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SAWARI: The Bikers Portal

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Abstract: Nowadays, people have less time and more work to do which forces them to travel to different places for work, meetings, and tourism. If people don't have a private vehicle, they use public transports which is crowded and generally not running on time. Bikers Portal gives the solution to such problems. Bikers Portal can also be used as a complementary mode to other public transit such as buses, local trains. This will be a web application which will provide bike rental service. It will also provide a single platform for rental companies and users effectively and efficiently. This application is a combination of both sales and inventory management of the bike. From an individual's point of view, bike-renting systems eliminate the inconvenience of bike ownership, the need to find parking places, and the fear of theft. It helps in reducing traffic congestion as the number of vehicles on the road can be reduced significantly. Using this portal, users can rent a bike for tours, trips, and other such events that needs traveling with comfort and personal space. Also, the people who have private vehicles but they don't use it because of any reason, they can take advantage of this portal. For users, saving time will be another important benefit of this system.

Keywords: Bike Rental, Web Application, Transport

I. INTRODUCTION

In cities or tourist spots that support citizen activities and city tourism, there is a need for a bike rental system that is managed systematically. The popularity of bikes will never get old. With the advancement in technology new and new features and architecture get introduced, making this field more attractive and convenient. Most people prefer bikes as they are fuel-efficient, the best partner during traffic jams and fast as compared to average vehicles. People are ready to adopt an efficient lifestyle if it means they aren't giving up anything like precious time or peace of mind or money. The bike rental function itself can encourage residents to actively exercise or just go around using a bike without having to bother carrying a bike from home, and not every citizen also has a bike at home that supports mobility because the prices are not cheap. Using this portal, users can also make use of their bike which is not in use by selling or renting it to the company. Also, the portal will offer various types of deals and packages for tourism. It will also have a section named 'News Letter' wherein all the latest news regarding bikes, offers, etc. will be available. There are many bike rental portals online, but many of them restricted to only one city. Getting a rental bike helps people get around despite the fact they do not have access to their own personal vehicle or don't own a vehicle at all. Over time, it became clear that the users don't want a bloated application that lets you rent bikes. They just want a system to rent a bike, as simple as possible. That's one of the factors we took into consideration and developed this application.

II. MOTIVATION

The motivation behind this work is the growing popularity of web-based systems. As the number of smartphones and tablets is increasing hour by hour and not day by day, the businesses need to have a website. The main purpose of developing a bike rental system is to reduce the cost and time consumed, which is beneficial to the bike rental agencies and customers. In a country like India where most of the population belongs to the middle-class family, most of them can't even afford a bike, this portal will allow them to taste various bikes at affordable pricing. Since bikes are going to be circulated among the city, the user can use one, return it and forget about it. Comparing this with the struggles of owning a bike, obviously renting bike scores a point. The scope of this portal is creating a user-friendly web-based system for customers. The web-based system that must be secure and easy to manage by the administrator.

III. LITERATURE SURVEY

A literature survey is a form of an essential part of the development process and constitutes a project in itself. In the context of a research paper and thesis, the literature review is a critical synthesis of previous research. It deals with the discussion of all theoretical and practical views of online and offline bike renting system. It also includes the attractive price, time saving etc. There are many online bike renting systems that are already present but each system has some drawbacks. In Bikers portal we are trying to overcome those drawbacks for convenient use and easily accessible system for users. Below are some existing systems and their drawbacks, that we found during literature research.

