

# Vehicle Inventory Upkeep

Drive your inventory with  
precision

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# Vehicle Inventory Dashboard

Our dashboard was created to help car dealership manage their car inventory in an interactive way. With the dashboard they will be able to look at the following information:

- You will have the option to select year, make and model for a car.
- We have a line graph that shows the trend of fuel efficiency across the years for each car selected.
- A pie chart showing the amount of new cars vs. used cars in stock.
- A bar graph that shows the total number of cars in stock for the specific make/model and year combined.
- A display with details about the specific car selected.

# Why Vehicle inventory dashboard

Nowadays automotive dealerships face different problems here are some of the most common:

- **Evolving customer needs:**
- **Changing Sales Strategies.**
- **Preference for digital communication.**
- **Inefficient Dealership Process.**
- **Digital Transformation and Online competition.**
- **Supply Chain Delays:** Effective inventory management using real-time data and streamlined communication between departments and combat supply chain issues and improve efficiency.

# Current Systems in Place

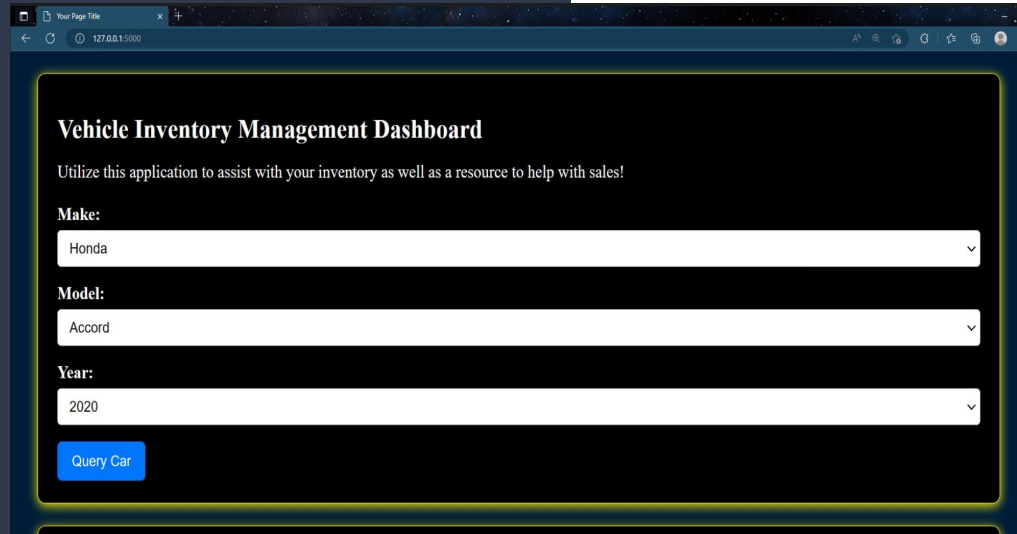
- **Invest in Automotive Inventory Management Systems (IMS/DMS):**
  - Real-time inventory tracking for up-to-date stock management.
  - Sales tracking and analytics to inform data-driven inventory decisions.
  - Reporting features to identify slow-moving vehicles and adjust sales/marketing.
  - Automation to reduce manual tasks and errors, improving efficiency.
- **Optimize Inventory Turnover:** Strategic management improves customer satisfaction, reduces costs, and increases revenues.
- **Understand and Track Inventory Categories:**
  - Types of vehicles: New, used, certified pre-owned, and trade-ins.
  - Use software to track details (VIN, make, model, year, mileage, price).
- **Keep Inventory Fresh and Appealing:**
  - Know your target market to stock the right vehicles at the right price.
  - Utilize first-party data (sales, customer demographics, website analytics) to make better inventory decisions.
  - Diversify inventory to attract a broader customer base.
- **Incorporate VIN-Specific Marketing:**
  - Track how long vehicles stay on the lot, and use VIN-level marketing to target specific audiences and move slow-moving vehicles.
- **Improve Your Bottom Line with Proper Inventory Management:**
  - Effective tracking and understanding of inventory lead to smarter business choices.
  - Fullpath's AI-powered customer match campaigns help move aging inventory 60% faster, boosting profitability.

