

“MAZDOOR”- Online Application for Household Services

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ABSTRACT

The “MAZDOOR” system is incredibly useful for everybody who wants home services like painter, electrician, carpenter, plumber, construction worker, fabricator etc. When an individual is new to a locality it’s hard to find services they want, in such a situation e-Commerce plays an important role. Hence to help them get their services done in time, we have created an application called the “MAZDOOR” App. Through this application one can search for the services they want, visit the profile of best labor available in their area. The profile contains various information regarding the labor as the name, phone no etc. The customer can directly give a call to the labor and ask for the services they want. Hence, mazdoor app acts as a broker which helps to connect customer to the labor.

General Terms: Services, Authentication, Customers, Registration

Keywords: [C.5.5], Data Storage and Representation [E.2], User Interfaces [H.5.2], Social Issues [K.4.2], Object-oriented Programming [D.1.5]

I. INTRODUCTION

“Mazdoor” is an android application that basically helps the common man i.e., the customer to connect to our daily wages labor. The customer can henceforth contact a labor from its regional area through our application to get his work done accordingly. Our application will have a list of various helpers such as: Electrician, Carpenter, Plumber, Construction Worker, Fabricator, Painter etc. The labor will be able to create their profile by entering some necessary

details and their working field according to their profession. The customer can contact them according to their preferences. After the connection between the labor and the customer is established the services that the customer needs can be easily done by the labor with reasonable charges according to the customer as well as well labor will. The labor will be referred to the customer as per the feedback given by the previous customers. The labor with an excellent feedback will be showcased at the top position in the customer’s device who is located in their area.

We have designed and developed a system that provides many services at your doorstep in just one click. A system that helps you connect to one of the best varieties of laborer providing a huge range of service like painter, movers and packers, repair persons, cleaners, electricians, plumber and many more. A very simple process is carried out to call a labor for their service. System is versatile as the profile of the laborer's can be viewed from everywhere you desire.

The only main intention of creating this amazing application is to provide the daily wages worker a platform to get into the market and earn for their living, as this pandemic has caused a wave of unemployment amongst them. This app can also be a help to the customers as their daily wage worker charges less compared to the various online services that are already available in today's market. This application is user friendly and a simple registration process is carried out for customers as well as labor. This app by our means is the solution for the labor who is unable to find a job as well as it is a solution to a customer who wants a particular service to be done in no time.

II. LITERATURE REVIEW

The rise of e-commerce and the growth of online services have shown a significant effect on the market share. People are operating and engaging more into doorstep services. Below are materials from various researchers who have worked in this field:

K. Aravindhana and team [1] proposed an online home services system. Feature which makes this system different from other system is "chatbot" which helps the users to clarify the queries posted. The purpose was to obtain the service providers detailed information which helps customer to get their services fulfilled instantly.

Neale A. Dagdag and team [2] presented a mobile application (android device). Here the main goal was finding work opportunities for skilled workers. The skilled workers will get coupled with customers who need service such as: electrical service, plumbing service, automotive repair, and other similar services which can be provided at customer's respective home. The main revenue will get generated from commissions and quarterly membership fee from the skilled workers. Additionally, from advertisers and/or companies who wish to tie-up with team of At-Your-Service mobile application.

N. M. Indravasan [4] in his study observed that people are very much in their heavy work culture. In the busy schedule if any unexpected household task pops up. That distracts them from their work. E-Commerce plays primary role in solving this issue. Creating a platform that can provide number of services in one click. For verifying the customers on platform authors went with email verification.

Zhang Fuyan and team [5] evaluates the importance of STM32core. How the problem in a household could be resolved using the STM32core using which they designed a robot which consists of sensors and Wi-Fi camera loader mounted on the machine to remote control the moments. PHP and QT is used to build the server. Using telecommunication technology robot and mobile communicate through each other, Bluetooth was used for location and tracing purpose.

Sheetal Bandekar and team [6] proposed an application called "Domestic Android Application for Home Services" is a customized Mobile Application which uses Android SDK (Software Development Kit), Eclipse, Java and MySQL for Android Application Development. Application provides domestic services to customers such as: electrical services, plumbing services and carpentry services and many more household services. Application uses GPS to fetch the users' location and assigns nearest service provider from his existing location dynamically. Hence, this

system seems to be more dynamic, effective and efficient than the existing system.

Shurong Wang [8] The researcher focused on the problem of migrant labors and enterprises. He came up with a platform for migrant labors training and enterprise labor supply. Platform consists of migrant labors information, enterprise information, training organization. Supervisory authorities are the one who will have all control and access. Due to this system difficult to find the right people was resolved(training), social problems were addressed, and overall quality was increased.