- 1) *Rebel Rides*: This system has only 15 bikes for renting and does not have quick responses for the renting request. It has only expensive and heavy bikes available, that too at a high price. So, these bikes are not affordable for middle-class people to rent. [1]
- 2) *Wheel Street*: In this system, the rent is available on per day basis only, and no other options are provided. So, because of the per day rent, it is not convenient for the user who wants the bike for some hours. As per the reviews of this system, the number of bikes is 10 only and the bikes are not well maintained. Also, the availability of bikes is not updated on the system. [2]
- 3) *Rent Trip*: In this system, the user has to directly contact with the dealer. It has a limitation on the distance to be covered using the rented bike. And because of direct contact between the dealer and user, there might be people who would face issues in this process, they may get into some kind of trouble. [3]
- 4) *Ziphop*: The availability of bikes on rent is only on a per-day basis. This system is available in only three cities in India. It has a limited number of bikes to choose from. Also, it has very bad reviews of their service. The User Interface of their Website is quite confusing. [4]
- 5) *Onn Bikes*: This system is not available in every city except 4 cities. As per reviews from customers of this site, bikes are not well maintained when they receive the bikes. Lots of users complain about the poor service of the system. This system responds late, it appears to be lagging while processing. [5]
- 6) *Zoprent*: The availability of this system is only in Bangalore. Here also, the problems are the same as that of the above-described systems such as only per-day based availability of bikes, the limited option of bikes. When we tried to book a bike from this system, they asked to select a city first and then the further process will take place. On selecting a city, they showed that there are no pick up locations in that city. So, we tried all the cities listed there and the same results each time. The systems should not give such User Experience and issues. [6]
- 7) *StoneHeadBikes*: This system is only available in Delhi. It offers bikes on rent for per day system and some limited kilometers. The User Experience of this system is not so good. Also, the amount of rent is quite high. [7]
- 8) *On-track*: This system is only available in Bangalore. In this system, the bikes are available only on a monthly-renting basis. Only 12 to 14 bikes are available for rental purposes. They have not provided all the details and information that the user needs to know. [8]
- 9) *Self Ride*: As per customer reviews, this company is divided into two units, one that works online and the other that works on the ground. The problem is the huge gap in communication between these two units. Also, it is not available in all cities in India and it has poor customer service. [9]
- 10) *Royal Brothers*: In this system, the renting is available on per day basis only. As there are limited bikes to choose from, it is not feasible for the users who want another bike than the bikes present in the system. The User Interface of their application is not proper and confusing. [10]
- 11) *Bounce Share*: This system is not available in all cities. Thus, if the user goes to another city, they cannot use the system. As per customer reviews, the service they provide is not organized. [11]

All these systems are already available for bike renting but some of them are only available in particular cities. There are some systems who have rents only on the per-day based system, not the week or hour-based system. If the customer wants to rent a bike for the two or three days, then some systems from the above list are not eligible to give them such facilities. Some customers need the vehicle for a particular kilometer but for more hours. So, they are not satisfied with the rental on hour-based system. Also, none of the above system has the option for the user to rent their own bike to the system and also the option to sell their bike using the application.

Therefore, our system is trying to fulfil all the demands of the customers by providing the features that are not available in the above listed systems. For example, making this system available in all the possible cities across India, providing the feature to sell and give it on rent to the system, we make available all the important details and information in the portal itself, also for customer's attraction, our portal provides various deals for tourism on reasonable rates. We are focusing more on the User Interface and User Experience of this system.

IV.METHODOLOGY

A methodology is part of an important technique used in managing and controlling for research in a project to achieve the specified objectives within a given time. The waterfall model is used to become well planned about the project and develop the idea for the project. It is the traditional approach to web development and was derived from defence and aerospace project lifecycles.