# Process

- Identification of a problem and Databases
- Proposal
- Data Creation, Cleanup and Data update
- MongoDB database creation
- Flask app
- JavaScript file creation
- HTML Integration

# Vehicle Selection

With the selection of the make the dropdowns will filter to only show the models and years that are available to that manufacturer.



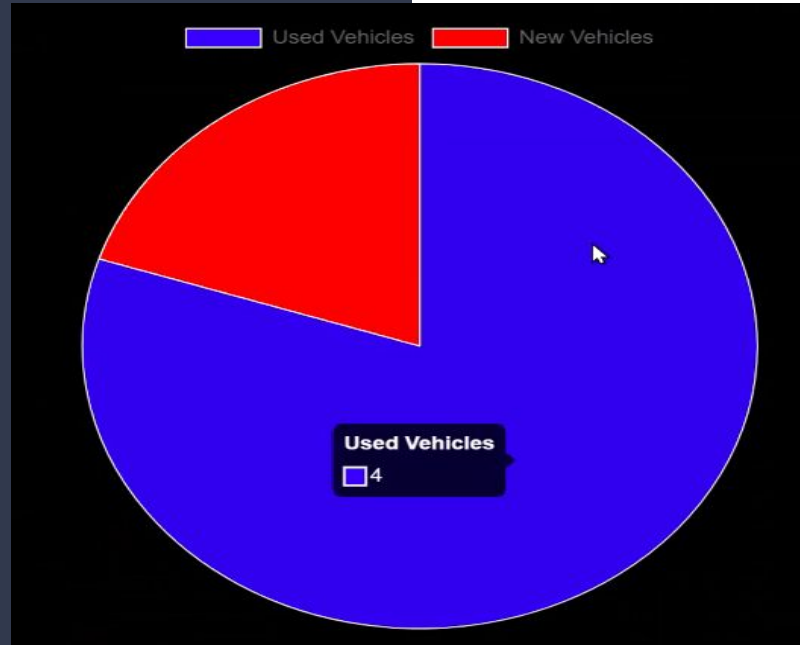
The screenshot shows a web browser window with a single tab titled 'Your Page Title'. The address bar displays '127.0.0.1:5000'. The main content area has a dark background with a yellow border and contains the following elements:

- Vehicle Inventory Management Dashboard**
- Utilize this application to assist with your inventory as well as a resource to help with sales!
- Make:** A dropdown menu with 'Honda' selected.
- Model:** A dropdown menu with 'Accord' selected.
- Year:** A dropdown menu with '2020' selected.
- Query Car** button: A blue button with white text.

# Pie Chart: Used vs. New

Another way to help keep track of stock is to know the amount of used vs. new vehicles in the current inventory.

