

An app based System for Construction Related Home Services in Urban Areas

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Abstract

The online home services are very useful for everyone who are all very busy with their official work. Now a days finding a suitable person for providing home services such as cleaning, plumbing, electronic maintenance and repair, gas range repairing, cooking and baby care are much difficult and also is a burden for the busy person. By taking this into consideration, in this paper, we have proposed an APP based system for performing construction related services such as plumbing, cleaning, painting and colouring, and other house maintenance related services. The main focus of this proposed system is to provide home services by integrating skilled service man and user through an Android application. If there is a leakage issue at home, we search and hire a plumber near your locality who will fix it immediately. Further, if there is an issue with your AC, immediately we try to find a suitable air conditioning expert who can fix it. This service works at our house makes a busy man very irritate in finding a service person within short duration. Therefore our proposed APP helps in fixing problems of carpentry, construction services, house cleanliness, home appliances, painting, home decorating and all other household problems. We have developed an Android APP and the results are discussed.

I. INTRODUCTION

The home service applications in India is still requires speedy development and implementation with suitable APP or Web based system. Home service application can be very helpful for the people who are very busy in their official work and cannot go out and call for a service men. Therefore, online home services takes a vital role and beneficiary for the people who are really needy in finding skilled and trusted home construction related service providers such as plumber, painter, etc. There are two primary systems can be introduced in any type of online home services: i) Service providers, ii) Users [1]. The actual services of online home services APPs can be understood by the APP's name like Urban Sitter, Care.com, Zomato, uber, swiggy [2], eats24, Phable and Medisafe, etc. It provides the way it serves as a platform where you can hire professional servicemen for all your household works by doing a single click [3]. As all other applications, our proposed system mainly focuses on online construction related home services with inbuilt functionalities to fulfil customer satisfaction.

Home Services APP is the new trend in the market of on-Demand applications. The demand for home services application will increase as people are not interested in going out and searching for a service man in their busy schedule. The trusted home services application with skilled and qualified personnel can repair and fix everything very quickly and also for the low cost [4]. People or employees are constantly in an urgency and are keen to pay more amount to ensure for an efficient service.

Our proposed APP can provide employment for many skilled service man in construction field since smart phones are used for accessing this platform in an easy and efficient way. This application can have a massive growth and can be reached to everyone in the country. As the existing application “Urban Clap” is only available in metro cities, this application extends to reach out all the cities across India. The main objective of the proposed system is to increase the customer satisfaction level in the field of construction related home services field.

The following sections are organized as follows: Section II describes the related work. Section III describes the proposed system. Section IV describes the results and discussion. Section V explains conclusion of the paper.

II. RELATED WORK

In this modern era, as aforementioned, people are not interested in hiring or searching the service providers for food, health care, home care, and other construction related services [5]. They feel more comfortable by hiring service providers through on line by sitting in their current location by doing a single click on mobile. Therefore many researchers developed the above mentioned services as online based APP or Web based services. This section deals the existing and related works done by other young researchers.

Urban Clap is an APP – based service marketplace that connects customer to service professional [6]. Their strategy is to connect more and more number of customers to use the platform of Urban Clap to make their life more easy and comfortable. Urban Clap is a one of the leading online marketplace in order to provide services such as Electronic repair and maintenance, home cleaning and maintenance, homecare and design, pest control. It also provides services such as packers and movers, business services, event management, weddings and party management, health and wellness, salon, etc. [7].

Firefox Bikes have developed a web based online service with the provision of online service booking for different customers from any place and at any time [8]. In addition to the provision of online service booking, they have also introduced different levels of service packages at different rates for customers. In order to utilise this facility, the owners are requested to create their account in Firefox website and create their account. Further, before booking the service, the customers are requested to enter details such as mode of buying, invoice number, bike name, city, mobile number and other details.

Bernard Shibwabo et al focused on the implementation of Handyman offering different home services such as plumbing, electrical appliances repair [9]. The authors specified that the users has to register as a client or Handyman. When they are logging for the first time, a reasonable amount need to be paid in order to activate the account. They have developed a mobile APP from which a client can choose their actual service which they need for their house maintenance.

III. PROPOSED SYSTEM

The focus of our proposed system is to develop an APP for offering construction based online home services.

The key objectives of the proposed system are described below:

1. Develop an APP in such a way that the client and the service providers can interact
2. Providing available services in the APP related to construction through online.

