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An Online Portal for Home-Based Services

Dr. Shivprasad Patil[1], Rajkumar V Patil[2], Ali Habib[3] Shraddha Shelke[4], Shweta Rajput[5], Taha Habib[6]

[1,2,3,4,5,6](Department of Information Technology, NBN Sinhgad School of Engineering, Pune, India) shivprasad.patil@sinhgad.edu[1]

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***Abstract*:** *As we are advancing to an era of technology we have to outsmart our regular day-to-day life activities by using technological advancement. One such technological advancement that can boost up our day-to-day service needs is the use of a website that can bring all the essential day-to-day services to our doorstep with just a click. In our normal life routine, we require a lot of services for our household, workplace, offices, etc. However, finding all of these services in our contacts is very difficult. So to solve this problem we propose a portal of services that can fulfill everyone's need for services. The portal will provide all kinds of services including plumbing, carpenter, electrical maintenance, laundry services, home salon services, Ro servicing, etc. The user can sign up for the website and then log in and access all the details of the services nearby their lo cation. They can choose from a list of service providers with different ratings and reviews to find the most relevant service provider of their choice. The user can directly contact the service provider and get their services. The user will also get a unique id when they order a service from a service provider to make the process more secure for the user. It will also provide a feature for users to schedule their required services for a particular time of the day and the payment can be made both in cash well as online payment will be accepted. The users can also share their feedback about a particular service to let other users know about the service provider. This portal will not only benefit the user however it will also be beneficial for the service provider. As various service providers can register with the portal and get a more customer base with the help of this portal. The service provider will also have the o ption to put their status as available and not available throughout the day so when a particu lar service provider is on a break they can change their status to not available and the customers will not be able to find them in the list. In this way, users can easily avail the needed home services without any difficulty or delay at their preferred location.*

Keywords— *Service Provider, Online Portal, Home-based Services, Customer, GPS.*

I. INTRODUCTION

Technology and Intelligence together has established a climate where we can get data and services online from any place whenever needed at any point in time. Such admittance of data and online web management is feasible just by using our fingertips throu gh web applications.

These web applications can be assembled as unique, area explicit, corporate, and amusement. "Online Portal for home-based services" is a portable web application created for web users which is obliged to the necessities of a user who wants to give domestic home services online by uniting the users and service providers. The enrolled users can request service available through the application and based on the user's area, the closest service provider is appointed to cater to the user's demand for the service. GPS (Global Positioning System) is used to detect the location of the user and the service provider[14]. It connects the user with its nearest service provider. The application's basic and straightforward interface; immediate service, characteristic of online payment, makes it amazingly helpful and moderately simple to use for all users[1]. At the point when somebody needs help with domestic undertakings, the issue happens because of the unavailability of service talented or a reliable provider who gives faultless services on demand. Our on-request home service framework manages the premier helpful unlimited way to deal with your household work completed[7].

II. LITERATURE SURVEY

Some portals similar to our online portal for online home-based services are in existence. Each has some advantages and disadvantages.

Urban Company also known as Urban Clap is an app-based service marketplace that connects the users to service professionals. They aim to connect maximum people to their platform which will benefit many individuals. In this fast-paced life, Urban-Company aims to deliver necessary services to the customers at their doorsteps with a single mouse click. The company has also introduced contactless payment method where the customer can pay through online payment gateways[12]. Urban Company was

founded in 2014. Urban Company is currently operating in 30 major cities in India including Pune, Bangalore, Chennai, Delhi NCR, etc.

TaskRabbit is another platform that provides home-based service to the customers on their doorsteps. TaskRabbit allows users to act as both service providers and consumers. TaskRabbit is an American mobile marketplace that was founded in 2008 [3].

Housejoy is a Bengaluru-based startup that provides services at users' doorsteps which include renovation, interior desiging, painting etc. Housejoy was founded in 2014. Housejoy provides its services mainly in Bengaluru.

UrbanPro is an existing learning platform which allocates mentors, tutors, and trainers according to the need of the customer . If anyone wants to work as a tutor in UrbanPro he/she can do so by selecting the tutor registration option on the UrbanPro website. UrbanPro was founded in 2010.

K. Aravindhan and K. Periyakaruppan in [1] developed a web application for household services using technologies like PHP and MySQL.

Mobile Applications like **"**FacilityKart**"** are also available that provide similar household services[4].

III. EXISTING SYSTEM

There are many online home-based services available in today**'**s date to make our lives even more comfortable. Few systems are discussed below:

Urban Company is one of the most successful Indian online marketplaces that offers home installation, maintenance and repair services, and wellness services. It was launched in November 2014 and is Asia**'**s largest home service platform. It partners with almost tens of thousands of service providers, helping them with training, procurement, insurance, technology, etc[6].