Chang-Xing Qi along with his group mates [9] proposed an application intelligent switching platform which resolves the problem of provincial labor and social security services got through. Intelligent switching platform aims on data interactive mode and inter-departmental information. The customer service system is a centralized and integrated platform which is built with call centers and other modern means of communication and information technology. The architecture of the system was designed in such a way that there was a detailed function of the system.

Taein Hwang [10] in his thesis focused on (DSM). Some service providers come up with their own service platform, but many small-scale service providers don't own platform and so fails in connecting with customers digitally. This was resolved through digital home service delivery and management system (DSM). It shows how home services of the service providers can be delivered to the service user via the DSM system. One of important point highlighted by author here is how the service user can be provided with various services through reliable service aggregator and receive a single bill for the subscribed services.

S Rachitha [11] studied and explored the relationship between customers and service providers. Establishing a market platform which not only embrace consumer demand but also giving importance to service professionals and providing an opportunity to earn

additional income. Authors proposed an idea of providing an option to the people, wherein if they encounter any issue. They can contact a service professional from another location as well. Respective person can assist them in fixing the issue. To reduce the infrastructure overhead and operational cost web application was deployed on cloud. System also provides quality of service, as it works on servicemen working history and rating.

III. SYSTEM REQUIREMENTS

1) Software Requirements

1.1) SERVER SIDE

- a) Operating System: Windows 7 SP1 or later (64-bit), x86-64 based
- b) Database: Firebase Database.
- c) Payment Gateway: Any Payment Gateway viz., Razer pay, Paytm.

1.2) CLIENT SIDE

- a) Mobile Device with Android OS 5.0 or above and a stable internet connection.

2) Hardware Requirements

2.1)SERVER SIDE

- a) A hosting service based on Firebase Database.

2.2)CLIENT SIDE

- a) Disk Space: 25-50 MB.
- b) RAM:256

IV. SYSTEM DESIGN

1) System Tools

Major Tools used in our system:

1.1) Flutter

Flutter which is Google's portable user interface (UI) framework for building modern, native, and reactive applications for iOS and Android is the frontend of the application. The widgets in Flutter are used to create the UI, and **Dart** language is used to develop the application. As Flutter uses its own rendering engine to draw widgets. Elements have a reference to the widget and are responsible for comparing the widget differences. For developing our system using Flutter we needed a dependent and reliable Integrated Development Environment (IDE). To achieve this, we used **Android studio** which is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains IntelliJ IDEA software and designed specifically for Android development. As Flutter is a cross – platform, the same code base can be used for iOS and Android app. The development of the interface of application is done using flutter since the changes done using flutter are reflected suddenly and it is very simple to use.

1.2) Firebase

Firebase which is the platform developed by Google to develop web application and mobile application is the backend of the application. Firebase is a Backend-as-a-Service (BaaS) app development platform that provides hosted backend services such as a real time database, cloud storage, authentication, crash reporting, machine learning, remote configuration, and hosting for your static files. Firebase is used to store and retrieve the information regarding the profile of labor and services they are going to provide. Besides this it is also used to verify and validate the customer, admin and labor. The details of customer and labor such as email, password, name is going to be

stored on firebase. The verification of email id of customer and labor is also done by firebase cloud storage. It is a reliable database and most of time flutter packages work great with firebase.

Firebase authentication provides an easy sign -in process. There is no compromise done with the security using firebase. Since it is real time database set it helps to store and synchronize data. Firebase also allows to fix the bugs instantly.

2) Existing System

The existing systems contain the small print of the service providers which may be viewed by the users who require the household services to be done. The system provides the services like gas services, plumbing services and electrical services. User can view the services through the system and that they can contact the actual providers to urge the services. The user has to register to utilize the service that's provided by the system. The system acts the intermediary between the user who is in need of services and therefore the provider who offers the service. Within the present system, the users can only ready to get the small print about the service providers they are doing not have the choice to register for the services required and therefore the tracking of such services Once the user specifies his request for service, the users' location is fetched using GPS (Global Positioning System) that fetches the latitude and longitude. Based on his current location, the application will try to find out the nearest service provider by fetching the latitude and longitude of the service provider, and then the nearest service provider is allotted to the requested user by sending SMS (Short Message Service), to cater the user's request. Users can give the feedback about the services that was provided to them. The existing system is available only in one language that is English and thus it is difficult for some people to use the application.

