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Web Application for E-Vehicle marketplace using Django

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ABSTRACT

The worldwide electric vehicle market size is projected to develop from 4,093 thousand units in 2021 to 34,756 thousand units by 2030, at a CAGR of 26.8%. India has effectively demonstrated its strong fascination to be a significant piece of this car outlook change. Adding to that, India has as of now set forward the craving to turn into the greatest centre point for electric vehicles later. Industry pioneers consider electric vehicles to be a promising choice.

Keywords— Electric Vehicles, Web application, Marketing, SQLite, Django, Python, PyCharm

1. INTRODUCTION

This project also uses all the required aspects of building a potential website for a perfect tech start-up company. The Project also involves the introduction and Overview of the company and enables the developers through a user interface and expressing future innovation concepts through Blog posts and a complete FAQ system which enables the visitors to contact the developers. This Web-application is complete prototype of an E-Marketplace Website for electric vehicles. This application comprises of a login –logout interface for the users whose data will be securely saved in an SQLite Database. Google Map is embedded into the application to navigate to the nearest Electric vehicle dealership. This app accesses the live location of the user and helps him/her finding the nearby Car rental / dealerships. This app consists of unique feature being able to redirect the user to pay for the charging stations using their respective payment gateways.

2. OBJECTIVES

- The Main objective of this project is to successfully develop a Web-Application that can effectively host the same which can run seamlessly on any web platform.
- The application should be able to host Navigation with embedding of Google maps on the website.
- The Application will hold the necessary packages to implement an E-commerce platform in the form of Django administration.
- The Application will be able to do payments using the QR code provided or else Paytm UPI.
- There is a need to get all these applications under the same roof so that the users never have to leave the application. Instead, he can use everything in the same Web-application we are developing.
- A Web-application is being developed which is not only user friendly, but also could be used in a multiple number of platforms with Quality as a main priority

3. IMPLEMENTATION

Since the project is about developing a web application, the user can access the application from any computer browser or a mobile browser. The Application is a perfect E-commerce Platform for Buying, selling and Renting E-Vehicles. The Payments are powered by Paytm package which enables every aspect of payment i.e., UPI, Credit, Debit cards. Users are allowed to use the application after they enter their credentials (E-Mail, phone number and password). These data are stored in a database so that it will be a onetime login process.

The Front-end patchwork is done using HTML, CSS, JavaScript in PyCharm IDE Environment. These methods are used widely in the designing of this project. The use of Django Frameworks made the application easier and safer for use as Django administration ensures the contents of the web cannot be manipulated. The Back-end works are done using Python for the Logic behind the features. SQLite Database is used for the storing of collected data safely. The Application is also embedded with Google Map which can navigate to the nearest EV dealerships.

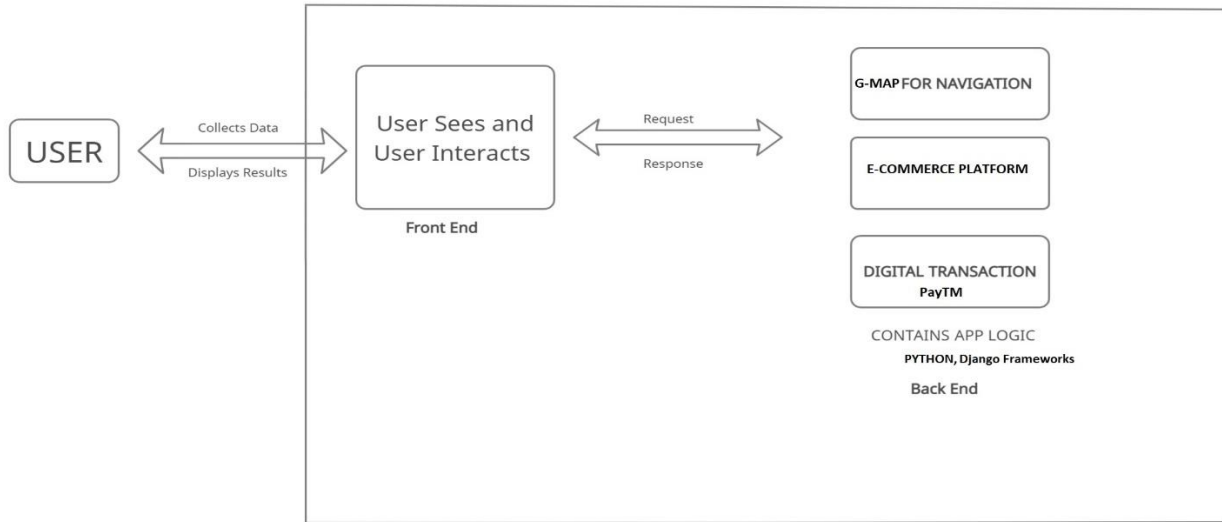


Fig. 1. Overview of Web Application

3.1. Django Framework

We are using Django framework for the administration of the website. Django comes with a built-in admin interface. With Django's admin you can authenticate users, display, and handle forms, and validate input, all automatically. One of the most powerful parts of Django is the automatic admin interface. It reads metadata from your models to provide a quick, model-centric interface where trusted users can manage content on your site. The admin's recommended use is limited to an organization's internal management tool.