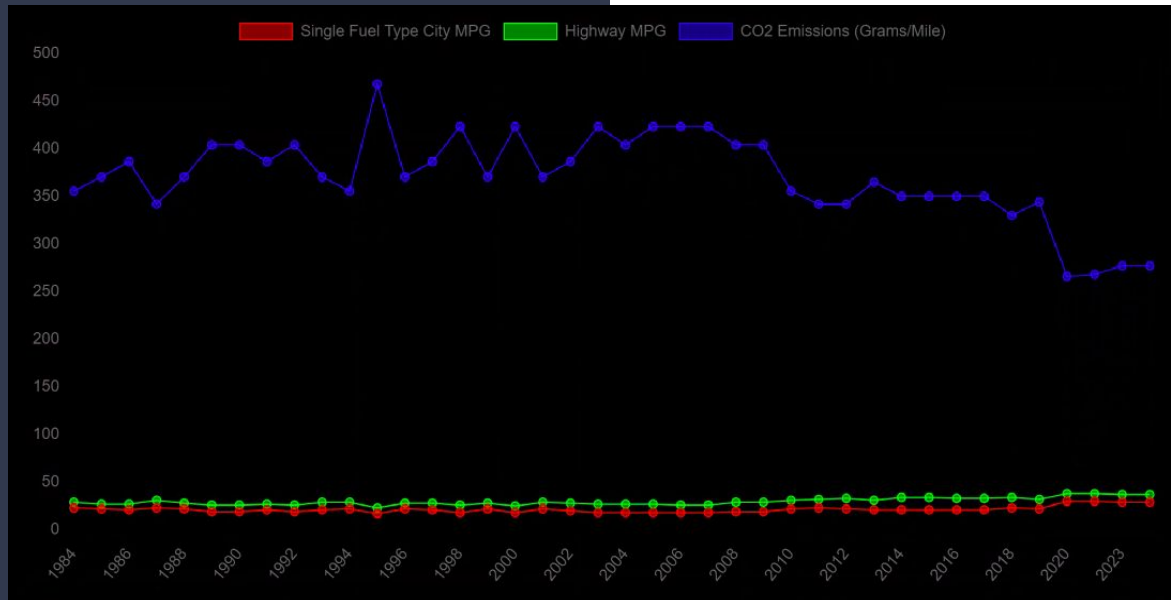
- Blue: used
- Red: new



# Line Chart: MPG VS. Year

This visualization allows the user to grab a quick snapshot of the progression in fuel efficiency over the years.

- Y-Axis: Displays various metrics such as City MPG, Highway MPG, and CO2 Emissions (Grams/Mile)
- X-Axis: Represents the car model years from 1984 to 2024.





# Bar Chart: Total Count of Cars in Stock

- This bar chart shows the total count of cars in stock for each Make/Model and Year combination.
- Allows the users to quickly see the inventory distribution by year for a specific car model.
- This chart helps identify trends in car availability. For example, certain years may have significantly more or fewer cars in stock.



# Information For Each Vehicle

All information about the selected vehicle is displayed, such as the VIN, axel, milage, ect. Allowing for the user to show the buyer the detailed specs.

Vehicle Information	
Attribute	Value
Make	Honda
Model	Accord
Year	2009
VIN	1H1BA76F090000000000
Milage	100
Doors	4
Single Fuel Type (City MPG)	24
Type of Engine	2.0000
Transmission Type	Automatic (variable gear ratios)
Adjusted Speed over the next 5 Years compared to Average Vehicle	1200
Adjusted Fuel over the Single Fuel Type Vehicle	1000
3 Character Manufacturer Code	1H1BA
4 Door 4 Cylinders Vehicle in Class Fuel	17
4 Door Passenger Vehicle in Class Fuel	16
Base Model	Accord
CO2 Emissions from Single Fuel type	206
CO2 Single Fuel type (single Cylinders)	206
Combined MPG for Single Fuel Type	30
Combined MPG for Single Fuel Type Unimpaired	30
Condition	New
Date that Vehicle Record was Created	2010-06-17
Date that Vehicle Record was last Modified	2010-06-24
Drive Fuel Type	Front Wheel Drive
EPH Fuel Score	7
EPH Model Type Index	30
EPH Vehicle Size Class	Large Cars
Engine Displacement in Liters	2.0
Fuel Type Single Fuel (liters/hour/year)	0.0118400000000000
Fuel Type for Single and Dual type Vehicles	Regular
Green House Gas (GHG) Score	7
Highway MPG for Single Fuel Type Vehicle	30
Highway MPG for Single Fuel Type Vehicle Unimpaired	30
If C, then the Vehicle is Turbocharged	0
Number of Engines (Cylinders)	4
Single Fuel Type (City MPG) Unimpaired	24
Unimpaired City MPG for Fuel Type 1	24
Unimpaired Highway MPG for Fuel Type 1	30
Vehicle Condition and Identity during Charge (Dependent Mode)	None
Vehicle Record ID	00000
Vehicle has Short-amp Technology	No

# Dashboard

The image features a solid light beige background. A thin white line starts from the bottom left corner and extends diagonally upwards towards the right, crossing the middle of the frame. The word "Dashboard" is centered in the upper half of the image, rendered in a dark blue, serif typeface.

# Conclusion

With the increase in technology it has become difficult for dealerships to keep up with the upcoming competition. We created this dashboard to streamline the process of exploring vehicle data, allowing users to filter by Make, Model, and Year, and view relevant vehicle information.

Potential future improvements would be:

- Add prices to see the price trends.
- Add an image API to display an image of the car when make, model, and year are selected.

# Sources:

- <https://data.opendatasoft.com/explore/dataset/all-vehicles>
- <https://www.fullpath.com/blog/dealership-inventory-management/>
- <https://wfs360.com/blog/the-top-6-challenges-that-automotive-dealerships-face-today/>
- [https://github.com/AustinL-jpg/Project\\_3](https://github.com/AustinL-jpg/Project_3)