Vehicle Fleet Management System

Group 02-04:
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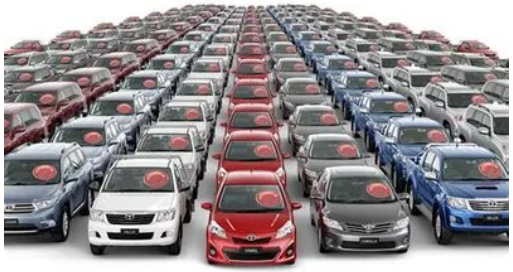
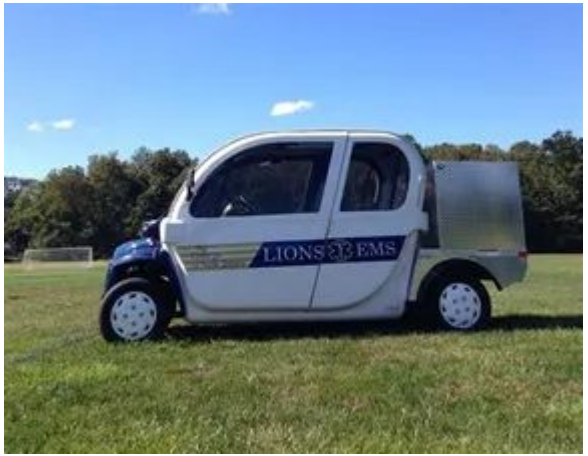
Problem statement



- The TCNJ vehicle fleet is composed of many vehicles of different types which all have internal combustion engines
- The current fleet is not as efficient as it could potentially be, both economically and environmentally
- Other types of fuel and engines exist which can lower the cost to maintain the vehicles and reduce CO2 emissions that impact the environment

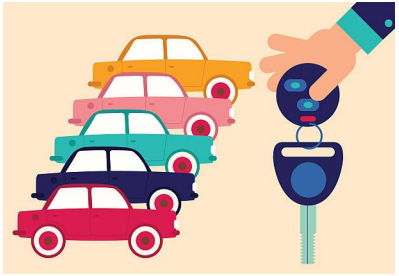


Objective of the application

- Effective decision making for an environmentally and economically stable vehicle fleet
- Determine eco friendly fuel sources
    - Purchasing strategy:
        - Maximize benefits relating to cost
        - Provides a cleaner campus
- Development of a secure and informative database
    - can hold financial data that can facilitate the analysis of what vehicles to purchase with their respective fuel source(s)

End product

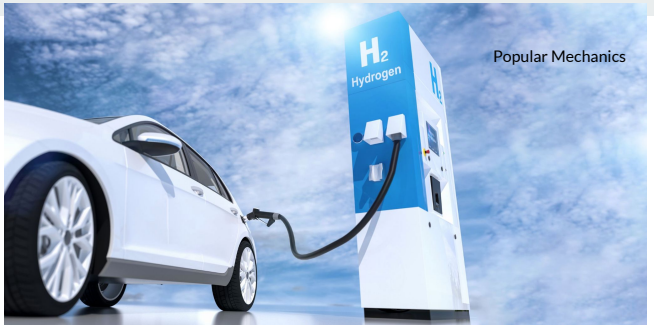
- In the end, we will have database system that allows for a more cost-efficient and sustainable operation of the TCNJ vehicle fleet
- An interactive web-based user interface will also be implemented in connection with the database, to allow users to interact with, retrieve, and analyze the data using queries
- Users can access this site and fill out necessary fields and submit.
    - Retrieved data from the database can then be analyzed to answer the users' questions about how best to compose the TCNJ vehicle fleet from an economical and environmental standpoint.



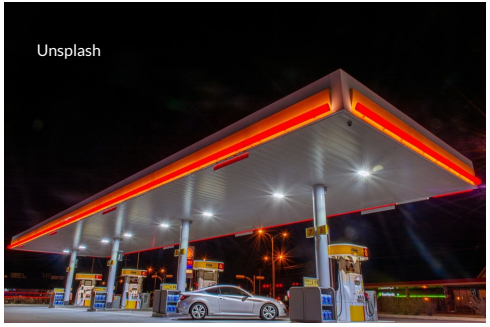
Importance of this application

- Determine which vehicles will provide the most environmentally and financially efficient option
- Maximize environmental objectives while maintaining the respective budget
- Provide a secure and accessible tool to guide which vehicles to purchase
- Provide a foundation for storing this data as infrastructure for hydrogen and electric vehicles
    - technology and energy are susceptible to change

Researching and obtaining data



- Use data provided by Paul Romano on the current makeup of the TCNJ vehicle fleet.
- The provided data files include information pertaining to
  - Information on what types of vehicles currently make up the fleet
  - What types are proposed for the near future?
  - What types are planned to be added in the far future?
- Conduct external research on different vehicle/fueling options



Existing systems

- At the moment, TCNJ does not have an application to assist in economic and environmental analysis of the vehicle fleet.
- Our module will provide this functionality so that the college can use the module to facilitate decisions in the future relating to the campus vehicles.

Other uses of this system

- System should be able to be modified and upgraded
- May need to support new attributes and types of data in the future
- Future will see new emerging alternative fuels and types of engines/vehicles
- Database can also be expanded upon to provide support for other projects
    - Can store financial data and run analyses to help in cost, budget, environmental impact decisions
    - Does not have to be limited to only the TCNJ vehicle fleet