

EV Route Guidance APP

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Abstract

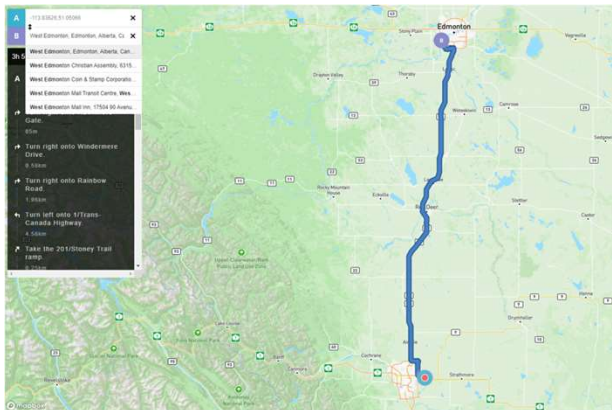
- AISS Consulting has been tasked with developing a solution for Electric Vehicle users, a route guidance solution that is more tailored towards their vehicles' needs. The user will be able to input multiple destinations and the software will be able to give them the best route given these destinations.
- The EV Route Guidance project is currently software based. The User Interface consists of a web-based application interface. No hardware will be required for this project.

Introduction

- With new interest in climate change and reducing the use of fossil fuel along with new programs like the Zero-Emission Vehicles (iZEV) Program from Transport Canada [1].
- it has become more and more enticing to consumers to opt for EV (electric vehicles) as noted from the fact in 2022 there was a 35% increase in EV units sold compared to 2021 [2]. However, with this increase in interest, a major setback for sales is the lack of infrastructure as there's a need for charging stations [3].
- This is particularly an issue considering how many people within Canada drive across the country, outside of urban areas. Alongside this, different vehicles need different chargers at this point in time. Thus, our aim is to create an application that would allow for routing with charging stations in mind.

Results & Discussion

- Website performs as stated above and calculates fastest route to destination while factoring in the range of the EV
- If the destination is outside of the range the application will change the route to include the nearest charging stations optimized for minimal route disturbance.
- The App is a web application and as such is unable to provide live charge monitoring.



Conclusions

The app is valid proof of concept and is able to provide EV users with navigational aid. The lack of real-time charge monitoring is a hindrance that should be corrected in future releases. The app is limited in potential in its format as a web app and a future release should be compatible with mobile phones natively.

References

1. Transport Canada, "Program overview," Transport Canada, <https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/incentives-zero-emission-vehicles/program-overview> (accessed Mar. 24, 2024).
2. N. Mah, "Canada Electric Vehicle (EV) statistics: EV Industry Data," EnergyRates.ca, <https://energyrates.ca/canada-electric-vehicle-ev-statistics-ev-industry-data/#:~:text=General%20Statistics,Canada%20grew%20by%20one%20third>. (accessed Mar. 24, 2024).
3. M. Gollom, "The federal government wants Canadians to switch to electric vehicles. are they interested? | CBC News," CBCnews, <https://www.cbc.ca/news/canada/electric-vehicles-mandates-market-government-1.7066264#:~:text=Charging%20stations%20rebatess%20would%20fuel,who%20lost%2C%22%20he%20said>. (accessed Mar. 24, 2024)

