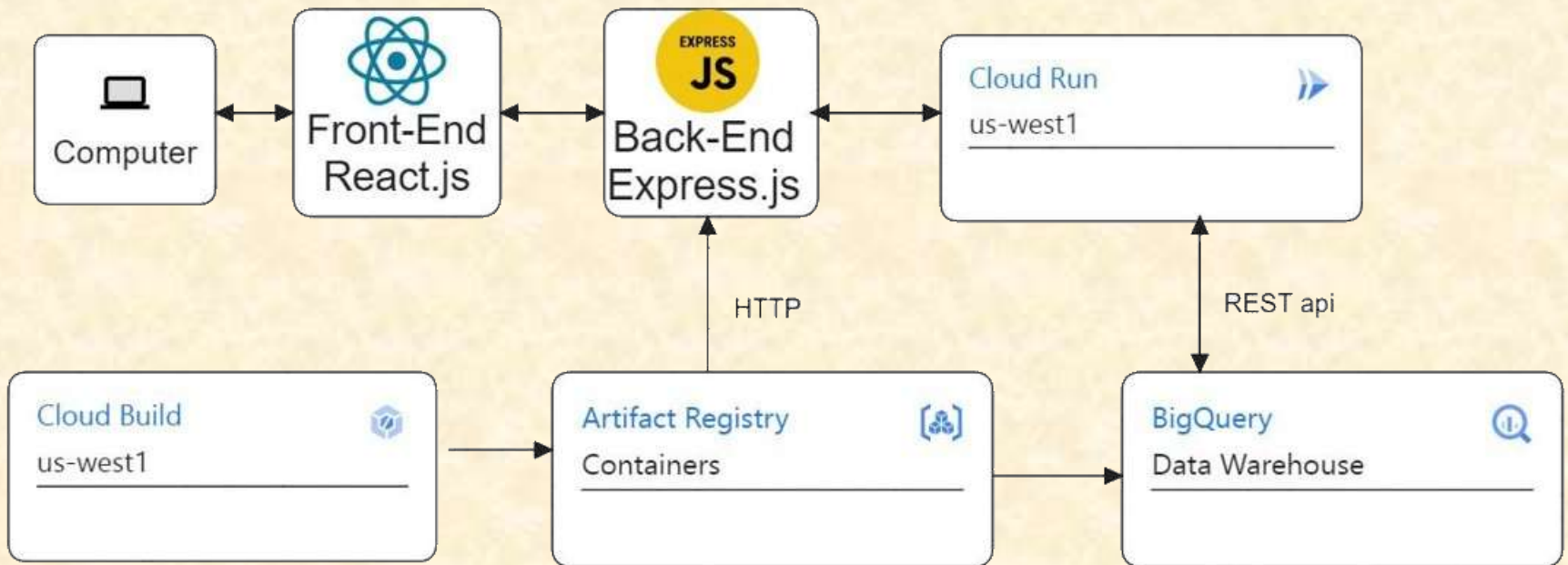
Project Technical Specifications

- Web Application
- Front-End UI
- Backend JS
- GCP Data Warehouse

- Languages, Frameworks, and Development:
HTML, CSS, JavaScript, SQL, React.js, Vite,
Node.js, Express.js, Google Cloud Platform



Project System Architecture



Project System Components

- Hardware Platforms
 - N/A
- Software Platforms / Technologies
 - Google Cloud Platform – Big Query, Cloud Run, Artifact Registry
 - IDE: Visual Studio Code/IntelliJ IDEA
 - Gitlab: Deploy and Develop Software code



Project Risks

- Integration Challenges
 - React front-end cannot directly fetch from GCP BigQuery
 - Utilized Express back-end to interface with BigQuery
- Slow and Expensive Queries
 - Inefficient BigQuery queries and unfit data model
 - Ensuring our queries fit ford standard, and be optimized with data structures and using a query planner
- Security Concerns
 - Security risks from improper API use or query jacking
 - Secure API endpoints and use HTTPS for data transfer that doesn't interfere with ford uses and make backend code less susceptible to query jacking
- Better UI experience
 - Make a same dashboard and give a better user experience to employees without directly interacting with the users of the dashboard
 - Visualizing the data, support local saving and email sending and get multiple revisions from our Ford Contacts for clarity



Questions?

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