3. Slot and type of service can be booked through online.
4. Ensuring customer satisfaction

The proposed architecture of our system is given in Figure 1.

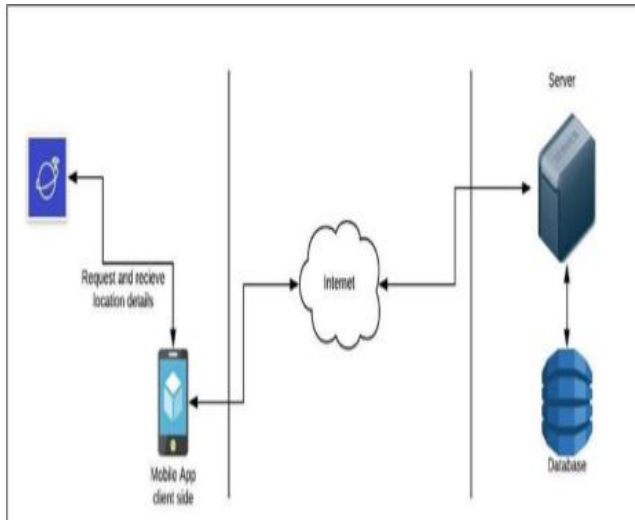


Figure 1: Architecture of Proposed System

Whenever a client is requesting for a construction related home service, the mobile APP first retrieves the location of the client through GPS system. The client can able to choose the required service from the available services. Client can interact with the information stored in the database with the help of mobile APP.

Use-Case Diagram

The Use Case diagram for the proposed system is shown in Figure 2. It consists of a list of actions or event steps, typically defining the interaction between a role and a system, to achieve a goal. As seen in the Figure, in use case diagram the actor is a human, who can make choices through the interface and get the desired result. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. The use case is made up of a set of possible sequences of interactions between systems and users in a particular environment and related to a particular goal.

Benefits of the APP

The proposed APP provides the following benefits to the client:

1. Easy to access through online
2. Immediate response and service by identifying the location of the client
3. Good customer satisfaction with the help of experienced labours
4. Real time tracking
5. Flexible payments

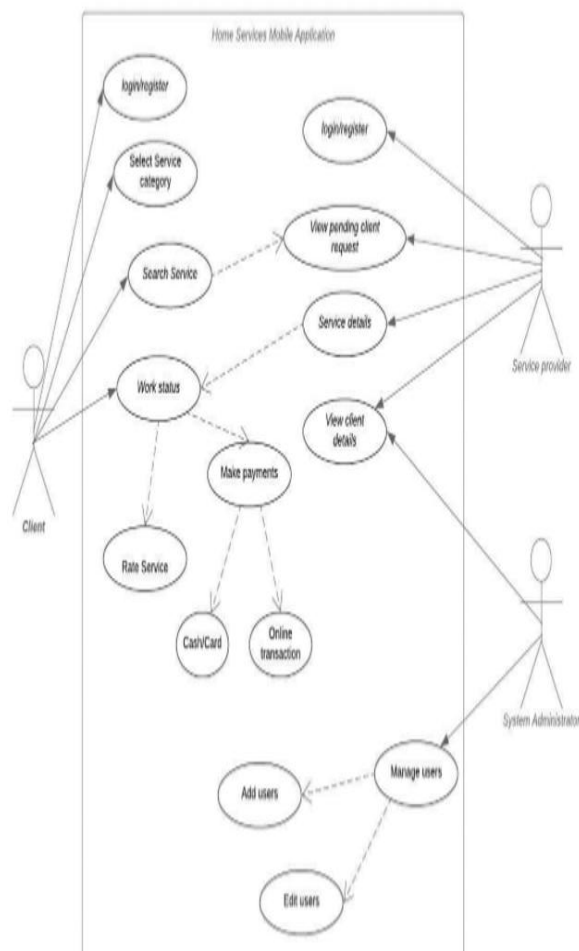


Figure 2: Use Case Diagram

The interactive modules for the proposed system are as follows:

- Login service
- Search service & Book service
- Admin service

All the above said modules are described with APP implementation in the next section.

IV. RESULTS AND DISCUSSION

We have developed an APP for offering the construction related online home services as aforementioned. The first module is described below. Once the client or customers are placing an order, they wait only for few minutes for tracking the experienced service provider. Therefore, the customer interactive modules are taking a vital part of our proposed system.

i) LOGIN SERVICE

In this Login page, provides two options for login: i) Sign-in and ii) Sign-up. Sign-in is mainly for the one who already have their account whereas Sign-up option is for registering as a new user. Figure 3 shows the signing in and signing up page to use this APP. Clients are requested to enter their email-id along with password.