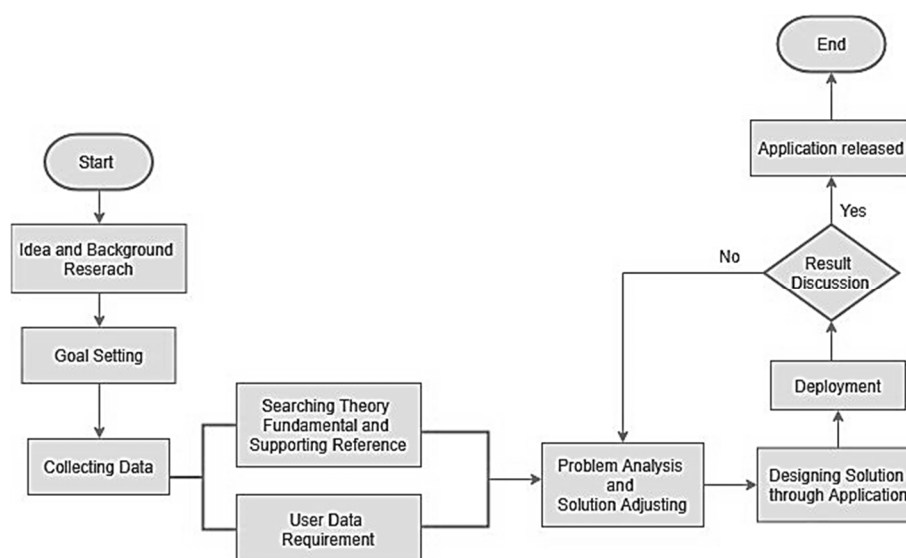


Figure 1: Methodology

Figure 1 Shows the research begins with researching idea and background then followed by determining the goal setting and continued with collecting data as a source of supporting data. Further data collection starts from source search by searching and surfing through internet. After that perform the problem analysis process in accordance with supporting facts and find suitable solutions. Then made an application design and designed according to a predetermined solution. The next stage is the process of development, deployment, and testing. The Final Stages make a result discussion with potential users.

V. PROPOSED SYSTEM

A bike rental system is to rent out the bikes in all the possible locations. This system will allow customers to rent, buy, and sell a bike after registering themselves with the system. In the registration function, it enables customers to create user details and information by filling up the registration form with all the required details and documents. After registration user can log in to the system with his username and password in order to access the system. Users can check various bike listing and can view each bike's features. Users can select the bike and add the bike to the shopping cart. Users can make payment through credit cards, debit cards, net-banking by clicking on the payment option. While booking, users are able to see the booking date when customer can book. Users must register themselves for posting an article. Bike's usage will be counted in hours, days, and weeks depending on what options users choose.

Last, feedback-form enables customers to send admin the suggestions. As data is maintained electronically, it is easy for a user to update their details, which has overcome the tedious updations in the previous system. Using this portal, users can also make use of their bike which is not in use by selling or renting it to the company. If someone wants to sell their bike, they simply need to register on the site by providing personal information and product description. This web application provides some additional features for sellers to edit or delete their products if uploaded for selling purposes. The portal is also acting as an interface between the sellers and buyers.

The main objective of this system is to provide convenience to the management team by developing a computerized system to make processes regarding bike rental easier. To provide direct access to the renting process to clients through a web application system. This application is a combination of both sales and inventory management of the bike. Users can easily rent a bike by using this system, the user does not have to come manually to the shop to buy or rent a bike. Users can view the bike and bike parts in effective Graphical User Interface. Users can view the features of each bike and can compare the bikes to choose a better product. The website will focus on the user's experience while using the service. It will try to overcome the drawbacks of the existing system to make it feasible and more convenient to use. This system is not restricted to a particular location or city. It has the proper descriptions of products, secured online payment. It has the ability to handle a huge amount of data than other systems. Also, it has the security for the personal information of user's data that is centralized, which has overcome the data integrity problems in the previous system.

A. Use Case Diagram

The Use-cases of the system is as shown below. Figure 2 describes as:

- 1) Admin manage bicycles data by add, delete or update availability type of bike that can be rented.
- 2) Admin manage user's data such as add, deleting or updating user profile.
- 3) User can search, rent bike and create ad to give user's bike on rent from main page.
- 4) User will be paying bill of the bike they rented.

