Recreational Vehicle Monitoring and Real-Time Data Analysis

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Purpose

Our system will give any car owner/user access to professional grade vehicle performance monitoring equipment in a single, complete package

We will record and deliver diagnostic information such as:

- Location
- Acceleration
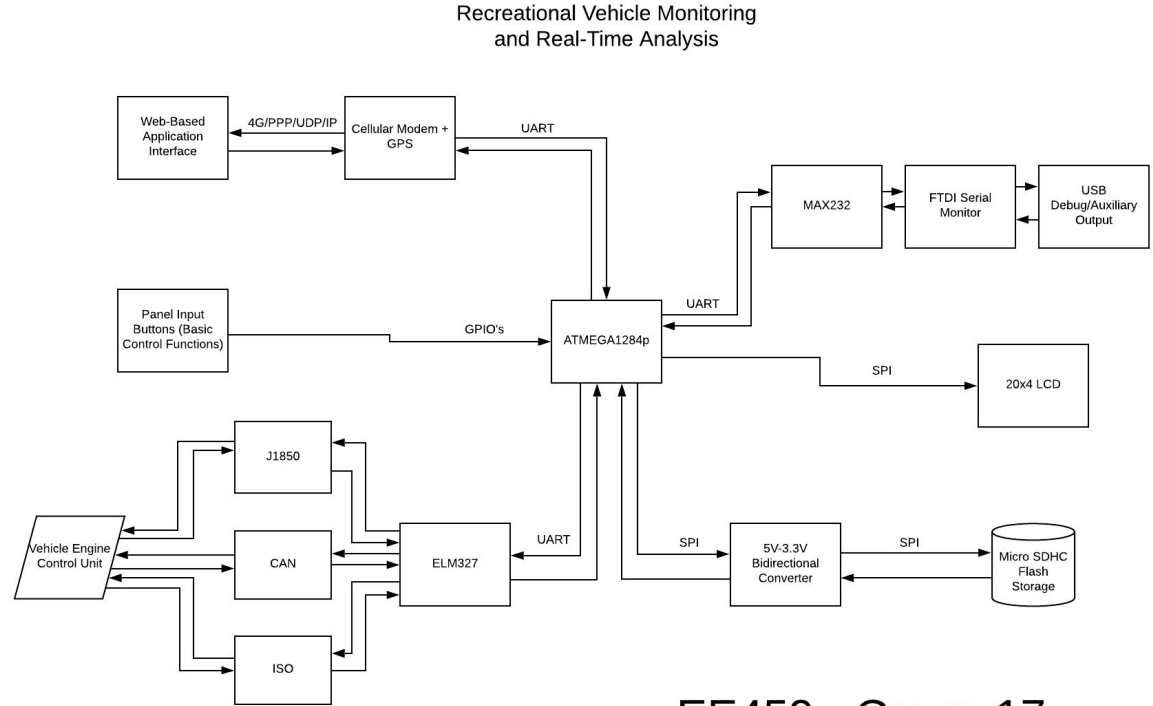- Car performance data

Usage

Can be used by vehicle enthusiasts, parents of young drivers, and recreational racing participants for monitoring and analysis purposes.

Users will be able to identify driving characteristics in real-time through logged data.

Used to monitor safety hazards, premature vehicle and engine wear, and provide immediate and specific maintenance notifications
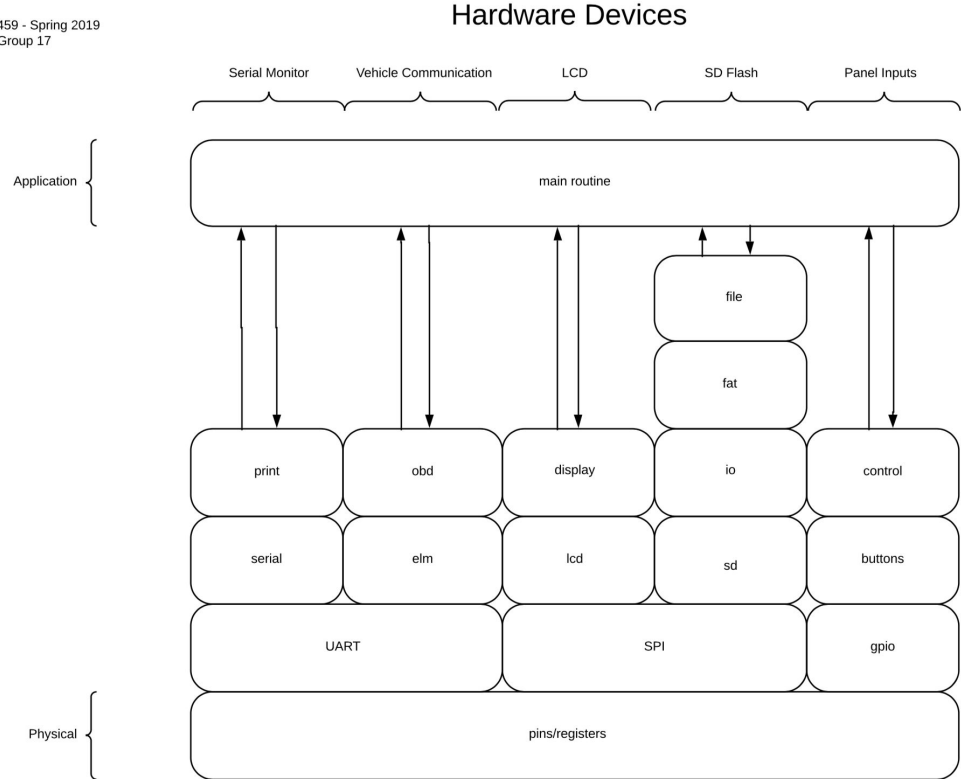
Major Pieces

Recreational Vehicle Monitoring
and Real-Time Analysis

EE459 - Group 17

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Block Diagram

- Serial Monitor
- Vehicle Communication
- LCD
- SD Flash
- Panel Input

Software Modules

USC EE459 - Spring 2019
Group 17

Hardware Devices

Cost Projection

Item	Cost	Details
LCD	$22.70	20x4 Characters, Serial, white-on-blue
ELM + CAN/ISO/J1850 Hardware	$21.00 + $10	OBD2-RS232 Protocol Interpreters
Microprocessor	$5.05	ATMega1284
SD Flash + Hardware	$10.00	Carrier, Regulator, and Logic Converter
Quectel EC25	$35.00	LTE Cell Modem
Total:	$103.75	Estimate

Schedule

Week	Task
Week 8 (2/25 - 3/1)	DDR Presentation
Week 9 (3/4 - 3/8)	Software Development
Week 10 (3/11 - 3/15)	Spring Break: Parts come in
Week 11 (3/18 - 3/22)	Project Assembly & Software Development
Week 12 (3/25 - 3/29)	Project Assembly & Software Development, Begin Testing
Week 13 (4/1 - 4/5)	Debugging and Testing
Week 14 (4/8 - 4/12)	
Week 15 (4/15 - 4/19)	Project Demo Due
Week 16 (4/22 - 4/26)	Oral Presentation

Issues/Future Considerations

- If possible, we want to add the capability to send text message alerts regarding the vehicle status. The user can opt into this service and receive whatever alerts that they may want to receive.
- We are having memory issues with the microprocessor- had to upgrade the ATMega1284 because we have already run out of program memory.

Questions?