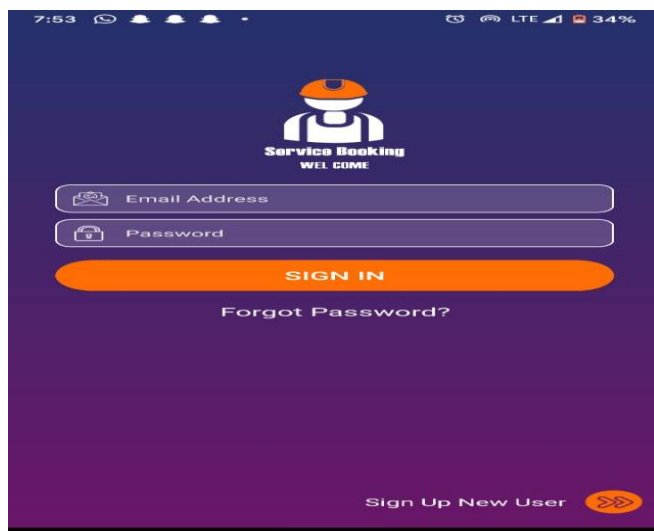


Figure 3: Login Service – Sign in Page

After log-in process gets over, the client or service providers are supposed to fill up their details. After entering the details when we click on the sign up button then the details about us will be get registered and the account can be opened for us.

ii) SEARCH & BOOK SERVICE

Another module is providing Search service for the clients. This app consists of numerous facilities that a man requires in his Day to Day life. There is also a search option for the one's who are in search of new facility. You can also find various services close to your residential or work station by setting Location which makes you to avail the service in an easier way by saving your time. Figure 4 shows the built in search service.

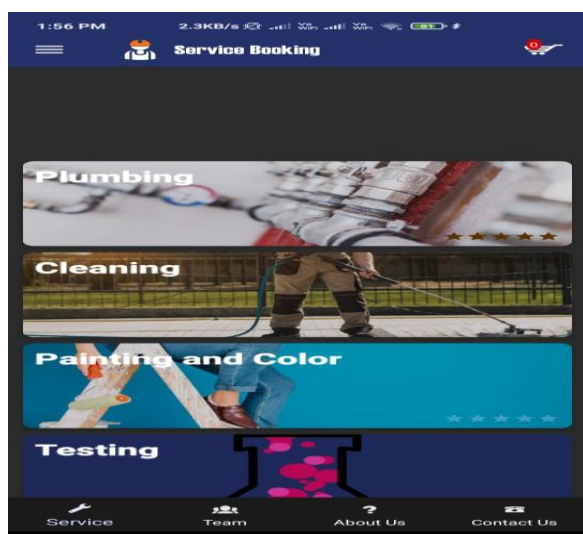


Figure 4: Search Services.

The clients are requested to select their requested service from the given menus. For instance, if the client is in need of a well experienced plumber for home maintenance and repair, then that service need to be clicked from their place itself through their APP present in hand-held mobile.

The APP also supporting for the client to select the time slot based on their availability for accepting the service provider at their house and the output screenshot is shown in Figure5. The payment detail also can be viewed by the client once they book the slot as shown in Figure 6.

