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## Novel Vehicle Renting System Using Full Stack Technology

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**Abstract--** In this modern period, people have to control everything with their mobiles, So our motive behind this research paper is that we will provide such an application to the people by which people can rent a vehicle at any time anywhere. Our proposed web application is not just for renting cars and bikes like OLA and Uber, but with the help of this, you can rent equipment for farming, picnic bus and auto-rickshaw for those who cannot afford to buy auto-rickshaws, can rent rickshaws from a website and earn their earnings. In this, we will give the facility to the owner that he can decide the price of his car on his own. Customers will get a lot of options in it like different price vehicles will be available to them according to their convenience. Our proposed web system is very secure and easy to use. It can be used by a person of any age. The project is proposed to make effective use of computer science skills PHP, MYSQL, HTML, and JavaScript to come up with an interactive, large, and easy to access and use platform for a Novel vehicle renting System Using Full-stack technology.

**Keywords-** *Earn Money; Add to Cart; Vehicle Brands; Farming Services; Price Range Discovery.*

### I. INTRODUCTION

Vehicle rental or vehicle enlist organizations are privately owned businesses that give a brief timeframe of renting vehicles for a predefined time with an expense to their clients. In India, vehicle rental assistance progressively becomes the favoured choice for the vast majority, particularly among understudies in grounds and colleges. This happens because not all understudies can manage to have their vehicle and maybe the college transport administration doesn't consistently help. Moreover, the raising taxi passages, what's more, conflicting transport

appearances in India keep on debilitating individuals from taking up the public vehicle [1]. In this way, vehicle rental administration keeps on filling in India, thus it required an improvement and a great checking framework. The booking, help the executives in knowing rental vehicle stock at a predetermined time and tell the clients about the

accessibility of the vehicle saved, which support the agreeable administration to the client and backing the company's operational measures. Our vehicle renting system is not limited to cars and bikes [2]. We have also added a lot of big options like bus, auto-rickshaw, truck trolley, tractor etc.

As everyone knows after the Coronavirus outbreak, most of the businesses have shifted online which has brought evolution to technology. Keeping all these things in mind, we have tried to create a system that has the least interaction with anyone [3]. One of the special features of our system is that you can also rent farming equipment in it. As everyone knows that a maximum of 60% of people in India is connected to farming in some way or the other. Most of those 60% farmers are those who cannot afford new farming equipment. Farmers who cannot afford farming equipment. They can rent farming equipment by using our system. The interface of our system is so simple and easy to use that any person can use it very comfortably [4]. We have also given the facility of renting the bus in our system, as everyone knows that the trend of going to picnic with family and friends in India is very much. In our system, if a customer wants to rent any car or farming equipment, then there is no need for more documents. All they have to do is upload the information of driving license and Aadhaar card. Many people in our country have more than one vehicle and they are not even using it every day. And many

farmers have farming equipment, but they do not use it every day [5]. Such people can put their car and farming equipment in our system to provide service. By doing this, he can also earn a very good income. Our company will provide them with a GPS that will be installed in their car so that they can track their vehicles at any time. As long as their cars or farm equipment remain in the service of our company, it will be the responsibility of that vehicle renting company.

Our proposed system also gives another very special feature to the owner of the vehicle, which no other company offers. That is, the owner himself will decide how much money he has to rent his car. As everyone knows, many drivers drive auto-rickshaws. But most of them are auto drivers who cannot afford their auto rickshaw [6]. Due to this, they have to drive on auto-rickshaw rents from big brokers, which causes them to lose a lot. Keeping this in mind, we have also given the option of rent an auto-rickshaw in our system, using which auto-rickshaw drivers can rent daily.

Our aim behind making this project is that we would create a web system where people can rent any type of vehicle and farming equipment which is very economical and very simple to use.

## II. BACKGROUND

Rather than sticking to only one type of services offered by the OLA cabs and Zoom cars we need to get more advanced and developing the more large and interactive platform which would offer a wide range of services in different sectors, the platform that would be entirely scalable so that with the advancement in the technological innovations we can add more services, tools efficiently with the changing, growing and on-demand needs of the customers [7]. The Novel vehicle renting system using full-stack technology will be arising as an efficient platform to meet the increasing needs of the customers from different sectors, fields like students will be using tow wheeler motor bicycle for schools and colleges so that they can reach on time and accordingly the low price of rent will be charged for them. Couples or family members can also book cars to drive every corner of the city. Farmers can book the different farming practising tools like tractors with different brands can be taken on rent and similarly, auto-rickshaws can be booked for small distances and the services will be provided ubiquitously 24 hours. In addition to the very important feature of the proposed work is that it will be allowing and offering the other people who do not want to put their vehicles idle in the garage and want to put them on lease and in this way it will be helping them to earn money out of their vehicles too and hence would benefit them economically and accordingly to the economic strength of the nation [8]. Also, a person taking vehicles on rent will be allowed to drive himself or herself so that he can feel comfortable throughout the journey and the fare will be charged only hour wise or day wise not kilometer wise.

