

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# Project Plan

## VIN-Verse

### The Capstone Experience

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

# Functional Specifications

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- Managing a vehicle's service history is a painful experience that requires too much paperwork.
- VIN-Verse digitizes your service history, and makes it easily manageable.
- VIN-Verse is a platform that centralizes vehicle data for users across the industry.
- Utilizes an existing data-set of repair orders to flesh out vehicle histories and provide analytics



# Design Specifications

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- Role-Based interface
  - Consumers
  - Service Facilities
  - Manufacturers
- Creating dashboards for each role that display pertinent information
- Integration engine designed to allow for the consumption of data from various outlets



# Screen Mockup: Consumer – VIN History

The screenshot shows a web application interface for 'Vin-Verse'. The top navigation bar includes the title 'Vin-Verse' and a breadcrumb trail 'User > Vin History'. The left sidebar is divided into two sections: 'User' and 'Settings'. Under 'User', there are three menu items: 'Vin History' (with a list icon), 'Self Repair' (with a document icon), and 'Request Access' (with a lock icon). Under 'Settings', there are two items: 'Profile' (with a person icon) and 'Info' (with an information icon). The main content area is titled 'Vin History' and features a search bar with the placeholder text 'Search for VIN'. Below the search bar is a table with the following data:

VIN	Accessed By	Date	Repair Details
1C4BJWFGXDL531773	Belle Tire	9/13/18	Oxygen Sensor Replacements
1C4BJWFGXDL531773	Outshiner	9/13/18	Ignition Coil and Spark Plug Replace...



# Screen Mockup: Self Repair Form

The mockup shows a web application window titled "Vin-Verse". On the left is a sidebar with a "User" section containing "Self Repair" (with a document icon), "Vin History" (with a circular arrow icon), and "Request Access" (with an envelope icon). Below this is a "Settings" section with "Profile" (with a person icon) and "Info" (with an information icon). The main content area has a breadcrumb "User > Submit Repair" and a "Self Repair" heading. The form consists of four input fields: "VIN #", "Model", "Parts Repaired", and "Date of Repair". Below these is a larger text area labeled "Repair Details". At the bottom of the form is a "Submit Repair" button with a cloud icon above it.



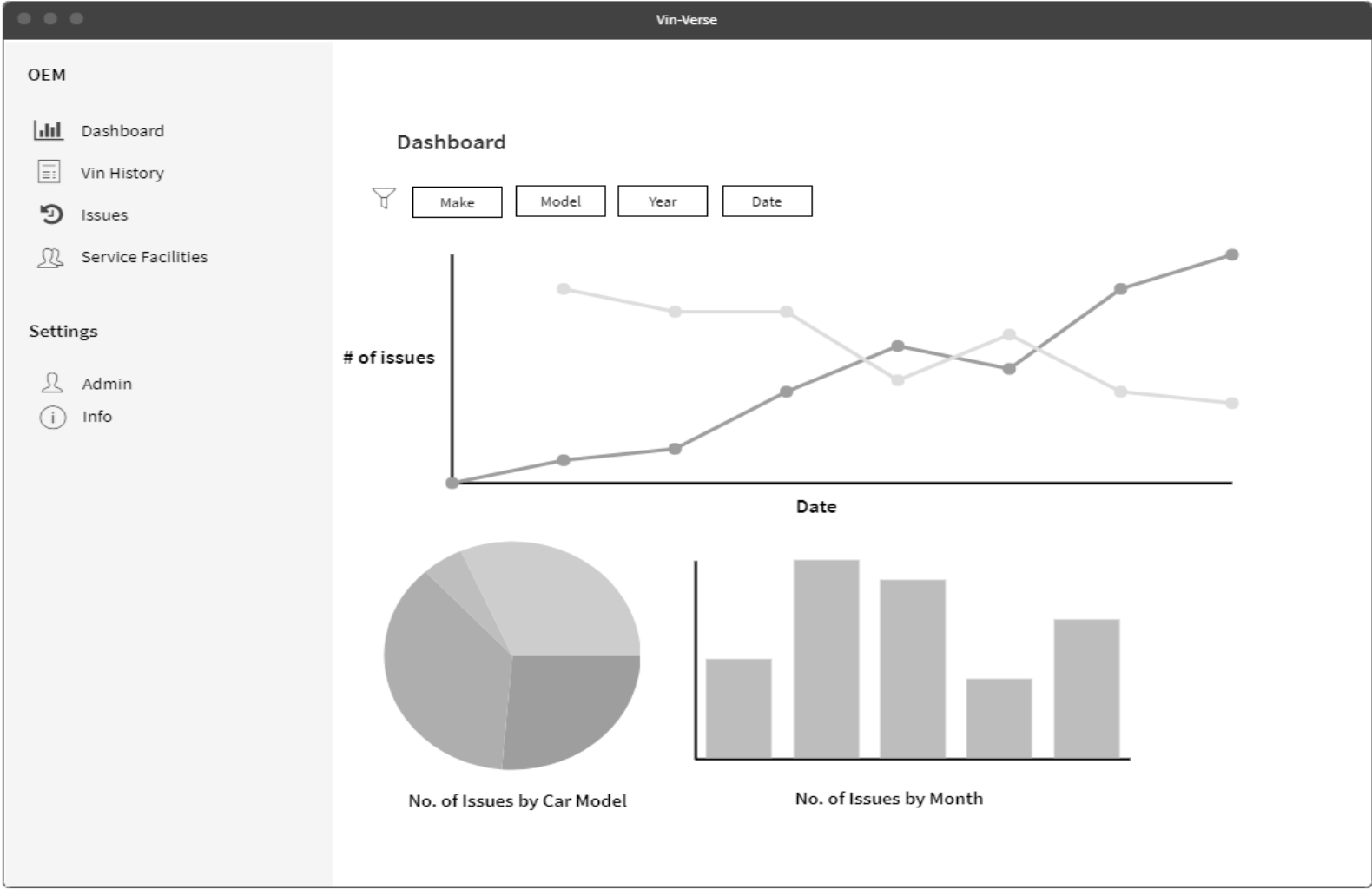
# Screen Mockup: Service-Facility Repair History