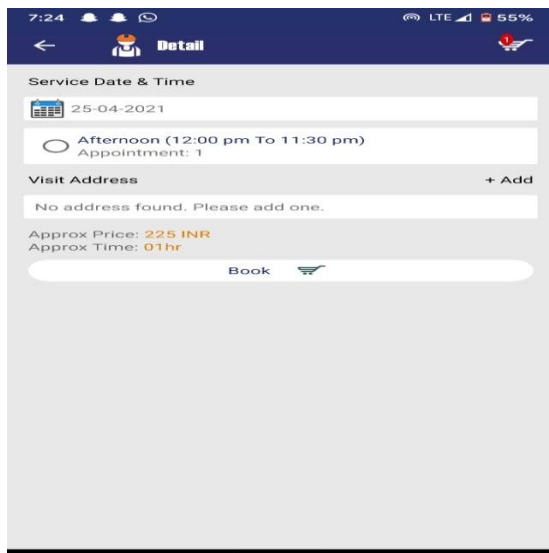


Figure 5: Slot Selection via APP

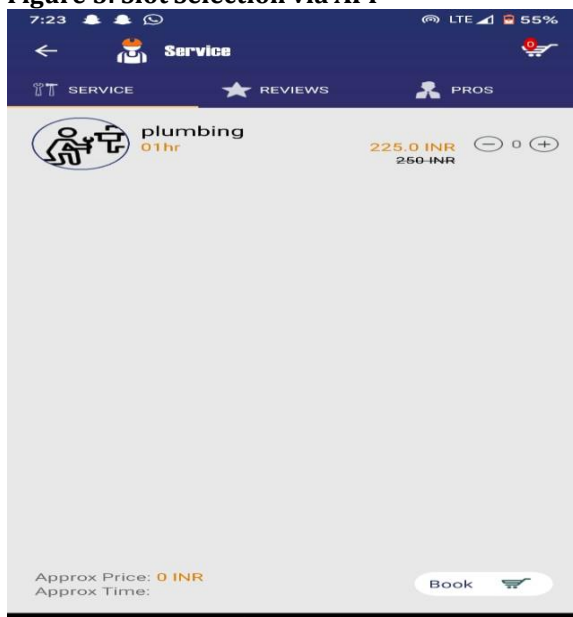


Figure 6: Payment Detail

The client is allowed to provide their delivery address through online. The following Figure 7 shows the delivery address form creation. It also allows the client to edit the address and add new requirements in that APP.

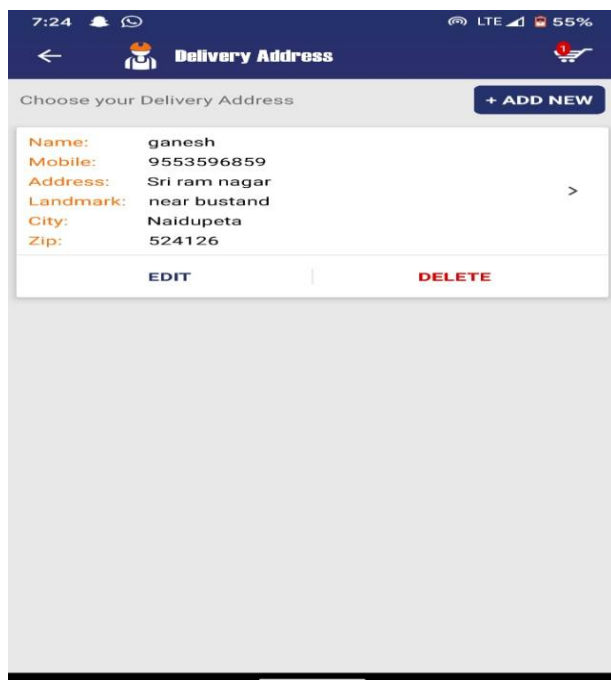


Figure 7: Delivery Address

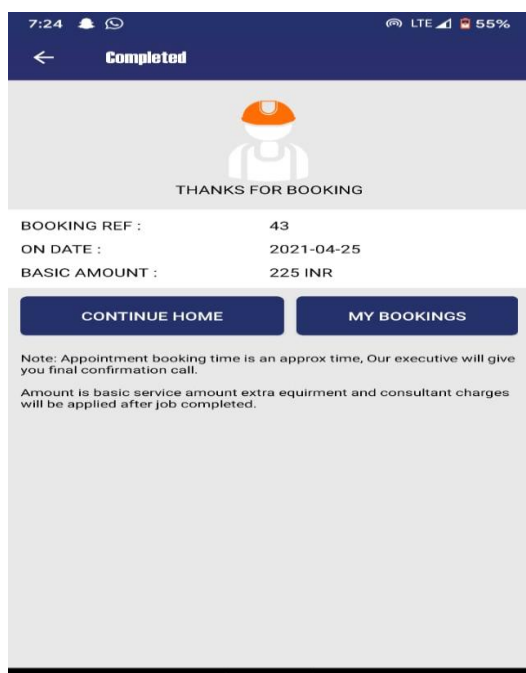


Figure 8: Booking Status

Once the client completed booking, then the APP projects 'Thanks for Booking' message to the client in the view mode. Figure 8 shows this scenario.

iii) ADMIN SERVICE

Admin will take the responsibility of tracking the booked services, adding services, tracking new skilled service providers and removing any service provider. Admin also takes responsibility of tracking the total no of appointments booked and serviced every day.

