COLLABORATIVE PROJECT WITH INTEL

PROJECT TITLE : COMMON INTEGRATED SERVICES TO COMMON PEOPLE – AI IN TRANSPORTATION

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ABSTRACT: AI – driven Websites and Chatbots has revolutionized the transportation sector, enhancing user experiences and operational efficiencies. These systems provide comprehensive information on car features and models, aiding users in making informed decisions based on their preferences and budget. They efficiently resolve vehicle-related inquiries, including technical issues and maintenance concerns, ensuring effective customer support. In insurance, AI Chabot's recommend suitable companies and policies, reducing fraud risks. They offer real-time updates on traffic and road closures, optimizing travel plans and minimizing disruptions. By issuing proactive safety alerts for accident-prone areas, they help prevent accidents and promote safer driving practices. Additionally, their vehicle tracking capabilities allow users to monitor their vehicle's status and location, enhancing security and providing peace of mind. Overall, AI Chatbots act as comprehensive support systems in transportation, delivering personalized assistance, improving safety measures, and streamlining vehicle management, marking a significant advance towards intelligent and user-centric transportation solutions.

INTRODUCTION

Artificial Intelligence (AI) has fundamentally reshaped the transportation sector, introducing innovative solutions to meet the evolving needs of users and businesses. Among these advancements, AI-driven Chatbot's have emerged as indispensable tools, offering a myriad of benefits and functionalities. From providing detailed information on car features to resolving queries and enhancing safety, these intelligent systems empower users and streamline vehicle management processes. As technology evolves, these Chatbot's play a pivotal role in shaping the future of transportation. The functions that revolve around this Web site/ Chatbot involve:

- Real-Time Updates and Safety

It also provides services like:

- Transportation Services
- Nearest Vehicle Service Centers
- On-Spot Vehicle Service Contacts
- Buy/Sell Vehicles

MOTIVATION

The motivation for studying AI in Transportation is AI systems can predict and respond to hazardous situations more quickly and accurately than human drivers, significantly reducing the risk of accidents. Additionally, AI promises to improve traffic management and reduce congestion through intelligent traffic light control and route optimization, leading to more efficient use of infrastructure and reduced travel times. Moreover, the adoption of AI in transportation can lead to substantial economic benefits by lowering operational costs through predictive maintenance and optimizing fuel consumption.

The Intel Industrial Training initiative Unnati Program helps the students in getting the flavour of Industrial View of the work planning, interaction and guidance of Intel Team and friendly competing with other college students.

DATA SOURCES

Downloaded and analysed the Car dataset from Kaggle and studied on various existing models.

Developed code to take the input as Car model and generates output as all the cars available in that model.

Developed a program to take Selling price range and milage as input and identifies the cars available.

PYTHON LIBRARIES USED IN THE PROGRAMS

Streamlit: The primary library to create the web application interface.

Pandas: For data manipulation and analysis.

NumPy: For numerical operations and handling arrays.

Scikit-learn: For implementing machine learning models.

TensorFlow or PyTorch: For deep learning models.

Matplotlib and Seaborn: For data visualization.

