

MICHIGAN STATE UNIVERSITY

Project Plan Presentation Dealership Parts and Telematic Insights

The Capstone Experience

Team Urban Science

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From Students... ...to Professionals

Project Sponsor Overview

- Urban Science is a global automotive consulting firm that is based in Detroit, MI
- Urban Science serves automotive Original Equipment Manufacturers (OEM) in over 70 countries
- Helps dealerships and automotive OEMs derive insights using telematic vehicle data



Project Functional Specifications

- Dealerships don't know how to effectively use the new telematics data that cars are generating
- Our project draws insights from this data through analytical processing and visualization
- Visualize data to highlight metrics and expose trends in dealership profitability
- Display key insights to improve speed, access, and consumption of data
- Scalable, with capacity for additional data
- User roles determine data visibility

Project Design Specifications

- Web application that visualizes telematic data
- Different user roles are presented different data depending on authorization
- Interactive dealership icons that redirect user to a separate webpage with further insights on the dealership(s)
- Insights are pulled from geographical data such as automotive alerts by zip code and dealership traffic

Screen Mockup: Dealership Map



Screen Mockup: Dealership List

→ C ☆ în teler	\$				
		Telematics Ap	p		
Data Display:		La Fontaine Data			
Map View List View User Management: Upload Data:	< Search Dealership			>	
	Vehicle Entry	Vehicle ID	Vehicle Alert Date	Acknowledgement Date	
	36	9369	6/23/21	7/12/21	
	37	10065	6/25/21	7/13/21	
	38	10556	7/15/21	7/23/21	
	39	10397	7/15/21	7/23/21	
	40	11489	7/16/21	7/25/21	

Screen Mockup: User Management

· → C ☆ intelemapics.net/user-management				
	Teler	natics App		
Data Display:	<u></u>			
 User Management: Permissions Upload Data: 	Search Email			
	Employee #	Email	User Role	
	N00346	admin@admin.com	admin	~
	N00487	manager@lafontaine.com	regional manager	~
	N00962	jon.software@elder.net	dealer	~
	N00218	district.owner@gmail.com	regional manager	~
	N00856	jake.sales@lafontaine.com	dealer	~

Screen Mockup: Document Upload

••• • 🙀 Telemapics	× +								
\leftarrow \rightarrow C \triangle \triangleq telem	→ C 🏠 🗎 telemapics.net/upload-documents								
=	Telematics App	8							
Upload Documents									
	Drag and drop the file(s) here or click on "Browse Files"								
	Quarter4_telemetrics.csv								
	BROWSE FILES								

Project Technical Specifications

- Backend
 - C# .NET
 - SQL Server
- Frontend
 - Angular JavaScript Framework
 - HTML
 - CSS
 - TypeScript
- Other
 - Git
 - Visual Studio
 - Visual Studio Code

Project System Architecture



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Project System Components

- Hardware Platforms
 - Google Cloud
 - Local Dedicated Server
- Software Platforms / Technologies
 - SQL Server
 - Git
 - Infragistics Angular UI Development Tools for Visualization

Project Risks

- Selection of Data and Methods for Visualization
 - Determine what data is important and how to display it
 - Mitigation: Rank each data type and confirm important data with client
- Business Layer Data Processing Methods
 - Team is inexperienced with creating business layers on web applications
 - Mitigation: Discuss possible architecture designs for business layer with client
- Properly Exposing Business Layer Backend APIs
 - Deploy backend APIs so that telematic data can be displayed on the front end
 - Mitigation: Performance test backend. Emphasize unit tests and integration tests
- SQL Server Setup
 - Keep the local server running reliably with SQL Server
 - Mitigation: Stress test the local server and have a backup server for emergencies

Questions?



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