The primary role of the admin is to advertise the APP to the society among lot of people for getting enquiries and providing more services. The key intention of the admin is to increase the number of appointments and bookings by the clients and service count day by day. In addition, the admin need to take more care on the work to be assigned to the well experienced labour or service provider, handling pending works and maintaining the details of completed works. The payment module also can be tracked by the admin only.

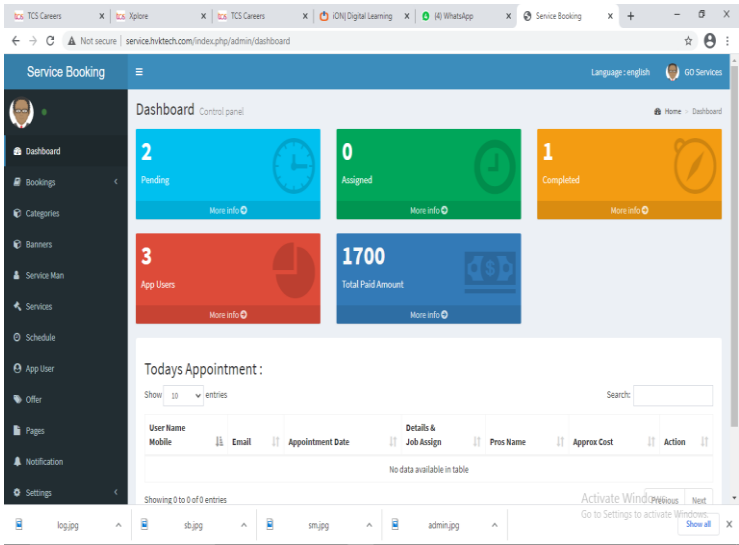


Figure 9: Tracking Appointments

Figure 9 shows the tracking appointments and dashboard to interact with thof the Admin service.

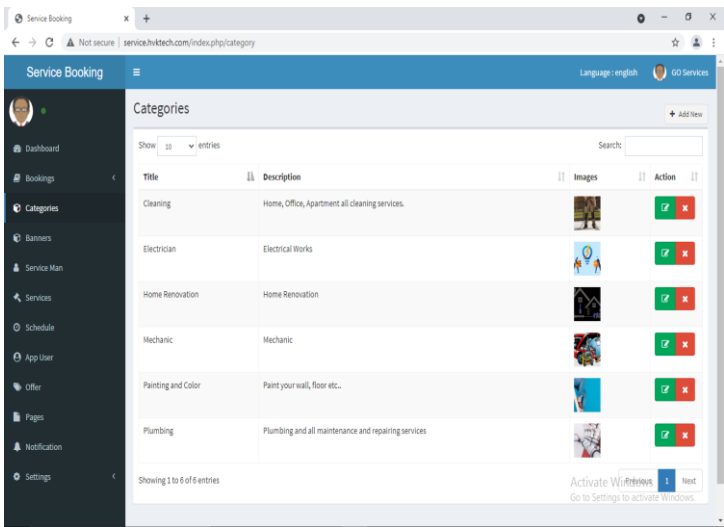


Figure 10: Service Categories

Figure 10 shows the various categories of services provided by this APP and is designed with description and relevant images for understanding the category to the client. Therefore, any unemployment user also can able to view the image of category and book their need accordingly.

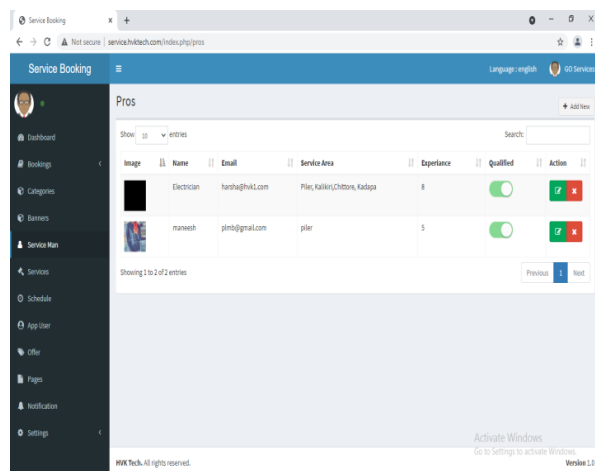


Figure 11: Details of Service Provider

Figure 11 shows the service providers details such as name, e-mail, service area and years of experience in their field.