3) Proposed system

The proposed system is a web application developed using Flutter as front end and Firebase as back end to assist the users in getting the essential services like plumbing, electrician, carpenter, plumber and site worker. Any user who is either a customer or service provider can register with this website. User can register with this website by providing the basic details like name, age, gender, address, mobile number and mail id. Along with the basic details the service provider needs to fill up some extra fields such as Aadhar card no service they provide. Once the user fills all the fields an OTP is generated and used for account verification. After this they can login by providing their username and password to avail the needed services. User can look for service provider by mentioning the location. Once the user needs a particular service, they can place a request. After placing the request, the user is directed to the payment module of the system. Then the confirmation of the request is received by the user as well as by the service provider. The user can post their grievances and feedbacks about the offered services. The reviews that are posted by the customers help to rate the service providers can be viewed by the admin and the necessary actions can be taken over any the complaints. The system consists of login for user, service provider and admin. When the user logs in with his credentials, they can able to search the service and retrieve it from the database. When the service provider logs in with their credentials, they can able to view the request and edit their respective profiles. Once the service is added it is stored into the database and it can be retrieved when the service wants to be viewed. The admin is responsible to manage all the data related to the services and has the right to edit or delete any of the information that is against the policy of our application.

4) System Modules

4.1) Registration Module

The user who wants to avail our services will have to register to our application. The user can register itself as customer or labor based upon its need. Once all the required details and credentials are provided, an OTP will get generated and your account will henceforth get verified. Now the user has successfully created their account and is free to use our services. Each time the user has to use the application they have to login to the application using valid username and password.

4.2) Admin Module

The functionality of this module is basically related to the admin. The admin is responsible to manage all the data related to the services and has the right to edit or delete any of the information that is against the policy of our application. This module is managed by the Firebase console.

4.3) Service Module

When a customer wants to access the service, they can do it by logging in to their account. The application has a very interactive and easy to understand user interface. The customer can easily search for the service they are looking for through various categories of services. Further they can scroll between their choice of service and get recommendation as to which labor is near to the user's area and which one has a better feedback.

4.4) Payment Module

Once the customer finds an appropriate service provider that they are looking for they had to place a request for the service where the customer needs to pay for the services opted. Various options are available through which one can do the payment. It is done through an external payment gateway which guarantees a secure and safe transaction. After the payment is done, a confirmation acknowledgement is

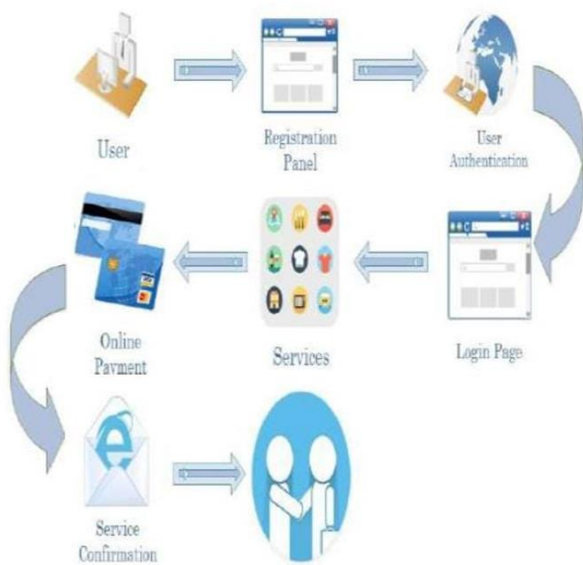
forwarded to the user about all the details of services opted.

4.5) Feedback Module

Once the service is completed our customers are requested to rate the overall service done by service provider and asked for any valuable feedback or improvements to be done in providing a better service. Based on this feedback the application rates the service providers.

The idea proposed in this paper is one among the new innovations where it reduces the trouble for customers to search for the labor and to get the profitable services to be done.

5) System architecture for the proposed model



V. CONCLUSION

The application designed reduces the difficulty of finding an appropriate service provider by providing a detailed information that helps the user to get their services fulfil instantly. A systematic Android application offers ease in accessing services in a more comfortable way. The system is very helpful in today’s life as it allows the user to contact well-qualified and

skilled labors at just one click. The system to a extend helps to reduce the current situation of unemployment that has raised due to the pandemic of Covid -19 by allowing labors to seek new jobs through it. Unlike other application, the system will be available in regional languages (i.e., Marathi, Hindi). Thus, the application seems to be more dynamic, effective and efficient than existing system

VI. FUTURE SCOPE

“Mazdoor”- an online application for household services provides some of the domestic services which are most frequently used. The system accommodates the changing needs of the end user. The overall system can be designed so that its capacity can be increased in response to the further requirements for which the application provides an appropriate service overseas. Further this application can be prolonged by merely adding up the required services and additional features. For example, the current system provides the following services such as home carpenter, electrician, plumber, site worker and Painter further the system can be extended as per the requirements of the user. The system can be added with various services such as mobile and computer repair, laundry services, catering services, RO servicing, packers and movers and many more. The application that is currently developed support three languages - English, Hindi and Marathi which will be soon developed in other native languages for the ease of the user.

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