## III. ARCHITECTURE

When any user opens our web application, he will first see the homepage. Every service that is provided by the company will be visible on the home page. Along with this, he will get information about the price of every vehicle and farming equipment at the same place. To use our application, the user has to log in first. If he is not already registered, then he will need to register first and after that,

he will be logged on the website. After login, the user can use any of our services.

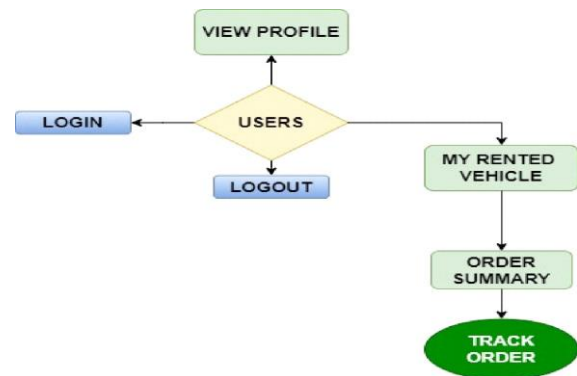


Fig.1 Login Page Architecture

After successful login, user can select any option of their choice according to their convenience and add to cart.

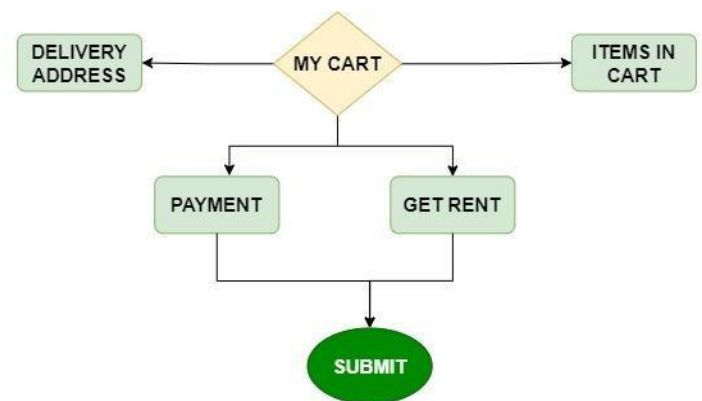


Fig.2 Architecture of cart

After selecting the vehicle of his choice, the user can put it in the cart. After putting the vehicle of your choice in the cart, the user can go towards the payment option. If there is any kind of doubt in the user's mind before making a payment, then he can also talk to the owner of the car over the phone. We also provide this facility to him. After the user makes the payment, the notification of the payment will go to the admin. Then the administrator will send the notification to the owner of the vehicle that the user has booked for himself. When the notification goes to the owner of the vehicle, he will have 1 hour to accept the order. After the order is accepted by the owner of the vehicle, a notification will be sent to the user that his vehicle has been booked. If for some reason the owner of the vehicle did not accept the order, then we will give the user a similar option. If the user wants, he can book that other similar vehicle and if he does not like that other option then the user can cancel his order. All his money is refunded. Even after the order is successfully accepted, if the user feels that he does not want to rent this vehicle, then the user has the option that he can cancel the order. If the user cancels the order before 24 hours, then all his money will be refunded.