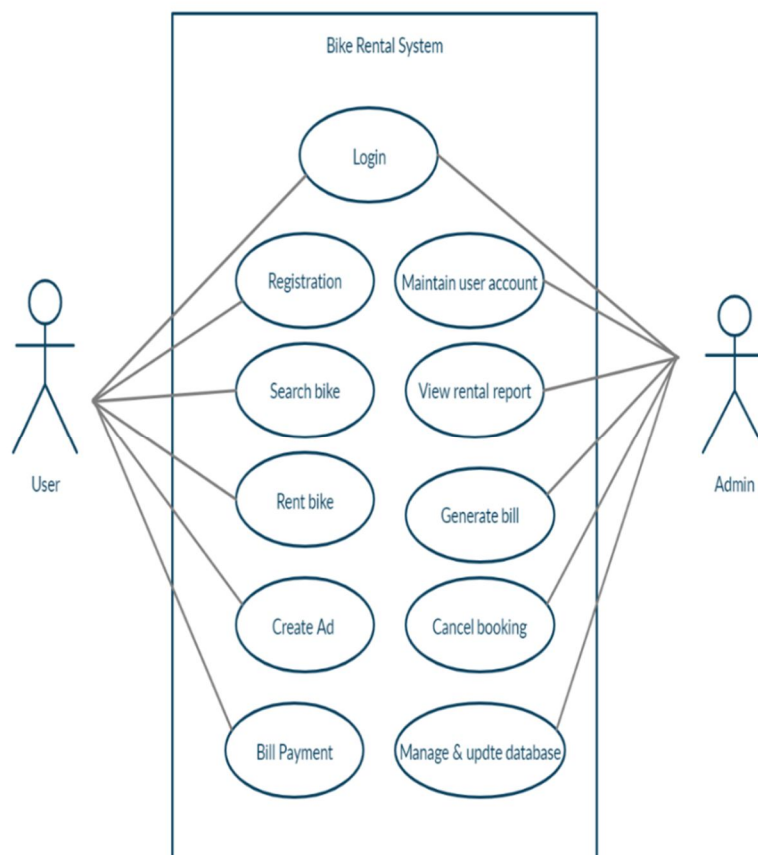


Figure 2: Use Case Diagram

B. System Implementation:

Developed a website that allows users to login and reserve the bike, and if the user is not registered, the option to sign-up is given to the user. Also, the user can use the 'login with Google' and 'login with Facebook' option. Then all the information about the user will be fetched from their respective accounts. In case if the user forgets the login, an option is given to the user to reset the credentials using the link given under the forget password page. Also, a separate login for admin is given, where admin will be directed to the admin panel. User can also take the advantage of Tourism Deals that are being offered on the home page. User can be benefited by reading or acknowledging the news form 'News Letter' tab or various blogs related to the bikes under the 'Blog' tab. After a successful login, the user will be able to view the bikes and short descriptions of the same on the dashboard. Users have the option to add a particular bike to Wishlist and also directly to the cart. After adding the bike to the cart, there is a button named 'checkout' which will direct the user to the payment process when clicked on. As we have built a recommendation system so if the user clicks on a bike, the user will be able to view the similar/recommended bikes according to the bike which is being viewed. Also, the search option is available for the users to search for their favourite or a particular bike they are looking for. Using this portal users can give their bike on rent to the company by creating ad in the portal. Also, users will be able to sell their bike to the company, they just have to fill the form that is given on the dashboard. All the required details need to be filled by the user. Also, to track the bikes a GPS chip will be inserted in the bike.

We used JavaScript, HTML5, CSS, Bootstrap, Ajax, etc. to build the front-end of the portal. Apache Server, PHP while developing the portal. Apache server's PhpMyAdmin, MySQL to maintain and store the Database. And also, some other languages and tools to build some modules of the website. These are the technologies we used while developing this portal. Below are some of the screenshots of our portal.