The screenshot shows a web application interface for 'Vin-Verse'. The main content area is titled 'Service Facility > Vin History'. On the left, there is a sidebar with the following options: 'VIN History' (selected), 'New Repair', 'Request Access', 'Access History', 'Settings', 'Profile', and 'Info'. The main area displays a 'VIN History' section with a search bar labeled 'Search for VIN'. Below the search bar is a table with the following data:

VIN	Owner	Date	Repair Details
1C4BJWFGXDL531773	John Doe	9/13/18	Oxygen Sensor Replacements
JTMWF4DV8C5047998	Richard Smith	9/13/18	Ignition Coil Replacements
JH4DB1650NS000627	Dianne Adams	9/12/18	Catalytic Converter Replacements
4JGAB54E81A277648	Melissa Sator	9/11/18	Break Replacement
3B7HF13Z11M269883	Steven Phillips	9/10/18	Tire Rotation and Oil Change
JHMZE2H73AS009608	Daren Williams...	9/9/18	Catalytic Converter Replacements



# Screen Mockup: OEM - Analytics Dashboard



# Technical Specifications

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- Microsoft SQL Server 2017
  - Utilizes stored procedures
- Web Application
  - Built with C#/ASP.NET and wrapped in Angular
- Integration Engine
  - Implemented with C#





# System Architecture

## Data Feeds



Manufacturer



Service Repair Facility



Consumers



Potential Buyers

Service Records

FTP Service



## Back-End



Microsoft SQL Server

Front-End



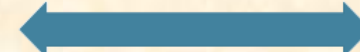
Repair orders and service history



Self-reported repairs and service history



View vehicle history



ASP.net



# System Components

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- Hardware Platforms
  - Microsoft Server 2016 located in the Capstone Lab
- Software Platforms / Technologies
  - C#/ASP.NET
  - Angular
  - SQL



# Risks

- Risk 1
  - Confidentiality of User information
  - Salt and hash passwords, limit user input to prevent SQL injection
- Risk 2
  - Decreased Manpower
  - Set clearly defined goals and avoid feature creep
- Risk 3
  - Cross-Platform Friendly Web App
  - Use of System.Web.Mobile ASP.NET library that have mobile compatibility in mind
- Risk 4
  - Verification of Self-Reported Repairs and Ownership
  - Having users upload proof of purchase as well as including old part's serial number, and use of the registration as a verifying document
- Risk 5
  - Integration of Unique Service Order Schemas
  - Categorizing fields and searching for key words, as well as validating data types for specific fields



# Questions?

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