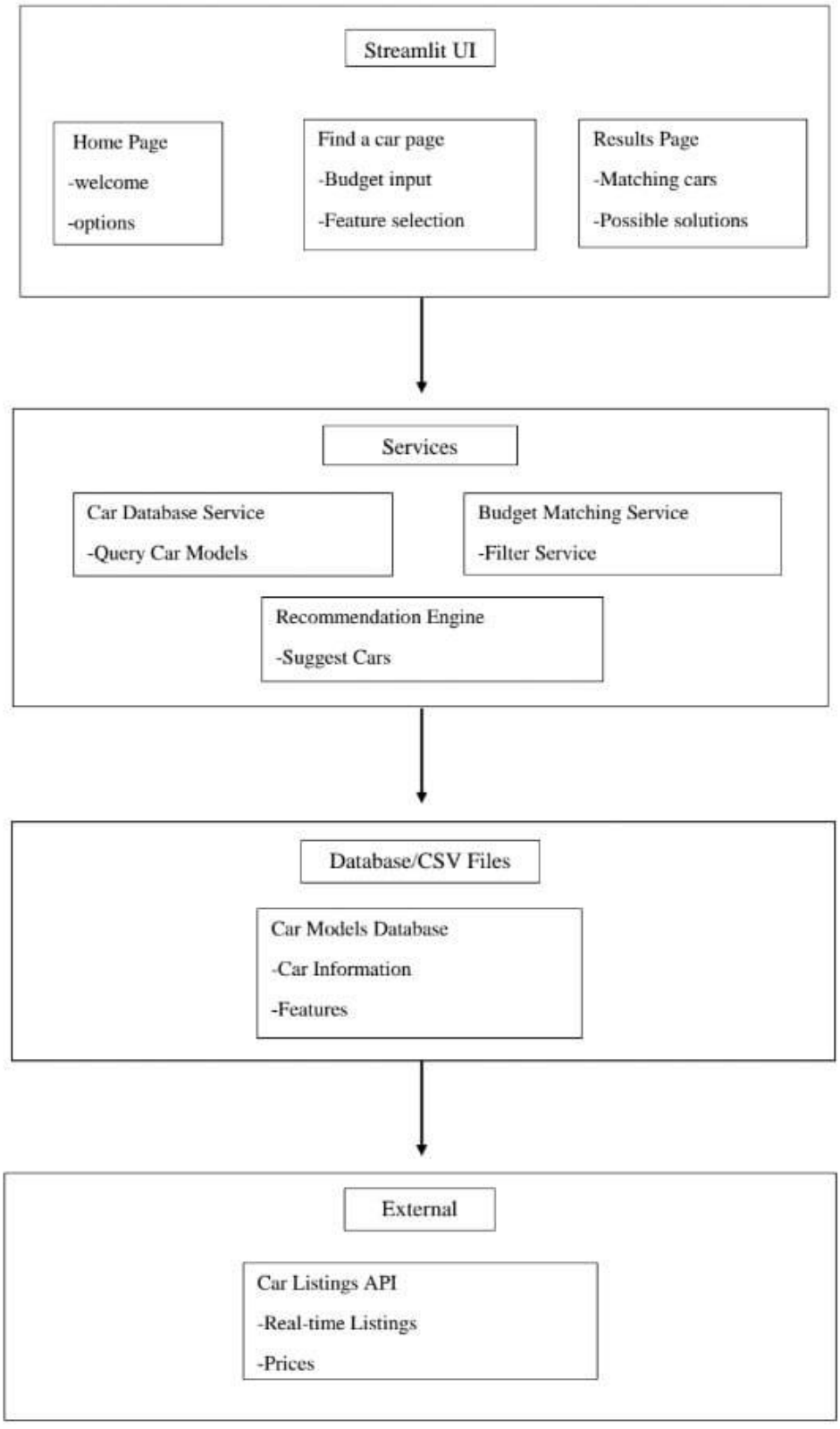
Plotly: For interactive visualizations.

Geopandas: For geographic data processing.

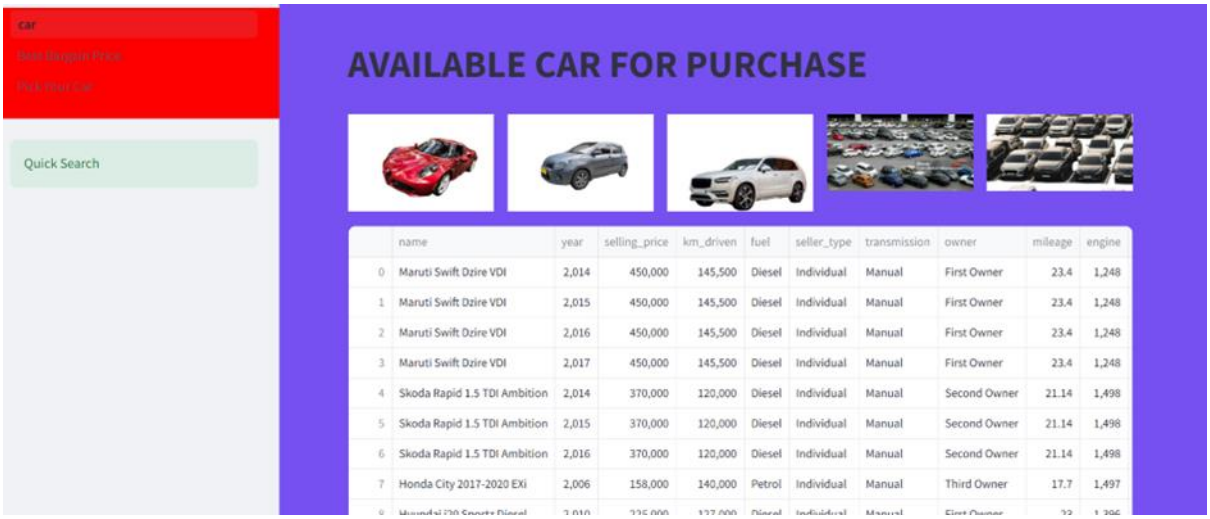
OpenCV: For image processing, especially working with visual data from transportation systems.