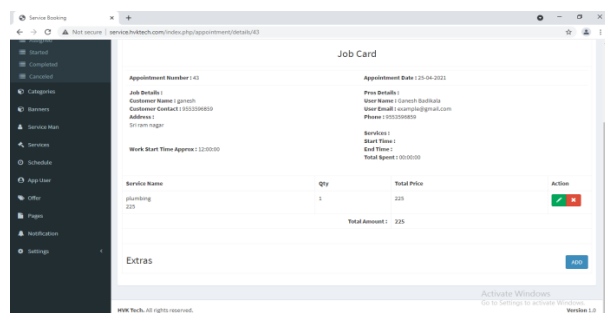


Figure 12: Job Allocation

Figure 12 shows the job (or service) allocation details and the id of the service provider who does the work in the assigned slot.

Service men application

In this module service men is provided with a mail id and password during their login. Service men can login using those credentials. This consist of two section PENDING and COMPLETED. Service men can see all assigned works under pending section and completed works under completed section.

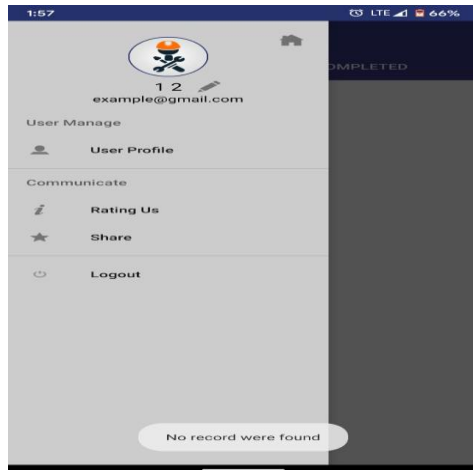


Figure 13: Customer Rating

Figure 13 shows the customer feedback by clicking the Rating menu. In addition, after using the APP, there is a Logout facility designed.

V. CONCLUSION AND FUTURE ENHANCEMENT

Home services are needed and the demand for services is increasing since the population in our country is growing. We have developed an APP for providing construction related online home services for offering plumbing, cleaning, electrical repair and maintenance, building maintenance and painting, etc. The design of work allotment, login pages by the admin and client, customer feedback were discussed.

This application can be further enhanced by allowing the users to drag and drop to another location and it can be used by the user in case if the user wants the service request to be supported at another location than his/her current location. This extension requires the integration of maps into this application. Another useful enhancement can be made by providing more service types to the user. Further, this application is built only for the Android users, this application can also be implemented for other platform like iOS and Windows.

REFERENCES

1. K. Aravindhnan, K. Periyakaruppan, T. S. Anusa, S. Kousika and A. L. Priya, "Web Application Based On Demand Home Service System," 2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS), 2020, pp. 1458-1462, doi: 10.1109/ICACCS48705.2020.9074284.
2. Mitali Gupta, "A Study on Impact of Online Food delivery app on Restaurant Business special reference to zomato and swiggy", R- International Journal of Research and Analytical Reviews, [VOLUME 6, ISSUE 1, 2019.
3. Prachi S. Tambe, Nikam Poonam , Gunjal Trupti , Jadhav Priti , Parakhe Sonali, "An Online System for Home Services", International Journal of Scientific Development and Research, Volume 5, Issue 9, 2020.

4. Nikam Poonam R., Gunjal Trupti T., Jadhav Priti V., Parakhe Sonali K., Ms. Prachi S. Tambe, "International Research Journal of Engineering and Technology", Volume: 06 Issue: 12, 2019.
5. S Rachitha , Sanjana Sathish , Shruthi S , Vismitha, Ambika V, "Web based System for Domestic Services", International Journal of Research in Electronics and Computer Engineering, Volume. 7, ISSUE 2, 2019.
6. Rajni Pathak, Punam Salunkhe, "A research study on Customer expectation and satisfaction level of Urban Clap in beauty services with special reference to Pune", International Journal of Management, Technology And Engineering, Volume 8, Issue 5, 2018.
7. Heemika Sharma, "To Study The Service Quality Of Urbanclap Using Servqual: With Special Reference to Rajasthan", Mukta Shabd Journal, Volume 9, Issue 6, 2020.
8. <https://www.91wheels.com/news/firefox-bikes-introduces-online-service-booking-with-services-packages>.
9. Bernard Shibwabo Kasamani, Denis Gikundi, "A Location-Based Service for Handyman Order Placement", Journal of Systems Integration, 2017