Bicycle Locking: Web based Mobile App

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Abstract- Nowadays parking system for bicycle has been a new train with the organization so that the staff of the organisation can effectively use the bicycle. People love to use bicycle because people are concern about their health at the same time risk are there for losing the cycle as it can be easily taken by theft. Security measures becomes one of the major concerns about the parking of bicycle. Bicycle locking system will ensure the security. It is a web based and mobile application app developed using ionic3. This system can easily track the bicycle, provide transaction record, booking and locking of it and many more. Secure login with OTP also made available and vendor can get all the result analysis from the system in order to improve or to put more service in some specific area.

Keywords- transactions, slot, vendor, payment, location, Bluetooth, security.

I. INTRODUCTION

This system “Bicycle Locking” is mobile and web based applications that has been developed using PHP, MYSQL and IONIC 3. Main purpose of the system is to secure the bicycle at the same time inventory management and all types of transaction will become easy on one click of button in this system. This system plays as an interface between the user and bicycle locking.

Our applications consist of three modules namely for user module, vender module and administrator module. End user has the capacity for reserving the cycle or on the spot but here the availability plays important role so getting the bicycle so many prefer to book in advance and user need not to worry about the theft of the bicycle as it is secure through locking and unlocking facilities. Administrator module the system and workflow of the system whenever any changes required in system and from this module all the functionality of the system can be monitored and do analysis. Our system support multiple language functionality so that it can be deployed around the globe. The foremost goal of the application is to provide an excellent security measure for the organisation to rely on and every customer need not worry at all anymore as it is secure.

II. LITERATURE SURVEY

Bicycle parking system is a new idea but many organisation have been working on this idea to get the maximum benefit by providing the most affordable transport service. Initially the issue was about the security measures of the bicycle. We have done thorough investigation and literature survey but could not get the exact replica of the system but many applications we came across where they provide provision only for the parking slot of the vehicle. One such application we came across is ParkZebra.

A. ParkZebra

ParkZebra application allows the user for booking a parking lot in the specific parking area designation by the system and they can do booking for two and four wheeler based on the slot available in the system and preference of the end user.

III. PROPOSED SYSTEM

Here we proposed a system in which end user directly can interacts with the system itself provided they have an account that to through with secure logging using OTP technologies. If new user they need to registered into the system and should be a member of the system. End user can do booking of the slot by choosing from the available slot from the parking place. Pricing of the system is dynamic based on the uses time and distance of travel. Here administrator play an important role in adding deleting of the service etc., generating reports and many more.

A. Product Perspective

Bicycle locking is an application which is developed using ionic3 and PHP and all the data will be store in the data store using MYSQL at the server. This applications allow user for booking bicycle as well the parking slot with their preference of time place etc. Sub admin manages end user and super admin manages sub admin in the system.
1) **System Features:** The main features include the following:

- OTP verification based login.
- Nearest available slot.
- Bill generation.
- APK generation.
- Google map API used user interface.
- Locking and unlocking through Bluetooth.
- Payment gateway.

2) **Assumptions and Dependencies:** In regard to this project we assume that the user need to have the following:

- Fair knowledge of computer.
- Internet connection is must.
- Database access by admin only.

**IV. EXPERIMENTAL RESULTS**

Our experimental result is performed in real time. We do registered into the system and try all sort of testing such as booking, payment etc. All functionality are working according to our requirements such as secure login through Bluetooth technology and locking unlocking, payment gateway, report generation, bill generation etc., and many more even we check the vulnerability of the system by our admin in term of security issues. We want to state that this system is highly reliable and safe to use with regard to security measures and our main concern was about the security.

![Image](image-url)
Fig II: Search location for users

Fig III: Nearest slot available display

Fig IV: Booking page
Fig V: Vendor location add page

Fig VI: Vendor slot add page

Fig VII: Vendor transaction view page
V. CONCLUSION

A bicycle locking mobile app and end user provides simple, easy and effective interface for the user. This application acts as a gateway between user and bicycle locking. This application can be operated by all type of users. This system provides easy and simple user interface which can be efficiently handled by people with less computer knowledge. And also this application is economically feasible as it can be developed using minimum cost, with minimum hardware and software requirements.

VI. FUTURE ENHANCEMENTS

There is a lot of scope for future enhancements in this system, as new user requirements emerge new ideas of implementation. New modules can be implemented to make the application more efficient. The project can be modernized in future as and when the requirement for the same arises, as it is very flexible in terms of development.

- GPS can be included in this system so that user can track their bicycle.
- Further notification through SMS can be implemented to notify the user and super admin when the slot is unlocked.

References