UrbanPro is an online portal for learning. Students, parents can compare among multiple Tutors, Trainers, and Institutes and choose the best ones that suit them according to their requirements. UrbanPro has provided a huge platform for almost 6.5 lakh verified Tutors, Trainers, and Institutes all over India to facilitate coaching services online as well as offline for more than 25 lakh students across more than 1000 categories.

Timesaverz is also a marketplace connecting services providers with clients seeking home services. They use their proprietary algorithms to assign suitable service providers to complete the task from their network of service providers. They are currently offering cleaning services, appliance repairing services, and handyman services.

Zimmber is another Indian online home services company that connects commoners with service professionals. They provide services in various sectors like plumbing, electrical repair services, SPA, pest control services, laundry, painting, etc. Th ey provide services in Mumbai, Pune, Delhi, Gurgaon regions. They use an aggregation model where they contract with a large number of service providers in each specific service area later connecting them with clients[9].

IV. GAP ANALYSIS

The 'Facility Kart' mobile application which is mentioned in [4] does not utilize the GPS (Global Positioning System). The user has to manually guide the service provider to the desired location. The process of manual guiding becomes difficult and time - consuming for both the service provider and the customer. This negates the sole purpose of the application to save time.

Urban Company on the other hand provides a training period of 6 months to the service providers registered with them. After t his, the service provider has to sign a contract with Urban Company which ma kes him bound to the company and he can**'**t work individually. This can affect the income of the service provider if he doesn't get enough online orders for his service.

V. PROPOSED SYSTEM

In our proposed system, the service providers will be free to work individually as well as with our organization. The clients and the service providers are the actors. The clients have to register themselves on the portal. Once it**'**s done, they can login and avail all the services provided by the portal. They can search for their desired service and then the service providers providing that particular service will be filtered according to location of the client from nearest to farthest. The clients can choose amongst the displayed list of providers on the basis of their ratings and charges.

The service providers also have to register themselves along with the details of the services they are offering. When the customer selects the service, the selected service provider receives an approval request. He/she can accept or deny the request according to his schedule. If the request is accepted by the provider, they will receive the location details of the customer. After the appointment between client is scheduled a unique random Id is generated for the provider, the customer receives same Id for verification process during the appointment. It will enhance security. Various modes of payments are included for the clients . They can also rate the provider after their experience. Below is the use-case diagram of our system.

➢ ALGORITHMS USED

The Google maps application programming interface (API) returns the response of a person's location in the form of coordinates, like latitude and longitude. These coordinates of the user and the service provider have to be converted in such a way that the distance of each service provider from the user's location can be shown in kilometers. To find the distance of each service provider from the customer we use the algorithm shown below:

Userlocation = new google.maps.LatLng(userlatitude , userlongitude);

Providerlocation = new google.maps.LatLng(providerlatitude , providerlongitude);

Distance = google.maps.geometry.spherical.computeDistanceBetween(Userlocation , Providerlocation);

The distance between the service provider and the user is stored in the distance variable. This will help the customer to know which service provider is located nearest to his/her location.

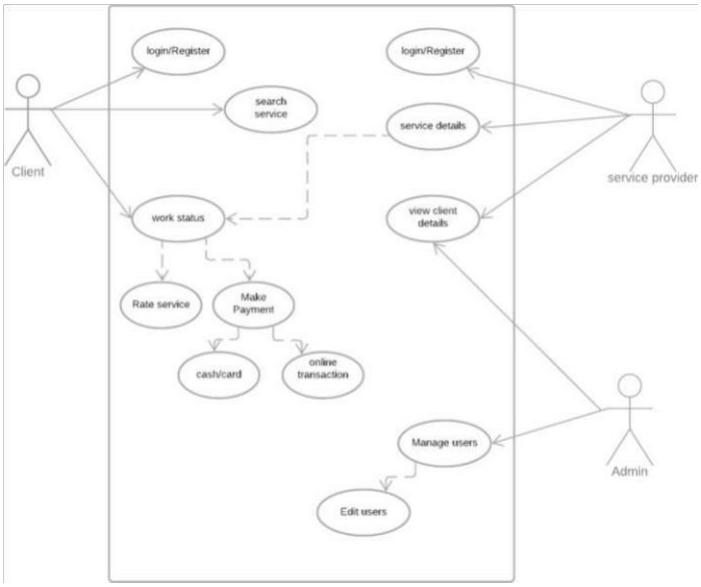

Fig. 1. Use-case Diagram.

VI. DEVELOPMENT TOOLS

The entire development process is subdivided into three parts: front-end development, back-end development, and database design. The front end means the part which is visible to the users and the backend forms the link between the front end and the database.

A. Front-End Development

The front end is coded in Javascript and its framework ReactJS along with HTML5 and CSS3 [11]. React is an open-source javascript library for building responsive user interfaces and UI components. React comes along with Node Package Manager (NPM) that includes other utility libraries as well. We have used react to create a fully dynamic web application. Hypertext Markup Language (HTML) is used to create the structure of the web application. Cascading Style Sheets (CSS) is used for designing and gives a pretty look to the web pages. The web application has registration, login, home, and service pages all developed using the above three technology stacks.