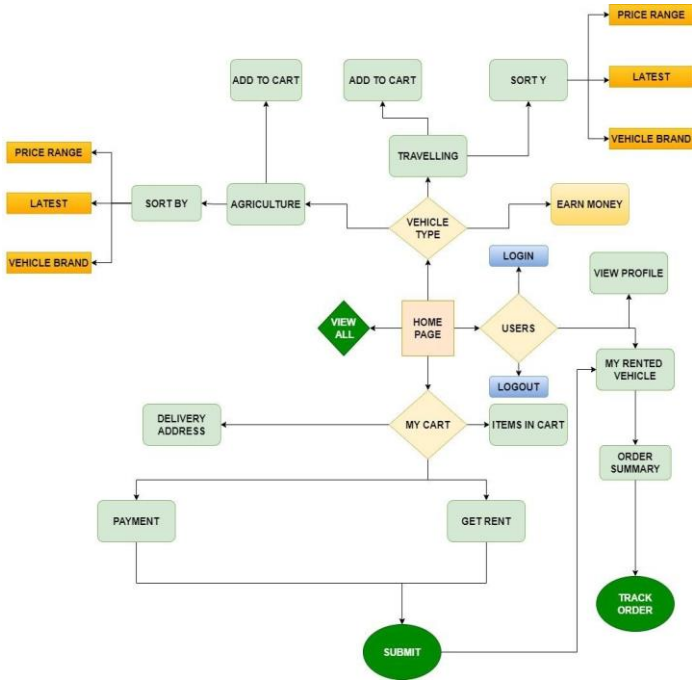


Fig.3 Architecture of Vehicle Renting System

IV. ENTITY DESCRIPTION

**People-** The folk's table stores data concerning all person related to the travels system which incorporates employees, agents, and customers. During this entity, people id is that the primary key. The opposite attributes are initial name, last name, street address, state, zip code, home, cell, and email.

Attributes:

- People\_id (primary key, Not NULL)
- First\_name
- Last\_name
- Street\_address
- State
- Zipcode
- Phone\_home
- Phone\_cell
- Email

**Customers-** The client's desk includes all of the statistics of tourists the usage of Rental Service. The patron identity identification (CID) is a number one key. Humans ID is reference key right here which references to human's desk. The different attributes of this entity are identity kind and itinerary identity identification that is overseas key references to Itineraries desk. The patron's driving force license variety may also be stored.

Attributes:

- customer\_id (PK/FK, not NULL)
- People\_id (FK)
- itinerary\_id (FK)
- identification\_type
- extra\_driver
- driving\_license\_no

**Agents-** the Agent's desk shops all of the records approximately the sellers who set up motors for the renters

and their fee percent in USD. Also notes the place wherein they work as a foreign key.

Attributes:

- agent\_id (PK/FK, not null)
- People\_id (FK)
- commission\_pct
- location\_ID (FK)

**Car details-** This entity keeps the records for all of the offered automobiles. It's car id as a primary key. This entity additionally includes car name, Vin, the spaciousness of the car, production year. It also stores the value to rent the car.

Attributes:

- car\_make
- car\_name
- make\_year
- car\_color
- car\_seat\_capacity
- car\_plate\_no
- VIN
- Rental\_price

**Car bookings-** This desk continues the information of

The vehicles booked via way of means of the vacationers on the unique locations. The booked automobile is Brought to this desk with its automobile identity Verification and itinerary identity identification of the Person that booked the automobile.

Attributes:

- car\_id (FK)
- itenary\_id(FK)
- location\_id(FK)

**Location-** Locations are both a vehicle apartment distribution middle which holds apartment vehicle ready to be rented and a workplace in which sellers work. This is prominent viaway of means of characteristic type.

Attributes:

- Location\_ID (PK, not NULL)
- Street\_address
- State
- Zipcode
- Phone

**Bill-** Bill desk holds the invoice for the customers. This desk has invoice quantity as the number one key. Rent according to day and rented days are attributes for counting invoice quantity which suggests the quantity purchaser wishes to pay.

Attributes:

- bill\_no(PK, not NULL)
- insurance\_type(FK)
- rental\_price(FK)
- rented\_days(FK)
- bill\_amount
- billing\_street\_address
- billing\_state
- billing\_zipcode
- tax



**Payment-** Payment entity has fee identity identification as number one key and invoice variety is overseas key to get invoice info from invoice generate. And a few different attributes like card variety, expiry date, CVV, are for the consumer who desires to pay via way of means debit/credit scorecard. There is different characteristic pay via way of means of coins that is for the consumer who desires to pay via way of means of coins now no longer via way of means of different means.

Attributes:

- payment\_id(PK)
- bill\_no(FK)
- card\_num
- expiry\_date
- cvv
- paid\_by\_cash

## V. SOFTWARE DEVELOPMENT TOOLS

The programming language and tools used to create this project are as follows-

The recommended programming language to use will be PHP, HTML, CSS and JavaScript. A computer, Smartphone or laptop an equipment necessity. For project documentation, Microsoft 2003/2007 will be utilized. For the development of the database, MySQL and wamp server will be used. For Frontend, we use HTML, CSS, JavaScript and Bootstrap. For Backend, we use php [9].

To build this software system, we first need a computer or a smartphone. After this, we will start the process of creating our web page. To create any fully functional website, we have to first take the domain name and web hosting account. When we have our domain name and hosting, after that we will need to create our World Press website. World Press is the most used website building platform on the Internet. Now in the next step, we will customize our web system and design our website and give a structure. After that we will make the pages of our website because the most important thing in any website is pages, without pages we cannot imagine any website. We can use different types of languages to create web pages. But the most preferred language is HTML, CSS and Javascript. First of all, we will create web pages using the skills of HTML.