Folium: For creating interactive maps.

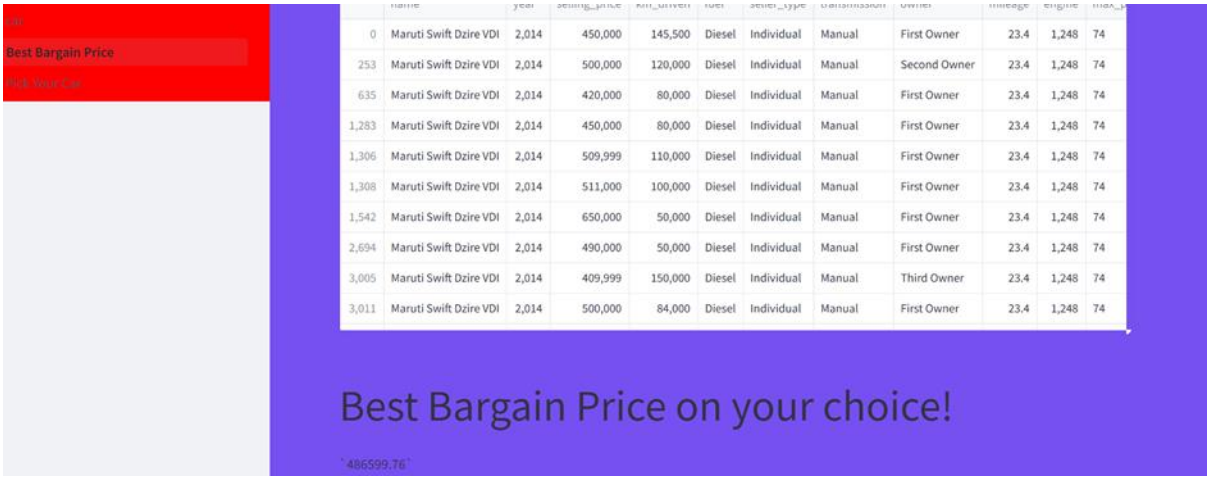
ARCHITECTURE


Streamlit UI
Home Page
-welcome
-options
Find a car page
-Budget input
-Feature selection
Results Page
-Matching cars
-Possible solutions
Services
Car Database Service
-Query Car Models
Budget Matching Service
-Filter Service
Recommendation Engine
-Suggest Cars
Database/CSV Files
Car Models Database
-Car Information
-Features
External
Car Listings API
-Real-time Listings
-Prices