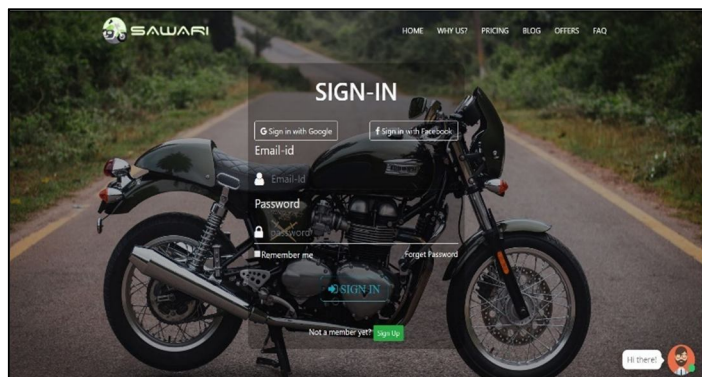


Figure 3: Home page

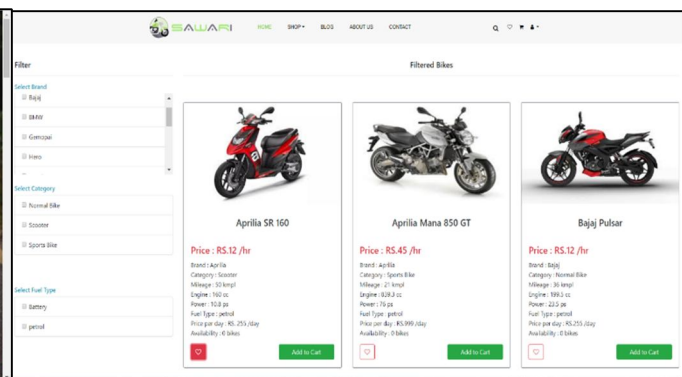


Figure 3: Bike listing

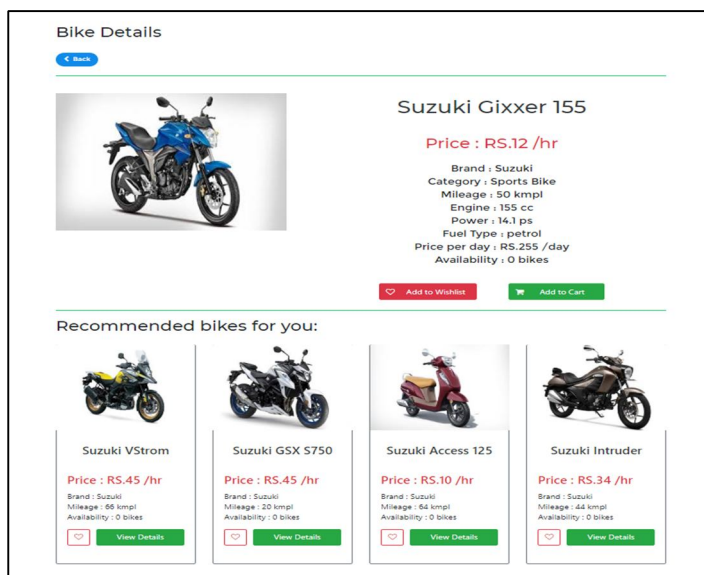


Figure 5: Recommendation

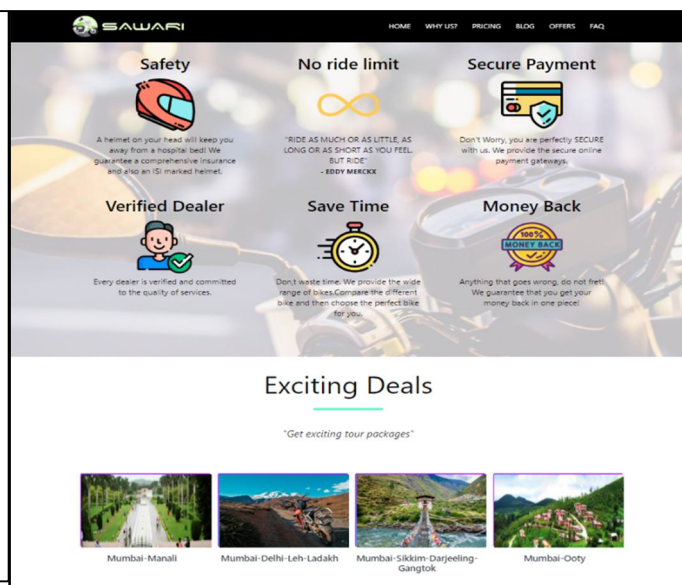


Figure 6: Services

VI. CONCLUSION AND FUTURE SCOPE

In this paper, we have represented detailed design, implementation plan and evaluation of this Bikers Portal. Bike rental portal concept promotes social and friendly network among users. Our bike rental system allows the users to easily book a bike using the website at any time without human intervention. There is no need of a human for operating this smart bike rental system. According to the socio-economic categories of surveyed people, artisans, unemployed, students and executives are the most favourable for bike rental. At the level bike rent system implementation, the rent for short duration is more requested than the long-term rental. The implementation of the Bikers portal application can be concluded as:

- A. This portal is useful for visitors to tourist places to rent bikes quickly and comfortably by utilizing web-based technology.
- B. This portal can accommodate rental payment transactions made easily, quickly and safely without using cash.

It acts as an agent for bike owners to rent out their bike and the company can also earn profit from each of the transaction. The process of renting the bikes and making use of own bikes which are not in use, has become easy and convenient. It also benefits in very less paper work, as it is online web-based system. It will be better to place bike sharing stations where their visibility is maximized.

In future, this web-based system can be converted into the mobile application system. Bike selling to the user can be added to this system. Also, bicycles and car rental systems can be included in this system in the future. To maximize the use of bike rental system, the lead agency needs to have the support of stakeholders and partners. These stakeholders may include: Local municipality by the means of funding and space, Public transit operators, User association, and other responsible groups.

VII. ACKNOWLEDGMENT

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