Our important web pages are the homepage, registration page, login page, etc. After this, we will use CSS to make our web pages more attractive because if a website is attractive then people will automatically get drawn towards it. To make the website more beautiful and to have more visual effects in the website, we are also using JavaScript. For the backend, we will use PHP in our web system. PHP is a server-side scripting language [10]. PHP will offer us the option to run the webserver. With the help of PHP, we will be able to interact with many different types of database like MySQL [11]. We need a database to store a lot of data. We will use the MySQL database to store our data. MySQL is a freely available and open-source relational database management system. In the next step, we will connect PHP to the MySQL database through the backend.

## VI. PROBLEM STATEMENT

Like in OLA and Uber cars although these provide us with the easy functionality platform at the same time several

shortcomings are reported like OLA cabs are reported with the payment issues and in Uber car drivers training need much more improvement. OLA cabs are less technologically advanced and Uber cars are still not working in many Indian cities.

**Earn Money:** Neither of them allows the other people who have their vehicles sitting idle in the garage and want to make them available on lease so that they can earn money out of their idle vehicles also.

**Vehicle Brands:** No vehicle brands are available in any of the two because some luxury people want to be more comfortable by choosing the high brand cars so this may dissatisfy them with the services provided.

**Farming Services:** Both OLA and Uber stick to only one type of service offering and have not grown up enough to let the other tools for farming practices like tractors and other necessary equipment to rent on lease is almost 80% of the population of our country depends on agriculture and industrially advanced farming practising tools and equipment needs to be much more Ubiquitous to the farmers and accordingly will affect the economic growth of the country.

**Price Range Discovery:** Both OLA cabs and Zoom cars charge according to the kilometre wise and it makes a wrong impression on the customer's mind who want to drive a few kilometres more so that they may not miss an important destination while on the trip.

## VII. PROBLEM SOLUTION

On our proposed web application we are having a definite payment interface that removes the issue of fair prices with the driver as the incidents reported in the case of OLA cabs and the rent is paid in advance before renting any vehicle. Also, the incidents of Eve teasing are reported by OLA cab drivers but in our case, we are providing self-drive services. The proposed research work Novel vehicle renting system using full-stack technology demands only good speed internet connection with no need of any heavy infrastructure so that on even fingertips within minutes customers can book any vehicle from any corners of the country. Also, sometimes like in the ongoing Covid-19 pandemic situations many of the vehicles are sitting idle in the garage, we can make it an effective tool to allow other people to rent their cars on lease on our web portal so that they can make money out of sitting idle vehicle, it will benefit them economically and this becomes the possibility that our Novel Vehicle Renting System will arise without any competition [15].

Now comes the most important part of our research work that we are also making industrially advanced farming tools and equipment available on our web application e.g, tractors used for sloughing agricultural fields and many other purposes. Industrially advanced and up to date tools and equipment's on rent on our web portal will boost the farming sector in many ways and will be a cheap means to have more productivity and consequently will boost the financial strength of farmers and the economic condition of our country. It creates the high chances that our project will be growing in more demand in near future. The last thing about the price range discovery is that the customers will be provided with the vehicles of different brands in defined price range from high price range to low price range and vice versa so that everyone will be satisfied with the comfort they want by our services [16]. Customers are not charged kilometre wise but for the total number of hours or day-wise, they will be charged to remove the driving extra kilometre burden in the customer's mind as he has to make advance payment for the number of hours he has taken the vehicle

on rent, indirectly it will help in the long term development, demand and reputation of the services provided by the Novel Vehicle renting System [17].

## VIII. CONCLUSION

Novel vehicle Renting System is a very modern and innovative vehicle renting web application that is user friendly.

In this research paper, we have presented that a person of any age can rent any vehicle and farm equipment's very comfortably with the help of his mobile or computer at any time and in any unknown city. Looking at the present-day circumstances, we have designed an application in which most of the process is online to rent a vehicle and humans have very little physical interaction with other humans. Many applications in the market provide this service, but there are many flaws in it. We have overcome all those gaps and created a perfect new system. Earlier people had to use different applications to rent a car and to rent a bike. But we made this a system in which they would get different types of vehicles in one place. Even Farming equipment will be available to them. To rent any type of vehicle, the customer will only need an Aadhaar card and driving license. If any customer rent a vehicle through our application, then the condition of the vehicle and all the information of the vehicle along with the address and phone number of the owner of the vehicle will be available online in advance so that the customer can verify all the information regarding the vehicle. We have also given the facility to the owners of the vehicle that they can track their vehicle with the help of GPS. In our proposal system, the option to take on Bus and Auto Rickshaw for Rent has also been given.

In conclusion, we have tried to make such a system using all modern technology in which the customer can get every type of vehicle renting services.

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