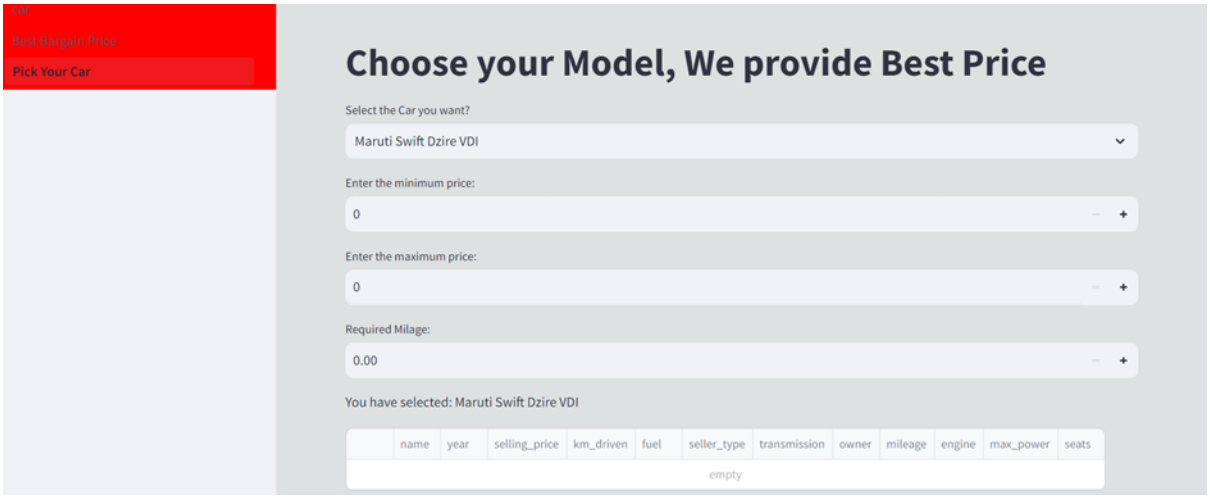
RESULTS



	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine
0	Maruti Swift Dzire VDI	2,014	450,000	145,500	Diesel	Individual	Manual	First Owner	23.4	1,248
1	Maruti Swift Dzire VDI	2,015	450,000	145,500	Diesel	Individual	Manual	First Owner	23.4	1,248
2	Maruti Swift Dzire VDI	2,016	450,000	145,500	Diesel	Individual	Manual	First Owner	23.4	1,248
3	Maruti Swift Dzire VDI	2,017	450,000	145,500	Diesel	Individual	Manual	First Owner	23.4	1,248
4	Skoda Rapid 1.5 TDI Ambition	2,014	370,000	120,000	Diesel	Individual	Manual	Second Owner	21.14	1,498
5	Skoda Rapid 1.5 TDI Ambition	2,015	370,000	120,000	Diesel	Individual	Manual	Second Owner	21.14	1,498
6	Skoda Rapid 1.5 TDI Ambition	2,016	370,000	120,000	Diesel	Individual	Manual	Second Owner	21.14	1,498
7	Honda City 2017-2020 EXi	2,006	158,000	140,000	Petrol	Individual	Manual	Third Owner	17.7	1,497



	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power
0	Maruti Swift Dzire VDI	2,014	450,000	145,500	Diesel	Individual	Manual	First Owner	23.4	1,248	74
253	Maruti Swift Dzire VDI	2,014	500,000	120,000	Diesel	Individual	Manual	Second Owner	23.4	1,248	74
635	Maruti Swift Dzire VDI	2,014	420,000	80,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74
1,283	Maruti Swift Dzire VDI	2,014	450,000	80,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74
1,306	Maruti Swift Dzire VDI	2,014	509,999	110,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74
1,308	Maruti Swift Dzire VDI	2,014	511,000	100,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74
1,542	Maruti Swift Dzire VDI	2,014	650,000	50,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74
2,694	Maruti Swift Dzire VDI	2,014	490,000	50,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74
3,005	Maruti Swift Dzire VDI	2,014	409,999	150,000	Diesel	Individual	Manual	Third Owner	23.4	1,248	74
3,011	Maruti Swift Dzire VDI	2,014	500,000	84,000	Diesel	Individual	Manual	First Owner	23.4	1,248	74



	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power	seats
empty												

CONCLUSION

Developed Web Site to load Used Car information dataset on backend., present the avaible car for purchase to the users, by giving options to select different cars, compare with other Used Car Selling web sites. Using AI based solutions providing features to select better cars, to know the best bargained Price. To compete with emerging technologies, used Streamlit package to develop the entire web-site so that in future it is easy to integrate with additional AI supportive features. These systems offer detailed information about car features and models, assisting users in making informed decisions based on their preferences and budget. They effectively address inquiries related to vehicles, including technical issues and maintenance concerns, ensuring efficient customer support.

FUTURE SCOPE

Integrating Web Site with AI-powered Chabot, so that it gives additional future as one stop web site to access data related to available cars to purchase and knowing the different rules to follow while driving, access to Driving Licence Centers, Tyre Centers, Garage Centers near by location. Using AI Methodology we can predict a Cars bargain price by comparing with hundreds of such cars,

REFERENCES

1. https://ieeexplore.ieee.org/document/10444919
2. https://flatirons.com/blog/ai-in-transportation-industries/
3. https://appinventiv.com/blog/ai-in-transportation/
4. https://syndelltech.com/ai-in-transportation/
5. https://www.scaler.com/topics/artificial-intelligence-tutorial/transportation-ai/
6. https://www.kaggle.com/datasets/sidharth178/car-prices-dataset

SOURCE CODE AND CONFIGURATION FILES

1. Cardata.csv
2. Car.py
3. Best_Bargain_price.py
4. Pick_you_Car.py

Github link : https://github.com/KasojuSpoorthy/Shadowgale_Intel_Unnati2024