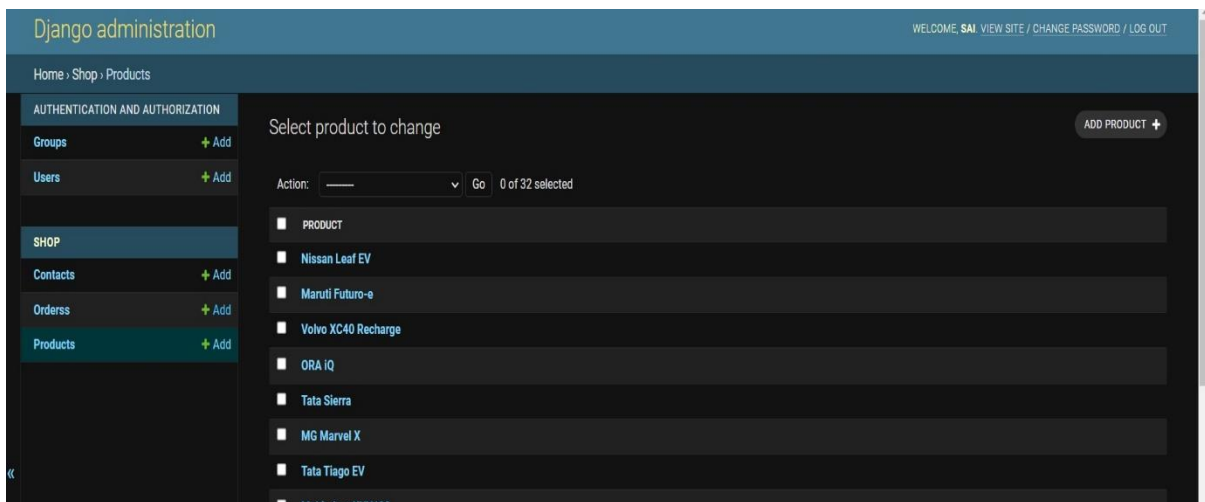


Fig. 2. Layout of Django Administration

3.2. E-commerce platform (Sample Website)

This website can accept orders and in turn act as an E-Commerce Website for Booking E-Vehicles. Online Transaction can be done with using UPI QR Code Provided in the site. Using Django Administration backed with SQLite Database, All the orders are kept track of.

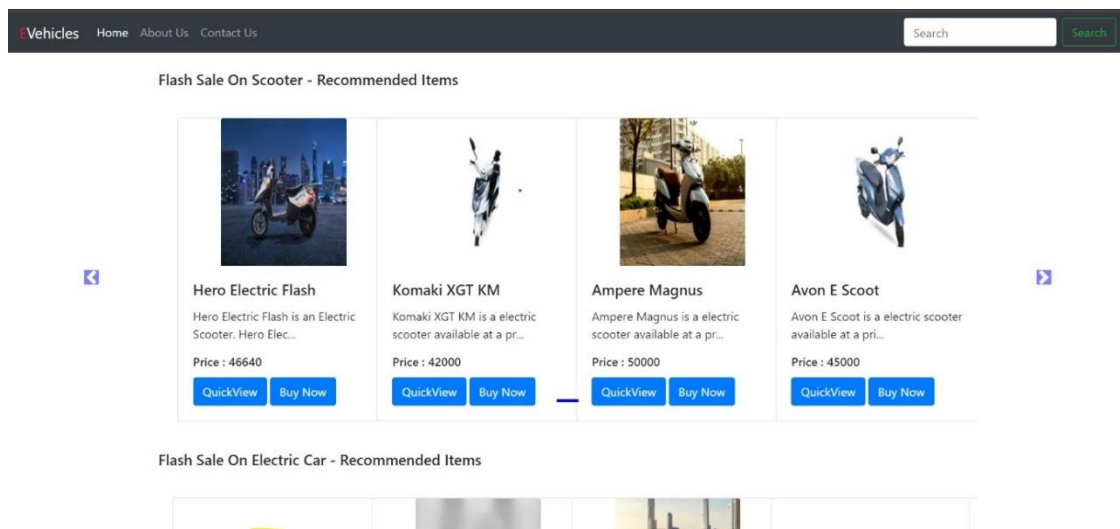


Fig. 4. Sample Layout of the E-Commerce Platform

3.3. Payment gateway using Paytm, or Google Pay API

The Google Pay API is part of Google Play services, so you only need to import the Google Play services library to get everything you need. Or you can choose the APIs you want to compile yourself. To import the entire Google Play services library, we must implement Set Up Google Play services. To enable Google Pay in your app, you need to add the following Google Pay API meta-data element to the <application> element of your project's AndroidManifest.xml file.

Your client taps the Pay button in your web/versatile application. The client is shown a checkout structure where she fills in her instalment subtleties and approves the instalment. After consummation of an exchange, Paytm posts the reaction (achievement or fizzled) on a Call-back URL characterized by you. As a suggested security measure, you approve every exchange reaction by means of a server-to-server (S2S) API call. Exchange revalidation shields from demand/reaction messing with conceivable in-program calls. This S2S call isn't needed for Paytm modules and facilitated online business site combination arrangements.

Considering the reaction got, you show the request status to the client. See a continuous rundown of instalments got and different bits of knowledge in your dashboard. Get instalments gathered from clients in your financial balance on the following workday.

4. CONCLUSION

Overall, this project will be a highly challenging task as the Web-application needs to be highly accurate and to be run on any web platform. In the future, this project even has a scope of being developed as a sole android application which has better efficiency as it runs on an android platform. The project is a user-friendly application which can be versatile enough to run on any platform. This Project has been developed keeping in the mind that in the future, Electric vehicles can be a major share in the modes of transport. This has been the idea behind the project from the beginning. Marketing of such products will really play an important role as a stepping foot towards GREENER ENVIRONMENT. Various companies should take initiatives to promote electric vehicles as a part of their corporate social responsibilities. Finally, the future of the Electric/Hybrid Vehicles is "GREEN".

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