B. Back-End Development

Back-end technology is a very important aspect of web development. Backend forms the server of the system being developed. Backend forms the link between the frontend and the database. In our web application, we have used NodeJs and ExpressJs as ou r backend technology. We have made many get and post requests to communicate with the frontend. The backend sends a response to the frontend whenever specified. Response in the frontend is received in JSON format from the backend. We have also included libraries such as CORS, Body-Parser, knex, etc in our backend.

C. Database Design

Lastly, the database design is the most important and challenging task for an application developer. The database is connected to the front-end with the help of a back-end. The details entered by the users during registration on the website are stored in the database. In our system, we are using PostgreSQL as our database. PostgreSQL, also known as Postgres, is a free and open-source relational database management system. We have various tables in the database. Each service has a separate table namely grooming, electrician, salon, plumber, etc. The provider details are present in the provider table and user details are present in the user table. The GPS location of the user and the provider is stored in the useraddress and provideraddress table respectively.

VII. CONCLUSION

In this paper, we have designed an end-to-end web application that will help users in finding their desired home services. This application provides domestic home services where clients can be served for grooming, electrical, plumbing, pest control, and carpentry services. The proposed system uses GPS to locate the nearest service provider to the client. The proposed system ha s the option of online payment where the clients can make contactless payments from his/her bank accounts. The existing system does not have a GPS facility. The application is user-friendly and is easy to use. Accordingly, this application appears to be more unique, viable, and productive than the current framework.

REFERENCES

[1] K. Aravindhan, 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] R. Mietzner and F. Leymann, "A self-service portal for service-based applications," 2010 IEEE International Conference on Service -Oriented Computing and Applications (SOCA), 2010, pp. 1-8, doi: 10.1109/SOCA.2010.5707165.

[3] N. M. Indravasan, Adarsh G, Shruthi C, Shanthi K, Dadapeer. **"**An Online System for Household Services**"**. International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181.

[4] Sheetal Bandekar and Avril D'Silva. Domestic Android Application for Home Services. *International Journal of Computer Applications* 148(6):1-5, August 2016.

[5] Shahrzad Shahriari, Mohammadreza Shahriari, Saeid gheji. **"**Ecommerce and It Impacts on Global Trend and Market**"** International Journal of Research
– Granthaalayah. Vol.3 (Issn.4): April 2015.

[6] L.RichardYe, Yue Jeff Zhang, Dat-DaoNguyen, James Chiu,**"**Fee-based online services: Exploring consumers**'**willingness to pay **"**. Journal of International Technology and Information Management.

[7] Q. Yu, Y. Bai and X. Shan, "A research on customer satisfaction with household appliances industry service," 2011 IEEE 18th International Conference on Industrial Engineering and Engineering Management, 2011, pp. 2008-2011, doi: 10.1109/ICIEEM.2011.6035562.

[8] K. Xu, M. Song and X. Zhang, "Home Appliance Mashup System Based on Web Service," 2010 International Conference on Service Sciences, 2010, pp. 94-98, doi: 10.1109/ICSS.2010.61.

[9] MC Filibeli, O Ozkasap and MR Civanlar, "Embedded Web Server-based Home Appliance Networks", *Journal of Network and Computer Applications*, vol. 30, no. 2, pp. 499-517, 2007.

[10] A. Bhattacharjee et al., "Service-Hub: A better approach for developing the system of online marketing for daily services," 2017 4th International
Conference on Networking, Systems and Security (NSysS), 2017, pp. 1-5, doi: 10.1109/NSYSS2.2017.8267801.

[11] A. Javeed, "Performance Optimization Techniques for ReactJS," 2019 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT), 2019, pp. 1-5, doi: 10.1109/ICECCT.2019.8869134.

[12] S. Saxena, S. Vyas, B. S. Kumar and S. Gupta, "Survey on Online Electronic Paymentss Security," 2019 Amity International Conf erence on Artificial Intelligence (AICAI), 2019, pp. 756-751, doi: 10.1109/AICAI.2019.8701353.

[13] W. Werapun, J. Fasson and B. Paillassa, "Home Service Communities and Authentication," 2011IEEE 10th International Conference on Trust, Security and Privacy in Computing and Communications, 2011, pp. 818-823, doi: 10.1109/TrustCom.2011.108.

[14] A. Mulla, J. Baviskar, A. Baviskar and A. Bho vad, "GPS assisted Standard Positioning Service for navigation and tracking: Re view & implementation,"

2015 International Conference on Pervasive Computing (ICPC), 2015, pp. 1 -6 , doi: 10.1109/PERVASIVE. 2015.7087165.